

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

NOV 03 2011

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Form C-141  
Revised October 10, 2003

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

Release Notification and Corrective Action

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company	Southern Union Gas Services	Contact	Rose Slade
Address	801 S. Loop 464, Monahans, TX 79756	Telephone No.	432-940-5147
Facility Name	Line #290 (East of Jal South)	Facility Type	Natural Gas Pipeline
Surface Owner	George Willis	Lease No.	30-025-38822

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
D	34	25S	37E					Lea

Latitude North 32 degrees 05.467' Longitude West 103 degrees 09.406

NATURE OF RELEASE

Type of Release	Natural Gas, Crude Oil and Produced Water	Volume of Release	20 BBLS	Volume Recovered	None
Source of Release	Natural Gas Pipeline	Date and Hour of Occurrence	October 26, 2011 - Time Unknown	Date and Hour of Discovery	October 26, 2011 - 1345 hours (CDT)
Was Immediate Notice Given?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Not Required	If YES, To Whom?			
By Whom?	Date and Hour				
Was a Watercourse Reached?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse.			

If a Watercourse was Impacted, Describe Fully.\*

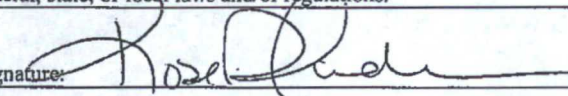
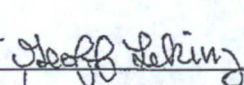
Describe Cause of Problem and Remedial Action Taken.\*

A twelve (12)-inch <sup>1500 PSI</sup> low pressure 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 fitted with a temporary pipeline clamp to mitigate the release. Following initial response activities, the affected pipeline segment was replaced with <sup>STEEL</sup> poly pipe.

Describe Area Affected and Cleanup Action Taken.\*

The affected area measures approximately 350 feet in length and 5 to 10 feet in width. The release will be remediated according to NMOCD regulatory guidelines.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Signature: 	OIL CONSERVATION DIVISION	
Printed Name: Rose Slade	ENVIRONMENTAL ENGINEER: Approved by District Supervisor: 	
Title: EHS Compliance Specialist	Approval Date: 11/3/11	Expiration Date: 01/04/12
E-mail Address: rose.slade@sug.com	Conditions of Approval: SUBMIT FINAL	Attached <input type="checkbox"/>
Date: November 3, 2011 Phone: 432-940-5147	C-141 BY 01/04/12	IRP-11-11-2752

\* Attach Additional Sheets If Necessary



# *Basin Environmental Service Technologies, LLC*

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Lovington, New Mexico 88260

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## **REMEDIATION SUMMARY, RISK-BASED SOIL CLOSURE REQUEST & GROUNDWATER INVESTIGATION PROPOSAL**

**SOUTHERN UNION GAS SERVICES  
LINE #290 (EAST OF JAL SOUTH)**

**Lea County, New Mexico**

**Unit Letter "D" (NW/NW), Section 34, Township 25 South, Range 37 East**

**Latitude 32° 05.467' North, Longitude 103° 09.406' West**

**NMOCD Reference #1RP-11-11-2752**

Prepared For:

**HOBBS OCD**

Southern Union Gas Services  
801 S. Loop 464  
Monahans, TX 79756

**JUN 20 2012**

Prepared By:

**RECEIVED**

Basin Environmental Service Technologies, LLC  
3100 Plains Highway  
Lovington, New Mexico 88260

**June 2012**

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Joel W. Lowry  
Project Manager

*approved  
Jeff Leasing  
Env. Specialist  
NMOCD-DIST 1  
6/20/12*



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## 1.0 INTRODUCTION & BACKGROUND INFORMATION

Basin Environmental Service Technologies, LLC (Basin), on behalf of Southern Union Gas Services (Southern Union), has prepared this *Remediation Summary, Risk-Based Soil Closure Request & Groundwater Investigation Proposal* for the release site known as Line #290 (East of Jal South). The legal description of the release site is Unit Letter "D" (NW/NW), Section 34, Township 25 South, Range 37 East, in Lea County, New Mexico. The geographic coordinates of the release site are 32° 05.467' North latitude and 103° 09.406' West longitude. The property affected by the release is owned by Mr. George Willis. Please reference Figure 1 for a "Site Location Map".

On October 26, 2011, Southern Union discovered a release had occurred on the Line #290 pipeline. Failure of a section of the twelve inch (12") steel, high-pressure natural gas pipeline resulted in the release of approximately twenty barrels (20 bbls) of a mixture of natural gas, crude oil, and produced water. During initial response activities, the pipeline was fitted with a temporary pipeline clamp to mitigate the release. Following initial response activities, the affected pipeline segment was replaced with twelve inch (12") steel pipe.

The release was reported to the New Mexico Oil Conservation Division (NMOCD) Hobbs District Office on November 3, 2011. The "Release Notification and Corrective Action" (Form C-141) indicated the release affected an area measuring approximately three hundred and fifty feet (350') in length and approximately five feet (5') to ten feet (10') in width. General photographs of the release site are provided as Appendix A. The Form C-141 is provided as Appendix E.

## 2.0 NMOCD SITE CLASSIFICATION

A search of the New Mexico Water Rights Reporting System (NMWRRS) database maintained by the New Mexico Office of the State Engineer (NMOSE) indicated information was unavailable for Section 34, Township 25 South, Range 37 East. A depth to groundwater reference map utilized by the NMOCD indicates groundwater should be encountered at approximately eighty-five feet (85') to ninety feet (90') below ground surface (bgs). Based on the NMOCD ranking system, ten (10) points will be assigned to the site as a result of this criterion.

A search of the NMWRRS database indicated there are no water wells within 1,000 feet of the release. Based on the NMOCD ranking system, zero (0) points will be assigned to the site as a result of this criterion.

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

NMOCD guidelines indicate the Line #290 release site has an initial ranking score of ten (10) points. 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)

Based on the analytical results of soil samples collected during the advancement of soil boring "SB-1" (discussed in the "Summary of Soil Remediation Activities" below), the NMOCD site classification should be modified. Laboratory analytical results indicated the soil sample collected at fifty-five feet (55') bgs exhibited a Total Petroleum Hydrocarbon (TPH) concentration of 1,300



mg/Kg. The distance between the soil sample collected at fifty-five feet (55') bgs and the estimated depth to groundwater (85 to 90 feet) is less than fifty feet (50'). An additional ten (10) points should be added to the depth to groundwater criterion.

NMOCD guidelines indicate the Line #290 (East of Jal South) release has a modified ranking score of twenty (20) points. The soil remediation levels for a site with a ranking score of twenty (20) points are as follows:

- Benzene – 10 mg/Kg (ppm)
- BTEX – 50 mg/Kg (ppm)
- TPH – 100 mg/Kg (ppm)

The New Mexico Administrative Code (NMAC) does not currently specify a remediation level for chloride concentrations in soil. Chloride remediation levels are set by the NMOCD on a site-specific basis.

### **3.0 SUMMARY OF SOIL REMEDIATION ACTIVITIES**

On November 10, 2011, four (4) delineation trenches (Trench 1 through Trench 4) were advanced at the site to investigate the vertical and horizontal extent of impacted soil. Selected soil samples were submitted to Xenco Laboratories, Inc., in Odessa, Texas, for analysis of TPH and chloride concentrations using EPA Methods SW 846-8015M and 300.1, respectively. Table 1 summarizes the "Concentrations of Benzene, BTEX, TPH & Chlorides in Soil". Soil sample locations are depicted in Figure 2, "Site & Sample Location Map". Laboratory analytical reports are provided as Appendix C.

Delineation trench "Trench 1" was located at the release point, adjacent to, and to the south of, the Line #290 pipeline. The delineation trench was advanced to a total depth of approximately seven feet (7') bgs. Following the excavation of the delineation trench, one (1) soil sample (Sample 1) was collected from the floor of the trench and submitted to the laboratory for analysis. Laboratory analytical results indicated a TPH concentration of 18,800 mg/Kg and a chloride concentration of 676 mg/Kg in soil sample "Sample 1".

Delineation trench "Trench 2" was located approximately fifty feet (50') to the west of the release point. The delineation trench was advanced to a total depth of approximately eighteen inches (18") bgs. Following the excavation of the delineation trench, one (1) soil sample (Sample 2) was collected from the floor of the trench and submitted to the laboratory for analysis. Laboratory analytical results indicated a TPH concentration of 14,800 mg/Kg and a chloride concentration of 1,150 mg/Kg in soil sample "Sample 2".

Delineation trench "Trench 3" was located approximately one hundred and ninety feet (190') to the northwest of the release point, in a pooling area near the terminus of the flow path of the release. The delineation trench was advanced to a total depth of approximately fourteen feet (14') bgs. Following the excavation of the delineation trench, one (1) soil sample (Sample 3) was collected from the floor of the trench and submitted to the laboratory for analysis. Laboratory analytical results indicated a TPH concentration of 39,900 mg/Kg and a chloride concentration of 5.62 mg/Kg in soil sample "Sample 3".

Delineation trench "Trench 4" was located approximately two hundred and fifteen feet (215') to the northwest of the release point, at the terminus of the flow path of the release. The delineation trench was advanced to a total depth of approximately six feet (6') bgs. Following the excavation of the



delineation trench, one (1) soil sample (Sample 4) was collected from the floor of the trench and submitted to the laboratory for analysis. Laboratory analytical results indicated a TPH concentration of 20,400 mg/Kg and a chloride concentration less than the laboratory method detection limit (MDL) of 4.42 mg/Kg in soil sample "Sample 4".

On November 15, 2011, one (1) soil boring (SB-1) was advanced at the site to further delineate the vertical extent of impacted soil. Soil boring "SB-1" was located at the terminus of the flow path of the release, in the area defined by delineation trenches "Trench 3" and "Trench 4". The soil boring was advanced to a total depth of approximately eighty-five feet (85') bgs. Soil samples were collected at five-foot (5') drilling intervals and field screened using a Photo-Ionization Detector (PID) and/or chloride test kit. A soil boring log is provided as Appendix B.

Soil samples collected from soil boring "SB-1" at drilling depths of five feet (5'), fifteen feet (15'), twenty-five feet (25'), thirty-five feet (35'), forty-five feet (45'), fifty-five feet (55'), sixty-five feet (65'), seventy-five feet (75'), eighty feet (80'), and eighty-five feet (85') bgs were submitted to the laboratory for analysis of TPH and/or chloride concentrations. Soil samples were also analyzed for benzene, toluene, ethylbenzene and xylene (BTEX) using EPA Method SW 846-8021b. Laboratory analytical results indicated benzene concentrations ranged from less than the laboratory MDL of 0.0207 mg/Kg in soil sample SB-1 @ 55' to 1.70 mg/Kg in soil sample SB-1 @ 15'. BTEX concentrations ranged from 0.0440 mg/Kg in soil sample SB-1 @ 45' to 177 mg/Kg in soil sample SB-1 @ 15'. TPH concentrations ranged from 119 mg/Kg in soil sample SB-1 @ 45' to 8,240 mg/Kg in soil sample SB-1 @ 15'. Chloride concentrations ranged from less than the laboratory MDL in soil samples SB-1 @ 15' and SB-1 @ 25' to 490 mg/Kg in soil sample SB-1 @ 5'.

On May 2, 2012, following NMOCD approval of the *Risk-Based Site Closure Proposal*, Basin began remediation activities at the release site. Chloride test kits were used to field-screen the extent of impacted soil and to guide the excavation. The excavation floor was advanced and leveled at approximately ten feet (10') bgs, pending the installation of an NMOCD approved twenty (20) mil polyurethane liner. The excavation sidewalls were advanced until laboratory analytical results from confirmation soil samples indicated benzene, BTEX, TPH and chloride concentrations were below NMOCD regulatory standards. Excavated material was stockpiled on-site pending final disposition.

On May 3, 2012, four (4) soil samples (North Wall #1, Northwest Wall, East Wall #1 and South Wall #1) were collected from the excavation sidewalls and submitted to the laboratory for analysis. Soil samples North Wall #1, East Wall #1 and South Wall #1 were analyzed for concentrations of BTEX constituents and TPH. Soil sample Northwest Wall was also analyzed for concentrations of chloride. Laboratory analytical results indicated BTEX constituent concentrations were less than the appropriate laboratory MDL of 0.0020 mg/Kg for each of the soil samples submitted. Laboratory analytical results indicated TPH concentrations were less than the laboratory MDL of 15.0 mg/Kg for each of the soil samples submitted. Analytical results indicated chloride concentrations ranged from less than the laboratory MDL of 4.24 mg/Kg for soil sample South Wall #1 to 14.9 mg/Kg for soil sample East Wall #1. Each of the submitted soil samples exhibited benzene, BTEX, TPH and chloride concentrations below NMOCD regulatory standards.

On May 4, 2012, one (1) soil sample (South Wall #2) was collected from the excavation sidewall and submitted to the laboratory for analysis of BTEX constituents, TPH and chloride concentrations. Laboratory analytical results indicated BTEX constituent concentrations were less than the appropriate laboratory MDL of 0.0020 mg/Kg. Laboratory analytical results indicated the concentration of TPH was less than the laboratory MDL of 15.0 mg/Kg. Analytical results indicated the chloride concentration was 7.16 mg/Kg. The soil samples exhibited benzene, BTEX, TPH and chloride concentrations below NMOCD regulatory standards.



On May 7, 2012, two (2) soil samples (West Wall and North Wall #2) were collected from the excavation sidewalls and submitted to the laboratory for analysis of BTEX constituents, TPH and chloride concentrations. Laboratory analytical results indicated benzene concentrations were less than the laboratory MDL of 0.0010 mg/Kg for each of the soil samples submitted. Laboratory analytical results indicated BTEX constituent concentrations ranged from less than the appropriate laboratory MDL of 0.0020 mg/Kg for soil sample West Wall to 0.00331 mg/Kg for soil sample North Wall #2. Laboratory analytical results indicated TPH concentrations were less than the laboratory MDL of 15.0 mg/Kg for each of the soil samples submitted. Analytical results indicated chloride concentrations ranged from 6.40 mg/Kg for soil sample West Wall to 7.13 mg/Kg for soil sample North Wall #2. Each of the submitted soil samples exhibited benzene, BTEX, TPH and chloride concentrations below NMOCD regulatory standards.

On May 9, 2012, six (6) soil samples (N. Wall #3, N. Wall #4, N. Wall #5, S. Wall #3, S. Wall #4 and S. Wall #5) were collected from the excavation sidewalls and submitted to the laboratory for analysis of BTEX constituents, TPH and chloride concentrations. Laboratory analytical results indicated benzene concentrations were less than the laboratory MDL of 0.0010 mg/Kg for each of the soil samples submitted. Laboratory analytical results indicated BTEX constituent concentrations were less than appropriate laboratory MDL of 0.0020 mg/Kg for each of the submitted soil samples. Laboratory analytical results indicated TPH concentrations were less than the appropriate laboratory MDL for each of the soil samples submitted. Analytical results indicated chloride concentrations were less than the appropriate laboratory MDL for each of the soil samples submitted. Each of the submitted soil samples exhibited benzene, BTEX, TPH and chloride concentrations below NMOCD regulatory standards.

On May 17, 2012, five (5) soil samples (N. Wall #6, S. Wall #6, W. Wall #2, N. Wall #7 and S. Wall #7) were collected from the excavation sidewalls and submitted to the laboratory for analysis of BTEX constituents, TPH and chloride concentrations. Laboratory analytical results indicated benzene concentrations were less than the laboratory MDL of 0.0010 mg/Kg for each of the soil samples submitted. Laboratory analytical results indicated BTEX constituent concentrations ranged from less than the appropriate laboratory MDL of 0.0020 mg/Kg for soil samples W. Wall #2 and N. Wall #7 to 0.0106 mg/Kg for soil sample S. Wall #7. Laboratory analytical results indicated TPH concentrations were less than the appropriate laboratory MDL for each of the soil samples submitted. Analytical results indicated chloride concentrations ranged from 4.88 mg/Kg for soil sample W. Wall #2 to 16.8 mg/Kg for soil sample S. Wall #6. Each of the submitted soil samples exhibited benzene, BTEX, TPH and chloride concentrations below NMOCD regulatory standards.

Between May 2 and May 18, 2012, approximately two thousand, seven hundred cubic yards (2,700 cy<sup>3</sup>) of impacted material was transported to Sundance Services, Inc. (NMOCD Permit #NM-01-0003), for disposal. Copies of a representative selection of disposal manifest are provided as Appendix D.

On May 21, 2012, a twenty (20) mil polyurethane liner was installed on the floor of the excavation at approximately ten feet (10') bgs. Approximately one foot (1") of non-impacted pad sand was installed both above and below the liner to protect the liner from damage during installation and backfilling activities. The liner was fitted with eight inch (8") PVC conduit in three (3) locations to allow for the installation of groundwater monitor wells without compromising the integrity of the liner.

On May 21 through May 25, 2012, the excavation was backfilled with non-impacted material purchased from the landowner. Backfill was compacted in eighteen inch (18") lifts and contoured to



fit the surrounding topography. The final dimensions of the excavation were approximately three hundred feet (300') in length, ranging in width from approximately twelve feet (12') to approximately forty-five feet (45'), and approximately ten feet (10') in depth. The site will be reseeded with a landowner approved seed mixture prior to the close of the 2012 calendar year.

#### **4.0 QA/QC PROCEDURES**

##### **4.1 Soil Sampling**

Soil samples were delivered to Xenco Laboratories, Inc., in Odessa, Texas, for analysis of BTEX, TPH, and/or chloride concentrations using the methods described below. Soil samples were analyzed for BTEX, TPH, and/or chloride concentrations within fourteen (14) days following the collection date.

The soil samples were analyzed as follows:

- BTEX concentrations in accordance with EPA Method SW 846-8021b
- TPH concentrations in accordance with modified EPA Method SW 846-8015M
- Chloride concentrations in accordance with EPA Method 300.1

##### **4.2 Decontamination of Equipment**

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

##### **4.3 Laboratory Protocol**

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

#### **5.0 SOIL CLOSURE REQUEST**

Remediation activities conducted at the Line #290 (East of Jal South) release site met the objectives set forth in the *Remediation Summary & Risk-Based Site Closure Proposal* dated April 2012. Soil samples collected from the excavation sidewalls were analyzed by an NMOCD-approved laboratory, and concentrations of BTEX, TPH, and chloride were below the applicable regulatory remediation action levels established for the site. Based on these analytical results, Basin recommends Southern Union provide the NMOCD-Hobbs District Office a copy of this *Remediation Summary, Risk-Based Soil Closure Request and Proposed Groundwater Investigation* and request the NMOCD grant soil closure to the Line #290 (East of Jal South) release site.



## 6.0 GROUNDWATER INVESTIGATION PROPOSAL

- Upon receipt of NMOCD and New Mexico Office of the State Engineer (NMSOE) approval, Southern Union proposes the installation of three (3) groundwater monitor wells (MW-1, MW-2 and MW-3) to evaluate the status of the groundwater at the Line #290 release site. Groundwater monitor wells will be installed through established PVC conduits in order to maintain the impermeability of the liner. Proposed Monitor Well MW-1 will be installed adjacent to the release point north of Line #290. Proposed Monitor Well MW-2 will be installed in the flow path, approximately one hundred feet (100') west of the release point. Proposed Monitor Well MW-3 will be installed in the pooling area approximately two hundred feet (200') west of the release point. Please reference Figure 2 for proposed monitor well locations.
- During the installation of the monitor wells, soil samples will be collected at five foot (5') drilling intervals and field screened using a PID and chloride field test kits. Selected soil samples will be submitted to the laboratory for determination of constituent concentrations of BTEX, TPH and/or chloride. Monitor well boring logs and laboratory analytical reports will be provided to the NMOCD-Hobbs District Office in the *Groundwater Investigation Summary*. Driller's logs will be provided to the NMOSE-Roswell District Office.
- Groundwater monitor wells will be developed, gauged and sampled using EPA Standard Methods. Groundwater samples will be submitted to Xenco Laboratories, Inc., of Odessa, Texas, for determination of concentrations of chloride in accordance with EPA Method 300.0, BTEX in accordance with EPA Method SW846-8021b, and/or total dissolved solids (TDS) in accordance with SM2540C. Results from groundwater sampling events will be submitted to the NMOCD-Hobbs District Office in a *Groundwater Investigation Summary*. Based on the analytical results of the initial groundwater investigation, additional monitor wells may be required to adequately delineate any impact to groundwater at the site.

## 7.0 REPORTING

On review and approval of this proposal by the NMOCD, Southern Union is prepared to begin the activities summarized in the *Groundwater Investigation Proposal* section of this report. On completion of the proposed field activities, Southern Union will submit a *Groundwater Investigation Summary* to the NMOCD-Hobbs District Office, documenting field activities and the laboratory analytical results of initial groundwater sampling.



## **8.0 LIMITATIONS**

Basin Environmental Service Technologies, LLC, has prepared this *Remediation Summary, Risk-Based Soil Closure Request & Groundwater Investigation Proposal* to the best of its ability. No other warranty, expressed or implied, is made or intended. Basin has examined and relied upon documents referenced in the report and on oral statements made by certain individuals. Basin has not conducted an independent examination of the facts contained in referenced materials and statements. Basin has presumed the genuineness of these documents and statements and that the information provided therein is true and accurate. Basin has prepared this report in a professional manner, using the degree of skill and care exercised by similar environmental consultants. Basin notes that the facts and conditions referenced in this report may change over time, and the conclusions and recommendations set forth herein are applicable only to the facts and conditions as described at the time of this report.

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



## 9.0 DISTRIBUTION:

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[curt.stanley@sug.com](mailto:curt.stanley@sug.com)
- Copy 4: Basin Environmental Service Technologies, LLC  
P.O. Box 301  
Lovington, New Mexico 88260





**Figure 1**  
**Site Location Map**  
**Southern Union Gas Services**  
**Line #290 (East of Jal South)**  
**Lea County, New Mexico**  
**NMOCD Ref. #: 1RP-11-11-2752**

1,000 500 0 1,000 2,000

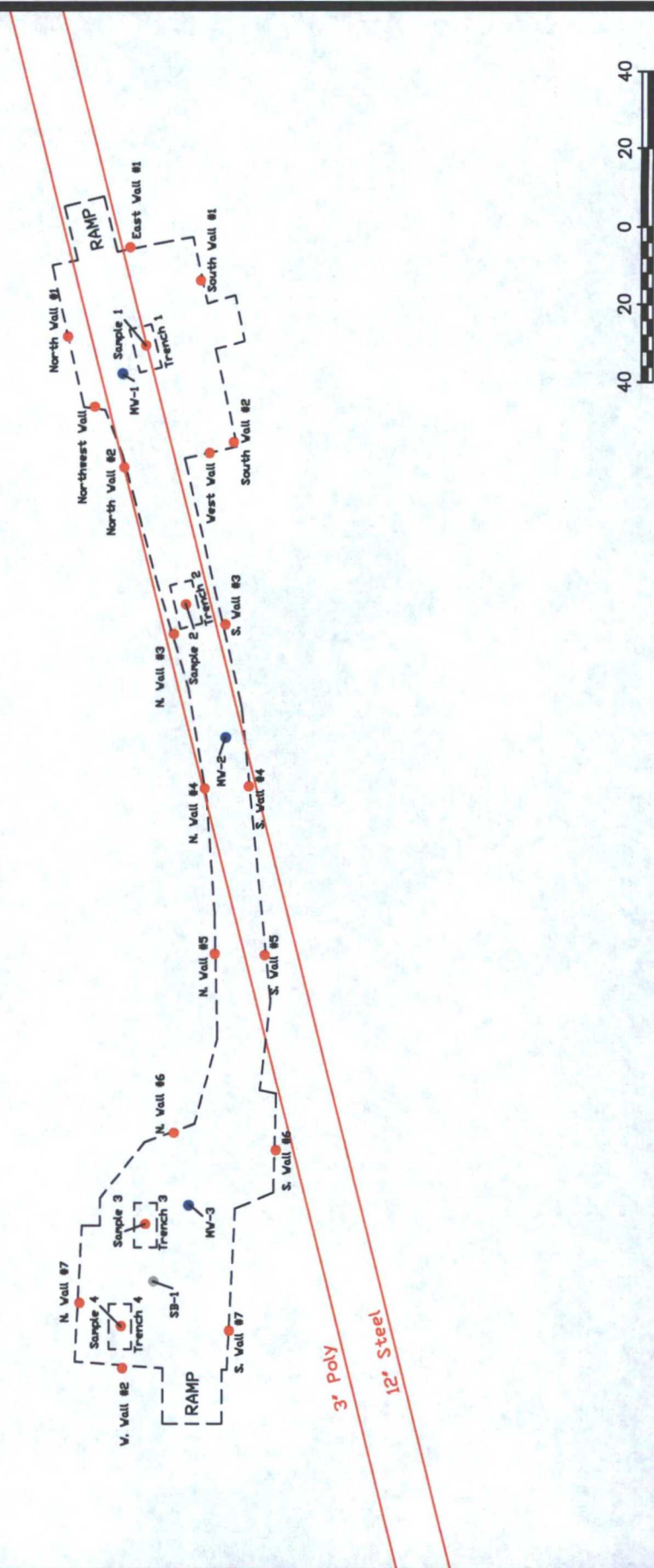
Distance in Feet

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

Drawn By: BJA  
 May 21, 2012

Checked By: BRB  
 Scale: 1" = 2000'





## Basin Environmental Services

Figure 2  
Site & Sample Location Map  
Southern Union Gas Services  
Line #290 (East of Jal South)  
NMOCD Ref #1RP-11-11-2752  
Lea County, New Mexico

Prep By: JWJ	Checked By: BJA
June 18, 2012	Scale 1"=40'



TABLE 1

## CONCENTRATIONS OF BENZENE, BTEX, TPH &amp; CHLORIDE IN SOIL

SOUTHERN UNION GAS SERVICES

LINE #250 (EAST OF JAL SOUTH)

LEA COUNTY, NEW MEXICO

NMOC REFERENCE NO: 1RP-11-11-2752

SAMPLE LOCATION	SAMPLE DEPTH (BGS)	SAMPLE DATE	SOIL STATUS	METHOD: EPA SW 846-8021B, 5030					METHOD: 8015M					TOTAL TPH C <sub>6</sub> -C <sub>35</sub> (mg/Kg)	E 300 CHLORIDE (mg/Kg)
				BENZENE (mg/Kg)	TOLUENE (mg/Kg)	ETHYL-BENZENE (mg/Kg)	M.P. -XYLENES (mg/Kg)	O-XYLENE (mg/Kg)	TOTAL XYLENE (mg/Kg)	TOTAL BTEX (mg/Kg)	GRO C <sub>6</sub> -C <sub>12</sub> (mg/Kg)	DRO C <sub>12</sub> -C <sub>28</sub> (mg/Kg)	ORO C <sub>28</sub> -C <sub>35</sub> (mg/Kg)		
Sample #1	7'	11/10/2011	Excavated	-	-	-	-	-	-	-	13,800	4,550	418	18,800	676
Sample #2	1.5'	11/10/2011	Excavated	-	-	-	-	-	-	-	10,700	3,770	280	14,800	1,150
Sample #3	14'	11/10/2011	Excavated	-	-	-	-	-	-	-	30,500	8,840	519	39,900	5.62
Sample #4	6'	11/10/2011	Excavated	-	-	-	-	-	-	-	14,800	5,110	466.0	20,400	<4.42
SB-1 @ 5'	5'	11/15/2011	Excavated	0.273	3.56	7.00	21.5	9.33	30.8	41.7	1,440	2,010	75.6	3,530	490
SB-1 @ 15'	15'	11/15/2011	In-Situ	1.70	16.0	28.3	95.2	35.3	131	177	4,640	3,410	186	8,240	<4.38
SB-1 @ 25'	25'	11/15/2011	In-Situ	0.719	4.38	9.03	28.5	11.1	39.6	53.7	1,550	1,460	65.5	3,080	<4.37
SB-1 @ 35'	35'	11/15/2011	In-Situ	0.0118	0.0459	0.216	0.0260	0.0414	0.0674	0.341	30.9	182	<15.8	213	-
SB-1 @ 45'	45'	11/15/2011	In-Situ	0.00720	<0.0102	0.0643	0.0213	0.00904	0.0303	0.0440	<15.3	119	<15.3	119	9.70
SB-1 @ 55'	55'	11/15/2011	In-Situ	<0.0207	0.219	0.619	2.03	0.816	2.85	3.68	360	885	52.1	1,300	-
SB-1 @ 65'	65'	11/15/2011	In-Situ	0.00907	0.0235	0.0636	0.246	0.0903	0.336	0.432	109	412	43.4	564	55.3
SB-1 @ 75'	75'	11/15/2011	In-Situ	0.00954	<0.0105	0.00755	0.0449	0.0159	0.0608	0.0779	41.5	246	22.0	310	19.2
SB-1 @ 80'	80'	11/15/2011	In-Situ	0.00785	0.0254	0.0839	0.264	0.108	0.372	0.489	94.7	444	24.9	564	15.6
SB-1 @ 85'	85'	11/15/2011	In-Situ	0.00955	<0.0106	0.00591	0.0269	0.00976	0.0367	0.0521	25.7	178	<15.9	204	12.8
North Wall #1	9'	5/3/2012	In-Situ	<0.0010	<0.0020	<0.0010	<0.0020	<0.0010	<0.0020	<0.0020	<15.0	<15.0	<15.0	<15.0	4.32
Northwest Wall	9'	5/3/2012	In-Situ	-	-	-	-	-	-	-	-	-	-	-	9.89
East Wall #1	9'	5/3/2012	In-Situ	<0.0010	<0.0020	<0.0010	<0.0020	<0.0010	<0.0020	<0.0020	<15.0	<15.0	<15.0	<15.0	14.9
South Wall #1	9'	5/3/2012	In-Situ	<0.0010	<0.0020	<0.0010	<0.0020	<0.0010	<0.0020	<0.0020	<15.0	<15.0	<15.0	<15.0	<4.24
South Wall #2	9'	5/4/2012	In-Situ	<0.0010	<0.0020	<0.0010	<0.0020	<0.0010	<0.0020	<0.0020	<15.0	<15.0	<15.0	<15.0	7.16
West Wall	9'	5/7/2012	In-Situ	<0.0010	<0.0020	<0.0010	<0.0020	<0.0010	<0.0020	<0.0020	<15.0	<15.0	<15.0	<15.0	6.40
North Wall #2	9'	5/7/2012	In-Situ	<0.0010	<0.0020	<0.0010	0.00215	0.00116	0.00331	0.00331	<15.0	<15.0	<15.0	<15.0	7.13
N. Wall #3	9'	5/9/2012	In-Situ	<0.0010	<0.0020	<0.0010	<0.0020	<0.0010	<0.0020	<0.0020	<15.2	<15.2	<15.2	<15.2	<1.02
N. Wall #4	9'	5/9/2012	In-Situ	<0.0010	<0.0020	<0.0010	<0.0020	<0.0010	<0.0020	<0.0020	<15.3	<15.3	<15.3	<15.3	<1.02
N. Wall #5	9'	5/9/2012	In-Situ	<0.0010	<0.0020	<0.0010	<0.0020	<0.0010	<0.0020	<0.0020	<15.3	<15.3	<15.3	<15.3	<1.02
S. Wall #3	9'	5/9/2012	In-Situ	<0.0010	<0.0020	<0.0010	<0.0020	<0.0010	<0.0020	<0.0020	<15.1	<15.1	<15.1	<15.1	<1.01
S. Wall #4	9'	5/9/2012	In-Situ	<0.0010	<0.0020	<0.0010	<0.0020	<0.0010	<0.0020	<0.0020	<15.5	<15.5	<15.5	<15.5	<1.03
S. Wall #5	9'	5/9/2012	In-Situ	<0.0010	<0.0020	<0.0010	<0.0020	<0.0010	<0.0020	<0.0020	<15.9	<15.9	<15.9	<15.9	<1.06
N. Wall #6	9'	5/17/2012	In-Situ	<0.0010	0.00264	<0.0010	0.00279	0.00135	0.00414	0.00678	<15.3	<15.3	<15.3	<15.3	5.38
S. Wall #6	9'	5/17/2012	In-Situ	<0.0010	0.00465	<0.0010	0.00263	<0.0010	0.00263	0.00728	<15.3	<15.3	<15.3	<15.3	16.8
W. Wall #2	9'	5/17/2012	In-Situ	<0.0010	<0.0020	<0.0010	<0.0020	<0.0010	<0.0020	<0.0020	<15.7	<15.7	<15.7	<15.7	4.88
N. Wall #7	9'	5/17/2012	In-Situ	<0.0010	<0.0020	<0.0010	<0.0020	<0.0010	<0.0020	<0.0020	<15.3	<15.3	<15.3	<15.3	9.57
S. Wall #7	9'	5/17/2012	In-Situ	<0.0010	0.00453	0.00103	0.00381	0.00121	0.00502	0.0106	<15.3	<15.3	<15.3	<15.3	12.9
NMOC Criteria				10											
										50				100	

= Not analyzed.

- = Not analyzed.





Line #290 (East of Jal South) - Release Site (Looking East-northeast)



Line #290 (East of Jal South) - Release Site (Looking Southeast)



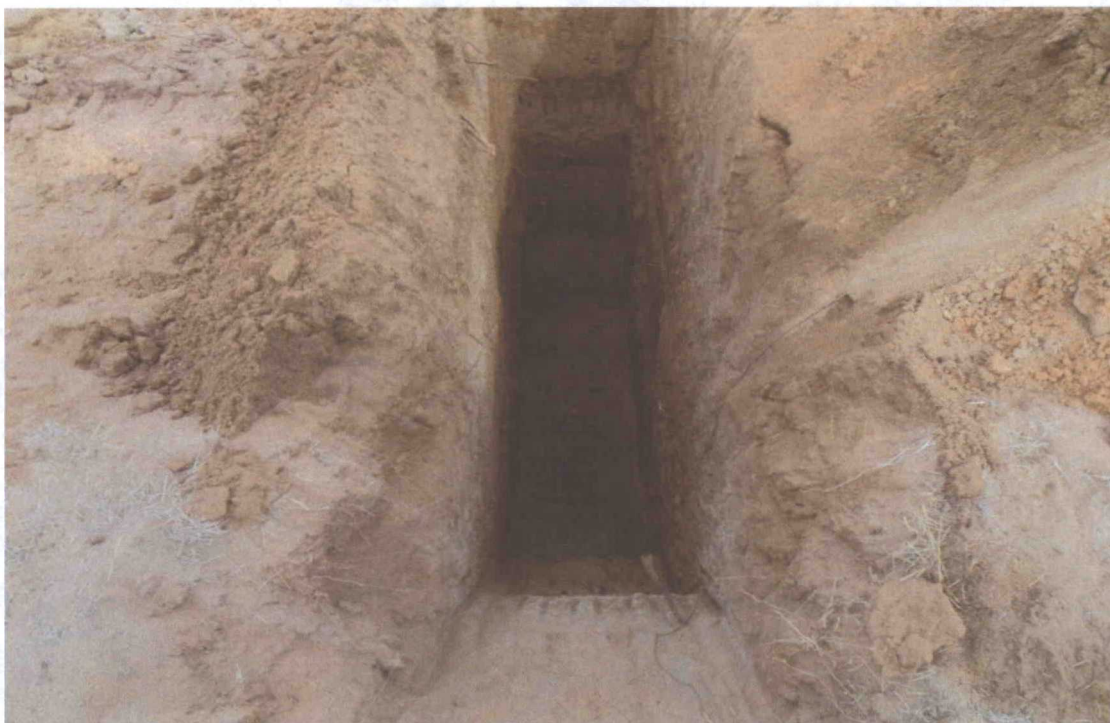


Line #290 (East of Jal South) - Release Site (Looking East)



Line #290 (East of Jal South) - Initial Response Activities (Pipeline Clamp)





Line #290 (East of Jal South) - Delineation Trench



Line #290 (East of Jal South) - Advancement of Soil Boring SB-1





Line #290 (East of Jal South) - Soil Boring SB-1 (following P&A)



Line #290 (East of Jal South) – Remediation Activities





Line #290 (East of Jal South) – Remediation Activities



Line #290 (East of Jal South) – Remediation Activities





Line #290 (East of Jal South) – Remediation Activities (20-mil Polyurethane Liner)



Line #290 (East of Jal South) – Remediation Activities (20-mil Polyurethane Liner)





Line #290 (East of Jal South) – Remediation Activities (8" PVC Conduit)



Line #290 (East of Jal South) – Backfilling Activities (8" PVC Conduit)





Line #290 (East of Jal South) – Post-Backfilling Activities



Line #290 (East of Jal South) – Post-Backfilling Activities



# Soil Boring SB-1

Depth Below Ground Surface	Soil Column	Chloride Field Test	PID Reading	Petroleum Odor	Petroleum Stain	Soil Description
0						0' - 1' - Tan fine sand
5		(632)	(267)	Heavy	None	1' - 7' - Red fine sand
10		(168)		Heavy	None	7' - 9' - Tan fine sand
15		(<120)	(1,518)	Slight	None	9' - 25' - Red fine sand
20		(<120)		Moderate	None	
25			(1,415)	Slight	None	
30			1,921	Slight	None	25 - 33' - Tan fine sand, calcified sandstone
35		(835)		Slight	None	33' - 35' - Gypsum
40			456	Slight	None	35' - 44' - Tan fine sand, sandstone
45				Slight	None	
50			373	Slight	None	
55			(2,352)	Moderate	None	
60				Moderate	None	
65			(1,605)	Moderate	None	44' - 81' - Red very fine to fine sand
70				Moderate	None	
75			(864)	Moderate	None	
80				Slight	None	
85			(1,109)	Moderate	None	81' - 85' - Red silty clay

## Boring SB-1

Date Drilled November 15, 2011  
 Thickness of Bentonite Seal 85 Ft  
 Depth of Exploratory Boring 85 Ft bgs  
 Depth to Groundwater \_\_\_\_\_  
 Ground Water Elevation \_\_\_\_\_

▼ Indicates the PSH level measured on \_\_\_\_\_  
 ▼ Indicates the groundwater level measured on \_\_\_\_\_  
 ○ Indicates samples selected for Laboratory Analysis.  
 PID Head-space reading in ppm obtained with a photo-ionization detector.

## Completion Notes

- 1.) The soil boring was advanced on date using air rotary drilling techniques.
- 2.) The lines between material types shown on the profile log represent approximate boundaries. Actual transitions may be gradual.

Soil Boring SB-1

Southern Union Gas Services  
 Line #290 (East of Jal South)  
 Lea County, New Mexico

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

Prep By: JWJ	Checked By: BJA
June 19, 2012	



**Analytical Report 431344**  
**for**  
**Southern Union Gas Services- Monahans**

**Project Manager: Rose Slade**

**Line # 290 (East of Jal South)**

**21-NOV-11**

Collected By: Client



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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)

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Xenco-Miami (EPA Lab code: FL01152): Florida (E86678), Maryland (330)

Xenco-Tampa Mobile (EPA Lab code: FL01212): Florida (E84900)

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

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





21-NOV-11

Project Manager: **Rose Slade**  
**Southern Union Gas Services- Monahans**  
1507 W. 15th Street  
Monahans, TX 79756

Reference: XENCO Report No: **431344**  
**Line # 290 (East of Jal South)**  
Project Address: Lea County, New Mexico

**Rose Slade:**

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 431344. 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. Estimation of data uncertainty for this report is found in the quality control section of this report unless otherwise noted. 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. 431344 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,

**Brent Barron II**

Odessa Laboratory Manager

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## Sample Cross Reference 431344



Southern Union Gas Services- Monahans, Monahans, TX

Line # 290 (East of Jal South)

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
Sample # 1	S	11-10-11 12:00		431344-001
Sample # 2	S	11-10-11 13:00		431344-002
Sample # 3	S	11-10-11 14:00		431344-003
Sample # 4	S	11-10-11 15:00		431344-004





## CASE NARRATIVE

**Client Name:** Southern Union Gas Services- Monahans

**Project Name:** Line # 290 (East of Jal South)



*Project ID:*  
*Work Order Number:* 431344

*Report Date:* 21-NOV-11  
*Date Received:* 11/11/2011

---

**Sample receipt non conformances and comments:**

None

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**Sample receipt non conformances and comments per sample:**

None

**Analytical non nonformances and comments:**

Batch: LBA-874726 TPH By SW8015 Mod  
SW8015MOD\_NM

Batch 874726, 1-Chlorooctane recovered above QC limits Data not confirmed by re-analysis.

Samples affected are: 614073-1-BKS, 614073-1-BLK.

o-Terphenyl recovered above QC limits Data not confirmed by re-analysis. Samples affected are: 614073-1-BLK.

o-Terphenyl recovered above QC limits Data confirmed by re-analysis. Samples affected are: 431344-003.



# Certificate of Analysis Summary 431344 Southern Union Gas Services- Monahans, Monahans, TX



Project Name: Line # 290 (East of Jal South)

Project Id:

Contact: Rose Slade

Project Location: Lea County, New Mexico

Date Received in Lab: Fri Nov-11-11 10:45 am

Report Date: 21-NOV-11

Project Manager: Brent Barron II

Analysis Requested		Lab Id:	431344-001	431344-002	431344-003 <th>431344-004</th>	431344-004
		Field Id:	Sample # 1	Sample # 2	Sample # 3	Sample # 4
		Depth:				
		Matrix:	SOIL	SOIL	SOIL	SOIL
		Sampled:	Nov-10-11 12:00	Nov-10-11 13:00	Nov-10-11 14:00	Nov-10-11 15:00
Anions by E300		Extracted:				
		Analyzed:	Nov-14-11 12:20	Nov-14-11 12:20	Nov-14-11 12:20	Nov-14-11 12:20
		Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride			676	1150	5.62	ND
			8.79	8.88	4.52	4.42
Percent Moisture		Extracted:				
		Analyzed:	Nov-11-11 14:35	Nov-11-11 14:35	Nov-11-11 15:15	Nov-11-11 15:15
		Units/RL:	% RL	% RL	% RL	% RL
Percent Moisture			4.42	5.44	7.09	4.97
			1.00	1.00	1.00	1.00
TPH By SW8015 Mod		Extracted:	Nov-12-11 15:00	Nov-12-11 15:00	Nov-12-11 15:00	Nov-12-11 15:00
		Analyzed:	Nov-14-11 16:48	Nov-14-11 17:18	Nov-14-11 17:53	Nov-14-11 18:24
		Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
C6-C12 Gasoline Range Hydrocarbons			13800	10700	30500	14800
			156	159	161	158
C12-C28 Diesel Range Hydrocarbons			4550	3770	8840	5110
			156	159	161	158
C28-C35 Oil Range Hydrocarbons			418	280	519	466
			156	159	161	158
Total TPH			18800	14800	39900	20400
			156	159	161	158

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

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Brent Barron II  
 Odessa Laboratory 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

+ Outside XENCO's scope of NELAC Accreditation.

^ NELAC or State program does not offer Accreditation at this time.

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(770) 449-8800	(770) 449-5477
(602) 437-0330	



## Form 2 - Surrogate Recoveries

Project Name: Line # 290 (East of Jal South)

Work Orders : 431344,

Project ID:

Lab Batch #: 874726

Sample: 431344-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 11/14/11 16:48

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	107	99.5	108	70-135	
o-Terphenyl	65.9	49.8	132	70-135	

Lab Batch #: 874726

Sample: 431344-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 11/14/11 17:18

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	105	100	105	70-135	
o-Terphenyl	64.1	50.0	128	70-135	

Lab Batch #: 874726

Sample: 431344-003 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 11/14/11 17:53

### 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	73.8	50.0	148	70-135	**

Lab Batch #: 874726

Sample: 431344-004 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 11/14/11 18:24

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	94.0	100	94	70-135	
o-Terphenyl	65.4	50.0	131	70-135	

Lab Batch #: 874726

Sample: 614073-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 11/13/11 12:42

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	136	100	136	70-135	*
o-Terphenyl	68.9	50.0	138	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: Line # 290 (East of Jal South)

Work Orders : 431344,

Lab Batch #: 874726

Sample: 614073-1-BKS / BKS

Project ID:

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 11/13/11 11:36

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	140	99.7	140	70-135	*
o-Terphenyl	65.8	49.9	132	70-135	

Lab Batch #: 874726

Sample: 614073-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 11/13/11 12:07

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	134	99.6	135	70-135	
o-Terphenyl	63.6	49.8	128	70-135	

Lab Batch #: 874726

Sample: 431054-025 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 11/13/11 22:29

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	124	99.9	124	70-135	
o-Terphenyl	58.0	50.0	116	70-135	

Lab Batch #: 874726

Sample: 431054-025 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 11/13/11 23:01

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	129	101	128	70-135	
o-Terphenyl	60.2	50.3	120	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.



**Project Name: Line # 290 (East of Jal South)**
**Work Order #: 431344**
**Analyst: BRB**
**Lab Batch ID: 874861**
**Sample: 874861-1-BKS**
**Units: mg/kg**
**Date Prepared: 11/14/2011**
**Batch #: 1**
**Project ID:**  
**Date Analyzed: 11/14/2011**
**Matrix: Solid**

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY											
Units: mg/kg											
Analytes	Anions by E300										
	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	<0.840	20.0	25.0	125	20.0	24.7	124	1	75-125	20	

**Analyst: KTB**
**Lab Batch ID: 874726**
**Sample: 614073-1-BKS**
**Units: mg/kg**
**Date Prepared: 11/12/2011**
**Batch #: 1**
**Date Analyzed: 11/13/2011**
**Matrix: Solid**

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY											
Units: mg/kg	TPH By SW8015 Mod										
	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
	Analytes										
	C6-C12 Gasoline Range Hydrocarbons	<15.0	997	942	94	996	833	84	12	70-135	35
	C12-C28 Diesel Range Hydrocarbons	<15.0	997	1040	104	996	922	93	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: Line # 290 (East of Jal South)

Work Order #: 431344

Lab Batch #: 874861

Date Analyzed: 11/14/2011

QC- Sample ID: 431074-001 S

Reporting Units: mg/kg

Project ID:

Analyst: BRB

Date Prepared: 11/14/2011

Batch #: 1

Matrix: Solid

MATRIX / MATRIX SPIKE RECOVERY STUDY						
Inorganic Anions by EPA 300	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Analytes						
Chloride	4480	2220	7140	120	75-125	

Lab Batch #: 874861

Date Analyzed: 11/14/2011

QC- Sample ID: 431209-001 S

Reporting Units: mg/kg

Date Prepared: 11/14/2011

Batch #: 1

Analyst: BRB

Matrix: Soil

MATRIX / MATRIX SPIKE RECOVERY STUDY						
Inorganic Anions by EPA 300	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Analytes						
Chloride	12.2	102	121	107	75-125	

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

BRL - Below Reporting Limit




**Project Name: Line # 290 (East of Jal South)**
**Work Order # :** 431344

**Lab Batch ID:** 874726

**Date Analyzed:** 11/13/2011

**Reporting Units:** mg/kg

**Project ID:**
**QC- Sample ID:** 431054-025 S

**Batch #:** 1

**Matrix:** Soil

**Date Prepared:** 11/12/2011

**Analyst:** KTB

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	<15.0	999	764	76	1010	796	79	4	70-135	35	
C12-C28 Diesel Range Hydrocarbons	<15.0	999	803	80	1010	853	84	6	70-135	35	

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

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

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



Project Name: Line # 290 (East of Jal South)

Work Order #: 431344

Lab Batch #: 874861  
 Date Analyzed: 11/14/2011 12:20  
 QC- Sample ID: 431074-001 D  
 Reporting Units: mg/kg

Project ID:  
 Analyst: BRB  
 Date Prepared: 11/14/2011  
 Batch #: 1  
 Matrix: Solid

SAMPLE / SAMPLE DUPLICATE RECOVERY					
Anions by E300	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Chloride	4480	4510	1	20	

Lab Batch #: 874628  
 Date Analyzed: 11/11/2011 14:35  
 QC- Sample ID: 431073-001 D  
 Reporting Units: %

Project ID:  
 Analyst: BRB  
 Date Prepared: 11/11/2011  
 Batch #: 1  
 Matrix: Solid

SAMPLE / SAMPLE DUPLICATE RECOVERY					
Percent Moisture	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Percent Moisture	9.79	9.81	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



# 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: Rose Slade PAGE 01 OF 01

Company Name: Southern Union Gas Services

Company Address: 801 S. Loop 464

City/State/Zip: Monahans, Texas 79756

Telephone No: 432-940-5147

Fax No:

Sampler Signature: [Signature]

e-mail: rose.slade@sug.com

Report Format: ☒ Standard

☐ TRRP

☐ NPDES

Project #:

Project Name: MA #4 (11/9/11)

Project Loc: Lea County, New Mexico

PO #:

(lab use only)

ORDER #: 431344

LAB # (lab use only)	FIELD CODE	Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Field Filtered	Total #. of Containers	Ice	HNO <sub>3</sub>	HCl (VOA X 2)	H <sub>2</sub> SO <sub>4</sub>	NaOH	Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub>	None (PAH)	Other (Specify)	DW=Drinking Water SL=Sludge GW = Groundwater S=Soil/Solid NP=Non-Potable Specify Other	TPH: 418.1 8015M 8015B	TPH: TX 1005 TX 1006	Cations (Ca, Mg, Na, K)	Anions (Cl, SO <sub>4</sub> , 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.	Asbestos	EPA Paint Filter Test	Chlorides E 300	RUSH TAT (reschedule) 24, 48, 72 hrs	Standard TAT
01	Sample #1			11/10/2011	1200		1	X								Soil	X															X
02	Sample #2			11/10/2011	1300		1	X								Soil	X															X
03	Sample #3			11/10/2011	1400		1	X								Soil	X															X
04	Sample #4			11/10/2011	1500		1	X								Soil	X															X

Special Instructions:

Relinquished by: [Signature] Date: 11/11/11 Time: 1045 Received by: \_\_\_\_\_

Relinquished by: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_ Received by: \_\_\_\_\_

Relinquished by: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_ Received by: \_\_\_\_\_

Laboratory Comments:  
Sample Containers Intact?  
VOCs Free of Headspace?  
Labels on container(s)  
Custody seals on container(s)  
Custody seals on cooler(s)  
Sample Hand Delivered  
by Sampler/Client Rep.?  
by Courier?  
Temperature Upon Receipt: 1.0 °C





XENCO Laboratories  
Atlanta, Boca Raton, Corpus Christi, Dallas  
Houston, Miami, Odessa, Philadelphia  
Phoenix, San Antonio, Tampa

Document Title: Sample Receipt Checklist  
Document No.: SYS-SRC  
Revision/Date: No. 01, 5/27/2010  
Effective Date: 6/1/2010 Page 1 of 1

### Prelogin / Nonconformance Report - Sample Log-In

Client: S.U.G.S.  
Date/Time: 11-11-11 10:45  
Lab ID #: 431344  
Initials: AE

### Sample Receipt Checklist

1. Samples on ice?	Blue	<u>Water</u>	No	
2. Shipping container in good condition?	<u>Yes</u>	No	None	
3. Custody seals intact on shipping container (cooler) and <u>bottles?</u>	<u>Yes</u>	No	N/A	
4. Chain of Custody present?	<u>Yes</u>	No		
5. Sample instructions complete on chain of custody?	<u>Yes</u>	No		
6. Any missing / extra samples?	Yes	<u>No</u>		
7. Chain of custody signed when relinquished / received?	<u>Yes</u>	No		
8. Chain of custody agrees with sample label(s)?	<u>Yes</u>	No		
9. Container labels legible and intact?	<u>Yes</u>	No		
10. Sample matrix / properties agree with chain of custody?	<u>Yes</u>	No		
11. Samples in proper container / bottle?	<u>Yes</u>	No		
12. Samples properly preserved?	<u>Yes</u>	No	N/A	
13. Sample container intact?	<u>Yes</u>	No		
14. Sufficient sample amount for indicated test(s)?	<u>Yes</u>	No		
15. All samples received within sufficient hold time?	<u>Yes</u>	No		
16. Subcontract of sample(s)?	Yes	No	<u>N/A</u>	
17. VOC sample have zero head space?	<u>Yes</u>	No	N/A	
18. Cooler 1 No.	Cooler 2 No.	Cooler 3 No.	Cooler 4 No.	Cooler 5 No.
lbs <u>1.0</u> °C	lbs °C	lbs °C	lbs °C	lbs °C

### Nonconformance Documentation

Contact: \_\_\_\_\_ Contacted by: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Regarding: \_\_\_\_\_  
\_\_\_\_\_

Corrective Action Taken: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Check all that apply: ☐ Cooling process has begun shortly after sampling event and out of temperature condition acceptable by NELAC 5.5.8.3.1.a.1.  
☐ Initial and Backup Temperature confirm out of temperature conditions  
☐ Client understands and would like to proceed with analysis



**Analytical Report 431845**  
**for**  
**Southern Union Gas Services- Monahans**

**Project Manager: Rose Slade**

**Line #290 (East of Jal South)**

**05-DEC-11**

Collected By: Client



**Celebrating 20 Years of commitment to excellence in Environmental Testing Services**



**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)

Xenco-Atlanta (EPA Lab Code: GA00046):

Florida (E87429), North Carolina (483), South Carolina (98015), Utah (AALI1), West Virginia (362), Kentucky (85)  
Louisiana (04176), USDA (P330-07-00105)

Xenco-Miami (EPA Lab code: FL01152): Florida (E86678), Maryland (330)

Xenco-Tampa Mobile (EPA Lab code: FL01212): Florida (E84900)

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)





05-DEC-11

Project Manager: **Rose Slade**  
**Southern Union Gas Services- Monahans**  
1507 W. 15th Street  
Monahans, TX 79756

Reference: XENCO Report No: **431845**  
**Line #290 (East of Jal South)**  
Project Address: Lea County, NM

**Rose Slade:**

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 431845. 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. Estimation of data uncertainty for this report is found in the quality control section of this report unless otherwise noted. 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. 431845 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,

**Brent Barron II**

Odessa Laboratory 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 - San Antonio - Austin - Tampa - Miami - Atlanta - Corpus Christi - Latin America





## Sample Cross Reference 431845



Southern Union Gas Services- Monahans, Monahans, TX

Line #290 (East of Jal South)

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SB-1@5'	S	11-15-11 10:00		431845-001
SB-1@15'	S	11-15-11 10:10		431845-002
SB-1@25'	S	11-15-11 10:20		431845-003
SB-1@35'	S	11-15-11 10:30		431845-004
SB-1@45'	S	11-15-11 10:40		431845-005
SB-1@55'	S	11-15-11 10:50		431845-006
SB01@65'	S	11-15-11 11:00		431845-007
SB-1@75'	S	11-15-11 11:10		431845-008
SB-1@80'	S	11-15-11 11:15		431845-009
SB-1@85'	S	11-15-11 11:20		431845-010





## CASE NARRATIVE

**Client Name:** Southern Union Gas Services- Monahans

**Project Name:** Line #290 (East of Jal South)



**Project ID:**  
**Work Order Number:** 431845

**Report Date:** 05-DEC-11  
**Date Received:** 11/18/2011

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**Sample receipt non conformances and comments:**

None

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**Sample receipt non conformances and comments per sample:**

None

**Analytical non nonformances and comments:**

**Batch:** LBA-875759 BTEX by EPA 8021B  
SW8021BM

Batch 875759, Ethylbenzene, Toluene recovered below QC limits in the Matrix Spike. m\_p-Xylenes recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate.

Samples affected are: 431845-003, -002.

The Laboratory Control Sample for Toluene, Ethylbenzene, m\_p-Xylenes is within laboratory Control Limits

SW8021BM

Batch 875759, 1,4-Difluorobenzene recovered below QC limits. Matrix interferences is suspected; data confirmed by re-analysis

Samples affected are: 431845-003, 431845-002.

**Batch:** LBA-875882 BTEX by EPA 8021B  
SW8021BM

Batch 875882, Benzene, Ethylbenzene, Toluene recovered below QC limits in the Matrix Spike Duplicate.

Samples affected are: 431845-010, -001, -005, -006, -004, -009, -008, -007.

The Laboratory Control Sample for Toluene, Benzene, Ethylbenzene is within laboratory Control Limits

SW8021BM

Batch 875882, 1,4-Difluorobenzene recovered below QC limits. Matrix interferences is suspected; data confirmed by re-analysis

Samples affected are: 431845-004, 431845-005, 431845-007, 431845-006, 431845-009, 431845-010, 431845-001, 431845-008.

4-Bromofluorobenzene recovered below QC limits. Matrix interferences is suspected; data confirmed by re-analysis

Samples affected are: 431845-004, 431845-005, 431845-008, 431845-010.





# Certificate of Analysis Summary 431845

## Southern Union Gas Services- Monahans, Monahans, TX



Project Id:

Contact: Rose Slade

Project Location: Lea County, NM

Project Name: Line #290 (East of Jal South)

Date Received in Lab: Fri Nov-18-11 11:25 am

Report Date: 05-DEC-11

Project Manager: Brent Barron II

Analysis Requested		Lab Id:	431845-001	431845-002	431845-003	431845-004	431845-005	431845-006
		Field Id:	SB-1@5'	SB-1@15'	SB-1@25'	SB-1@35'	SB-1@45'	SB-1@55'
		Depth:						
		Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
		Sampled:	Nov-15-11 10:00	Nov-15-11 10:10	Nov-15-11 10:20	Nov-15-11 10:30	Nov-15-11 10:40	Nov-15-11 10:50
Anions by E300		Extracted:						
		Analyzed:	Nov-23-11 00:34	Nov-23-11 00:34	Nov-23-11 00:34		Nov-23-11 00:34	
		Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL		mg/kg RL	
Chloride			490	8.80	ND		9.70	4.29
BTEX by EPA 8021B		Extracted:	Nov-29-11 09:51	Nov-22-11 16:00	Nov-22-11 16:00	Nov-29-11 09:51	Nov-29-11 09:51	Nov-29-11 09:51
		Analyzed:	Nov-29-11 16:14	Nov-25-11 19:27	Nov-25-11 20:12	Nov-29-11 13:51	Nov-29-11 14:20	Nov-29-11 17:23
		Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene			0.273	0.105	0.719	0.00526	0.00720	0.00510
Toluene			3.56	0.209	4.38	0.0105	ND	0.0102
Ethylbenzene			7.00	0.105	9.03	0.00526	0.00643	0.00510
m,p-Xylenes			21.5	0.209	28.5	0.0105	0.0213	0.0102
o-Xylene			9.33	0.105	11.1	0.00526	0.00904	0.00510
Total Xylenes			30.8	0.105	39.6	0.00526	0.0303	0.00510
Total BTEX			41.7	0.105	53.7	0.00526	0.0440	0.00510
Percent Moisture		Extracted:						
		Analyzed:	Nov-22-11 11:00	Nov-22-11 11:00	Nov-22-11 11:00	Nov-22-11 11:00	Nov-22-11 11:00	Nov-22-11 11:00
		Units/RL:	% RL	% RL	% RL	% RL	% RL	% RL
Percent Moisture			4.55	1.00	3.80	1.00	2.05	1.00
TPH By SW8015 Mod		Extracted:	Nov-23-11 13:00	Nov-23-11 13:00	Nov-23-11 13:00	Nov-23-11 13:30	Nov-23-11 15:30	Nov-23-11 15:30
		Analyzed:	Nov-24-11 23:28	Nov-25-11 00:04	Nov-25-11 00:41	Nov-26-11 00:46	Nov-26-11 01:20	Nov-26-11 01:54
		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			1440	15.7	1550	15.8	ND	360
C12-C28 Diesel Range Hydrocarbons			2010	15.7	1460	15.3	119	885
C28-C35 Oil Range Hydrocarbons			75.6	15.7	65.5	15.3	ND	52.1
Total TPH			3530	15.7	3080	15.3	119	1300

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

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

Brent Barron II  
Odessa Laboratory Manager





**Project Id:**

**Contact:** Rose Slade

**Project Location:** Lea County, NM

**Project Name:** Line #290 (East of Jal South)

**Date Received in Lab:** Fri Nov-18-11 11:25 am

**Report Date:** 05-DEC-11

**Project Manager:** Brent Barron II

<i>Analysis Requested</i>		<i>Lab Id: Field Id: Depth: Matrix:</i>	431845-007 SB01@65'	SOIL	431845-008 SB-1@75'	SOIL	431845-009 SB-1@80'	SOIL	431845-010 SB-1@85'	SOIL	
<b>Anions by E300</b>		<b>Sampled:</b>	Nov-15-11 11:00	Nov-15-11 11:00	Nov-15-11 11:10	Nov-15-11 11:15	Nov-15-11 11:15	Nov-15-11 11:20			
Chloride	<b>Extracted:</b>										
	<b>Analyzed:</b>		Nov-23-11 00:34	Nov-23-11 00:34	Nov-23-11 00:34	Nov-23-11 00:34	Nov-23-11 00:34	Nov-23-11 00:34			
	<b>Units/RL:</b>		mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	
			55.3	4.43	19.2	4.42	15.6	4.43	12.8	4.46	
<b>BTEX by EPA 8021B</b>		<b>Sampled:</b>	Nov-29-11 09:51	Nov-29-11 09:51	Nov-29-11 09:51	Nov-29-11 09:51	Nov-29-11 09:51	Nov-29-11 09:51			
Benzene	<b>Extracted:</b>										
	<b>Analyzed:</b>		Nov-29-11 14:43	Nov-29-11 15:05	Nov-29-11 15:28	Nov-29-11 15:51					
	<b>Units/RL:</b>		mg/kg	RL	mg/kg	RL	mg/kg	RL			
			0.00907	0.00527	0.00954	0.00524	0.00785	0.00527	0.00955	0.00528	
			0.0235	0.0105	ND	0.0105	0.0254	0.0105	ND	0.0106	
Toluene	<b>Extracted:</b>										
	<b>Analyzed:</b>										
	<b>Units/RL:</b>										
			0.0636	0.00527	0.00755	0.00524	0.0839	0.00527	0.00591	0.00528	
			0.246	0.0105	0.0449	0.0105	0.264	0.0105	0.0269	0.0106	
m, p-Xylenes	<b>Extracted:</b>										
	<b>Analyzed:</b>										
	<b>Units/RL:</b>										
			0.0903	0.00527	0.0159	0.00524	0.108	0.00527	0.00976	0.00528	
			0.336	0.00527	0.0608	0.00524	0.372	0.00527	0.0367	0.00528	
Total Xylenes	<b>Extracted:</b>										
	<b>Analyzed:</b>										
	<b>Units/RL:</b>										
			0.432	0.00527	0.0779	0.00524	0.489	0.00527	0.0521	0.00528	
<b>Percent Moisture</b>		<b>Sampled:</b>	Nov-22-11 11:00	Nov-22-11 11:00	Nov-22-11 11:00	Nov-22-11 11:00	Nov-22-11 11:00	Nov-22-11 11:00			
Percent Moisture	<b>Extracted:</b>										
	<b>Analyzed:</b>										
	<b>Units/RL:</b>										
			Nov-22-11 11:00	Nov-22-11 11:00	Nov-22-11 11:00	Nov-22-11 11:00	Nov-22-11 11:00	Nov-22-11 11:00	Nov-22-11 11:00		
			%	RL	%	RL	%	RL	%	RL	
TPH By SW8015 Mod	<b>Extracted:</b>										
	<b>Analyzed:</b>		Nov-23-11 15:30	Nov-23-11 15:30	Nov-23-11 15:30	Nov-23-11 15:30	Nov-23-11 15:30	Nov-23-11 15:30			
	<b>Units/RL:</b>										
			Nov-26-11 02:28	Nov-26-11 02:58	Nov-26-11 03:30	Nov-26-11 04:04					
			mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	
C6-C12 Gasoline Range Hydrocarbons	<b>Extracted:</b>										
	<b>Analyzed:</b>										
	<b>Units/RL:</b>										
			109	15.7	41.5	15.8	94.7	15.8	25.7	15.9	
			412	15.7	246	15.8	444	15.8	178	15.9	
C12-C28 Diesel Range Hydrocarbons	<b>Extracted:</b>										
	<b>Analyzed:</b>										
	<b>Units/RL:</b>										
			43.4	15.7	22.0	15.8	24.9	15.8	ND	15.9	
C28-C35 Oil Range Hydrocarbons	<b>Extracted:</b>										
	<b>Analyzed:</b>										
	<b>Units/RL:</b>										
			564	15.7	310	15.8	564	15.8	204	15.9	



## 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

+ Outside XENCO's scope of NELAC Accreditation.

^ NELAC or State program does not offer Accreditation at this time.

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## Form 2 - Surrogate Recoveries

Project Name: Line #290 (East of Jal South)

Work Orders : 431845,

Project ID:

Lab Batch #: 875684

Sample: 431845-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 11/24/11 23:28

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	105	100	105	70-135	
o-Terphenyl	38.0	50.0	76	70-135	

Lab Batch #: 875684

Sample: 431845-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 11/25/11 00:04

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	107	99.9	107	70-135	
o-Terphenyl	43.0	50.0	86	70-135	

Lab Batch #: 875684

Sample: 431845-003 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 11/25/11 00:41

### 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	99.6	94	70-135	
o-Terphenyl	40.8	49.8	82	70-135	

Lab Batch #: 875759

Sample: 431845-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 11/25/11 19:27

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0220	0.0300	73	80-120	**
4-Bromofluorobenzene	0.0344	0.0300	115	80-120	

Lab Batch #: 875759

Sample: 431845-003 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 11/25/11 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	0.0165	0.0300	55	80-120	**
4-Bromofluorobenzene	0.0355	0.0300	118	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: Line #290 (East of Jal South)

Work Orders : 431845,

Project ID:

Lab Batch #: 875678

Sample: 431845-004 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 11/26/11 00:46

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	84.2	100	84	70-135	
o-Terphenyl	39.7	50.1	79	70-135	

Lab Batch #: 875678

Sample: 431845-005 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 11/26/11 01:20

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	106	99.6	106	70-135	
o-Terphenyl	48.8	49.8	98	70-135	

Lab Batch #: 875678

Sample: 431845-006 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 11/26/11 01:54

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	108	99.8	108	70-135	
o-Terphenyl	45.2	49.9	91	70-135	

Lab Batch #: 875678

Sample: 431845-007 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 11/26/11 02:28

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	114	99.5	115	70-135	
o-Terphenyl	52.8	49.8	106	70-135	

Lab Batch #: 875678

Sample: 431845-008 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 11/26/11 02:58

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	110	100	110	70-135	
o-Terphenyl	52.7	50.1	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] =  $100 \times A / B$

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



## Form 2 - Surrogate Recoveries

Project Name: Line #290 (East of Jal South)

**Work Orders :** 431845,

**Project ID:**
**Lab Batch #:** 875678

**Sample:** 431845-009 / SMP

**Batch:** 1 **Matrix:** Soil

**Units:** mg/kg

**Date Analyzed:** 11/26/11 03:30

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	108	99.7	108	70-135	
o-Terphenyl	50.3	49.9	101	70-135	

**Lab Batch #:** 875678

**Sample:** 431845-010 / SMP

**Batch:** 1 **Matrix:** Soil

**Units:** mg/kg

**Date Analyzed:** 11/26/11 04:04

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	95.7	99.9	96	70-135	
o-Terphenyl	45.0	50.0	90	70-135	

**Lab Batch #:** 875882

**Sample:** 431845-004 / SMP

**Batch:** 1 **Matrix:** Soil

**Units:** mg/kg

**Date Analyzed:** 11/29/11 13:51

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0228	0.0300	76	80-120	**
4-Bromofluorobenzene	0.0224	0.0300	75	80-120	**

**Lab Batch #:** 875882

**Sample:** 431845-005 / SMP

**Batch:** 1 **Matrix:** Soil

**Units:** mg/kg

**Date Analyzed:** 11/29/11 14:20

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0202	0.0300	67	80-120	**
4-Bromofluorobenzene	0.0144	0.0300	48	80-120	**

**Lab Batch #:** 875882

**Sample:** 431845-007 / SMP

**Batch:** 1 **Matrix:** Soil

**Units:** mg/kg

**Date Analyzed:** 11/29/11 14:43

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0193	0.0300	64	80-120	**
4-Bromofluorobenzene	0.0342	0.0300	114	80-120	

\* Surrogate outside of Laboratory QC limits

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

\*\*\* Poor recoveries due to dilution

Surrogate Recovery [D] = 100 \* A / B

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



## Form 2 - Surrogate Recoveries

Project Name: Line #290 (East of Jal South)

Work Orders : 431845,

Project ID:

Lab Batch #: 875882

Sample: 431845-008 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 11/29/11 15:05

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0194	0.0300	65	80-120	**
4-Bromofluorobenzene	0.0181	0.0300	60	80-120	**

Lab Batch #: 875882

Sample: 431845-009 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 11/29/11 15:28

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0209	0.0300	70	80-120	**
4-Bromofluorobenzene	0.0252	0.0300	84	80-120	

Lab Batch #: 875882

Sample: 431845-010 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 11/29/11 15:51

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0219	0.0300	73	80-120	**
4-Bromofluorobenzene	0.0174	0.0300	58	80-120	**

Lab Batch #: 875882

Sample: 431845-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 11/29/11 16:14

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0231	0.0300	77	80-120	**
4-Bromofluorobenzene	0.0345	0.0300	115	80-120	

Lab Batch #: 875882

Sample: 431845-006 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 11/29/11 17:23

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0228	0.0300	76	80-120	**
4-Bromofluorobenzene	0.0340	0.0300	113	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: Line #290 (East of Jal South)

Work Orders : 431845,

Project ID:

Lab Batch #: 875684

Sample: 614623-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 11/24/11 12:22

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	105	100	105	70-135	
o-Terphenyl	45.6	50.0	91	70-135	

Lab Batch #: 875759

Sample: 614664-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 11/25/11 10:43

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0278	0.0300	93	80-120	
4-Bromofluorobenzene	0.0299	0.0300	100	80-120	

Lab Batch #: 875678

Sample: 614615-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 11/26/11 00:12

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	109	100	109	70-135	
o-Terphenyl	50.8	50.0	102	70-135	

Lab Batch #: 875882

Sample: 614743-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 11/29/11 11:57

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0258	0.0300	86	80-120	
4-Bromofluorobenzene	0.0246	0.0300	82	80-120	

Lab Batch #: 875684

Sample: 614623-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 11/24/11 11:22

### 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	44.5	50.0	89	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: Line #290 (East of Jal South)

Work Orders : 431845,

Project ID:

Lab Batch #: 875759

Sample: 614664-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 11/25/11 09:12

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0305	0.0300	102	80-120	
4-Bromofluorobenzene	0.0279	0.0300	93	80-120	

Lab Batch #: 875678

Sample: 614615-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 11/25/11 23:03

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	116	100	116	70-135	
o-Terphenyl	47.8	50.0	96	70-135	

Lab Batch #: 875882

Sample: 614743-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 11/29/11 10:26

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0291	0.0300	97	80-120	
4-Bromofluorobenzene	0.0281	0.0300	94	80-120	

Lab Batch #: 875684

Sample: 614623-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 11/24/11 11:52

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	117	100	117	70-135	
o-Terphenyl	47.3	50.0	95	70-135	

Lab Batch #: 875759

Sample: 614664-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 11/25/11 09:35

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0282	0.0300	94	80-120	
4-Bromofluorobenzene	0.0287	0.0300	96	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: Line #290 (East of Jal South)

Work Orders : 431845,

Project ID:

Lab Batch #: 875678

Sample: 614615-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 11/25/11 23:37

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	114	100	114	70-135	
o-Terphenyl	47.0	50.0	94	70-135	

Lab Batch #: 875882

Sample: 614743-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 11/29/11 10:49

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0281	0.0300	94	80-120	
4-Bromofluorobenzene	0.0273	0.0300	91	80-120	

Lab Batch #: 875684

Sample: 431842-006 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 11/25/11 01:16

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	109	99.9	109	70-135	
o-Terphenyl	46.7	50.0	93	70-135	

Lab Batch #: 875759

Sample: 431840-010 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 11/25/11 15:17

### 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	0.0298	0.0300	99	80-120	

Lab Batch #: 875678

Sample: 431845-004 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 11/26/11 09:38

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	126	100	126	70-135	
o-Terphenyl	52.1	50.0	104	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: Line #290 (East of Jal South)

Work Orders : 431845,

Lab Batch #: 875882

Sample: 432217-001 S / MS

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 11/30/11 00:35

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0288	0.0300	96	80-120	
4-Bromofluorobenzene	0.0289	0.0300	96	80-120	

Lab Batch #: 875684

Sample: 431842-006 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 11/25/11 01:53

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	118	99.7	118	70-135	
o-Terphenyl	51.6	49.9	103	70-135	

Lab Batch #: 875759

Sample: 431840-010 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 11/25/11 15:39

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0285	0.0300	95	80-120	
4-Bromofluorobenzene	0.0288	0.0300	96	80-120	

Lab Batch #: 875678

Sample: 431845-004 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 11/26/11 10:12

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	123	99.9	123	70-135	
o-Terphenyl	51.0	50.0	102	70-135	

Lab Batch #: 875882

Sample: 432217-001 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 11/30/11 00:58

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0279	0.0300	93	80-120	
4-Bromofluorobenzene	0.0301	0.0300	100	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.



**Project Name: Line #290 (East of Jal South)**
**Work Order #: 431845**
**Analyst: ASA**
**Lab Batch ID: 875759**
**Sample: 614664-1-BKS**
**Units: mg/kg**
**Date Prepared: 11/22/2011**  
**Batch #: 1**
**Project ID:**  
**Date Analyzed: 11/25/2011**  
**Matrix: Solid**

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY													
Units: mg/kg	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	0.0971	97	0.100	0.105	105	8	70-130	35	
		Toluene	<0.00200	0.100	0.0976	98	0.100	0.106	106	8	70-130	35	
		Ethylbenzene	<0.00100	0.100	0.100	100	0.100	0.109	109	9	71-129	35	
		m_p-Xylenes	<0.00200	0.200	0.196	98	0.200	0.213	107	8	70-135	35	
		o-Xylene	<0.00100	0.100	0.0993	99	0.100	0.108	108	8	71-133	35	

**Analyst: ASA**  
**Lab Batch ID: 875882**  
**Sample: 614743-1-BKS**  
**Date Prepared: 11/29/2011**  
**Batch #: 1**
**Date Analyzed: 11/29/2011**  
**Matrix: Solid**

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY													
Units: mg/kg													
BTEX by EPA 8021B	BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY												
	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	0.103	103	0.100	0.0998	100	3	70-130	35	
		Toluene	<0.00200	0.100	0.106	106	0.100	0.103	103	3	70-130	35	
		Ethylbenzene	<0.00100	0.100	0.111	111	0.100	0.108	108	3	71-129	35	
		m_p-Xylenes	<0.00200	0.200	0.221	111	0.200	0.215	108	3	70-135	35	
		o-Xylene	<0.00100	0.100	0.112	112	0.100	0.107	107	5	71-133	35	

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



**Project Name: Line #290 (East of Jal South)**
**Work Order #: 431845**
**Analyst: BRB**
**Lab Batch ID: 875577**
**Sample: 875577-1-BKS**
**Units: mg/kg**
**Date Prepared: 11/23/2011**
**Batch #: 1**
**Project ID:**  
**Date Analyzed: 11/23/2011**
**Matrix: Solid**

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY											
Units: mg/kg											
Analytes	Anions by E300										
	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	<0.840	20.0	20.7	104	20.0	20.5	103	1	75-125	20	

**Analyst: ASA**
**Lab Batch ID: 875678**
**Sample: 614615-1-BKS**
**Units: mg/kg**
**Date Prepared: 11/23/2011**
**Batch #: 1**
**Date Analyzed: 11/25/2011**
**Matrix: Solid**

Units: mg/kg												
BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY												
TPH By SW8015 Mod	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	
Analytes	C6-C12 Gasoline Range Hydrocarbons	<15.0	1000	778	78	1000	770	77	1	70-135	35	
	C12-C28 Diesel Range Hydrocarbons	<15.0	1000	844	84	1000	839	84	1	70-135	35	

**Analyst: ASA**
**Lab Batch ID: 875684**
**Sample: 614623-1-BKS**
**Units: mg/kg**
**Date Prepared: 11/23/2011**
**Batch #: 1**
**Date Analyzed: 11/24/2011**
**Matrix: Solid**

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY												
TPH By SW8015 Mod		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
Analytes		C6-C12 Gasoline Range Hydrocarbons	<15.0	1000	752	75	1000	77	2	70-135	35	
		C12-C28 Diesel Range Hydrocarbons	<15.0	1000	810	81	1000	86	6	70-135	35	

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





### Form 3 - MS Recoveries



Project Name: Line #290 (East of Jal South)

Work Order #: 431845

Lab Batch #: 875577

Date Analyzed: 11/23/2011

QC- Sample ID: 431837-001 S

Reporting Units: mg/kg

Project ID:

Analyst: BRB

Date Prepared: 11/23/2011

Batch #: 1

Matrix: Soil

MATRIX / MATRIX SPIKE RECOVERY STUDY						
Inorganic Anions by EPA 300	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Analytes						
Chloride	83.1	104	193	106	75-125	

Lab Batch #: 875577

Date Analyzed: 11/23/2011

QC- Sample ID: 431845-001 S

Reporting Units: mg/kg

Date Prepared: 11/23/2011

Analyst: BRB

Batch #: 1

Matrix: Soil

MATRIX / MATRIX SPIKE RECOVERY STUDY						
Inorganic Anions by EPA 300	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Analytes						
Chloride	490	210	712	106	75-125	

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

BRL - Below Reporting Limit



# Form 3 - MS / MSD Recoveries



Project Name: Line #290 (East of Jal South)

Work Order #: 431845

Lab Batch ID: 875759

Date Analyzed: 11/25/2011

Reporting Units: mg/kg

Project ID:

QC-Sample ID: 431840-010 S

Date Prepared: 11/22/2011

Batch #: 1

Analyst: ASA

Matrix: Soil

## MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Analytes	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY									
	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
BTEX by EPA 8021B										
Benzene	<0.00104	0.104	0.0736	71	0.0801	77	8	70-130	35	
Toluene	<0.00208	0.104	0.0714	69	0.0781	75	9	70-130	35	X
Ethylbenzene	<0.00104	0.104	0.0693	67	0.0835	80	19	71-129	35	X
m_p-Xylenes	<0.00208	0.208	0.110	53	0.125	60	13	70-135	35	X
o-Xylene	<0.00104	0.104	0.0745	72	0.0813	78	9	71-133	35	

Lab Batch ID: 875882

Date Analyzed: 11/30/2011

Reporting Units: mg/kg

QC-Sample ID: 432217-001 S

Date Prepared: 11/29/2011

Batch #: 1

Analyst: ASA

Matrix: Soil

## MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Analytes	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY									
	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
BTEX by EPA 8021B										
Benzene	<0.00101	0.101	0.0725	72	0.0695	68	4	70-130	35	X
Toluene	<0.00203	0.101	0.0726	72	0.0686	67	6	70-130	35	X
Ethylbenzene	<0.00101	0.101	0.0747	74	0.0692	68	8	71-129	35	X
m_p-Xylenes	0.00511	0.203	0.162	77	0.150	71	8	70-135	35	
o-Xylene	0.00322	0.101	0.0848	81	0.0778	73	9	71-133	35	

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

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

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





Project Name: Line #290 (East of Jal South)

Work Order #: 431845

Lab Batch ID: 875678

Date Analyzed: 11/26/2011

Reporting Units: mg/kg

Project ID:

QC- Sample ID: 431845-004 S Batch #: 1 Matrix: Soil

Date Prepared: 11/23/2011 Analyst: ASA

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY												
TPH By SW8015 Mod		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
Analytes												
C6-C12 Gasoline Range Hydrocarbons		30.9	1050	875	80	1050	852	78	3	70-135	35	
C12-C28 Diesel Range Hydrocarbons		182	1050	1170	94	1050	1120	89	4	70-135	35	

Lab Batch ID: 875684

Date Analyzed: 11/25/2011

Reporting Units: mg/kg

QC- Sample ID: 431842-006 S Batch #: 1 Matrix: Soil

Date Prepared: 11/23/2011 Analyst: ASA

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		<18.7	1250	920	74	1240	979	79	6	70-135	35	
C12-C28 Diesel Range Hydrocarbons		<18.7	1250	1070	86	1240	1150	93	7	70-135	35	

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

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

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



**Project Name: Line #290 (East of Jal South)**

**Work Order #: 431845**

**Lab Batch #:** 875577  
**Date Analyzed:** 11/23/2011 00:34  
**QC- Sample ID:** 431845-001 D  
**Reporting Units:** mg/kg

**Date Prepared:** 11/23/2011  
**Batch #:** 1

**Project ID:**  
**Analyst:** BRB  
**Matrix:** Soil

SAMPLE / SAMPLE DUPLICATE RECOVERY					
Anions by E300	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Chloride	490	487	1	20	

**Lab Batch #:** 875468  
**Date Analyzed:** 11/22/2011 11:00  
**QC- Sample ID:** 431842-001 D  
**Reporting Units:** %

**Date Prepared:** 11/22/2011  
**Batch #:** 1

**Analyst:** BRB  
**Matrix:** Soil

SAMPLE / SAMPLE DUPLICATE RECOVERY					
Percent Moisture	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Percent Moisture	7.83	8.03	3	20	

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



# Xenco Laboratories

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

Project Manager: Ben J. Arguilo

Company Name: Basin Environmental Service Technologies, LLC

Company Address: P.O. Box 301

City/State/Zip: Livingston, NM 88260

Telephone No: (575) 396-2378

Sampler Signature: [Signature]

Fax No: (575) 396-1429

e-mail: bjarguilo@basinenv.com; Rose.Stade@SUG.com

Report Format: ☒ Standard ☐ TRRP ☐ NPDES

PO #:

Project Name: Line #290 (East of Jal South)

Project #:

Project Loc: Lea County, NM

(lab use only)

ORDER #: 431845

LAB # (lab use only)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
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Relinquished by: [Signature]

Date: 11/15/11

Time: 0700

Received by: Stimmon Bick

Date: 11/18/11

Time: 11:25

Received by ELOT:

Received by: [Signature]

Date: 11/18/11

Time: 7:00

Date: 11/18/11

Time: 11:25

Laboratory Comments:

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

Temperature Upon Receipt: 1.5 °C





XENCO Laboratories  
Atlanta, Boca Raton, Corpus Christi, Dallas  
Houston, Miami, Odessa, Philadelphia  
Phoenix, San Antonio, Tampa

Document Title: Sample Receipt Checklist  
Document No.: SYS-SRC  
Revision/Date: No. 01, 5/27/2010  
Effective Date: 6/1/2010 Page 1 of 1

### Prelogin / Nonconformance Report - Sample Log-In

Client: Southern Union Gas  
Date/Time: 11-18-11 11:25  
Lab ID #: 431845  
Initials: TB

### Sample Receipt Checklist

1. Samples on ice?	Blue	<u>Water</u>	No	
2. Shipping container in good condition?	<u>Yes</u>	No	None	
3. Custody seals intact on shipping container (cooler) and bottles?	<u>Yes</u>	No	N/A	
4. Chain of Custody present?	<u>Yes</u>	No		
5. Sample instructions complete on chain of custody?	<u>Yes</u>	No		
6. Any missing / extra samples?	<u>Yes</u>	<u>No</u>		
7. Chain of custody signed when relinquished / received?	<u>Yes</u>	No		
8. Chain of custody agrees with sample label(s)?	<u>Yes</u>	No		
9. Container labels legible and intact?	<u>Yes</u>	No		
10. Sample matrix / properties agree with chain of custody?	<u>Yes</u>	No		
11. Samples in proper container / bottle?	<u>Yes</u>	No		
12. Samples properly preserved?	<u>Yes</u>	No	N/A	
13. Sample container intact?	<u>Yes</u>	No		
14. Sufficient sample amount for indicated test(s)?	<u>Yes</u>	No		
15. All samples received within sufficient hold time?	<u>Yes</u>	No		
16. Subcontract of sample(s)?	Yes	<u>No</u>	N/A	
17. VOC sample have zero head space?	<u>Yes</u>	No	N/A	
18. Cooler 1 No.	Cooler 2 No.	Cooler 3 No.	Cooler 4 No.	Cooler 5 No.
lbs <u>15</u> °C	lbs °C	lbs °C	lbs °C	lbs °C

### Nonconformance Documentation

Contact: \_\_\_\_\_ Contacted by: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Regarding: \_\_\_\_\_

Corrective Action Taken: \_\_\_\_\_

Check all that apply: ☐ Cooling process has begun shortly after sampling event and out of temperature condition acceptable by NELAC 5.5.8.3.1.a.1.  
☐ Initial and Backup Temperature confirm out of temperature conditions  
☐ Client understands and would like to proceed with analysis



**Analytical Report 441928**  
**for**  
**Southern Union Gas Services- Monahans**

**Project Manager: Rose Slade**

**Line #290 (East of Jal South)**

**Southern Union Gas**

**18-MAY-12**

Collected By: Client



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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)





18-MAY-12

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

Reference: XENCO Report No: **441928**  
**Line #290 (East of Jal South)**  
Project Address: Lea County, NM

**Rose Slade:**

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 441928. 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. Estimation of data uncertainty for this report is found in the quality control section of this report unless otherwise noted. 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. 441928 will be filed for 60 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

---

**Nicholas Straccione**

Project Manager

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## Sample Cross Reference 441928



Southern Union Gas Services- Monahans, Monahans, TX

Line #290 (East of Jal South)

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
Northwest Wall	S	05-03-12 10:20	1 - 1 ft	441928-001
North Wall #1	S	05-03-12 13:10	10 - 10 ft	441928-002
East Wall #1	S	05-03-12 13:30	10 - 10 ft	441928-003
South Wall #1	S	05-03-12 14:15	10 - 10 ft	441928-004
West Wall	S	05-07-12 10:00	10 - 10 ft	441928-005
North Wall #2	S	05-07-12 11:55	10 - 10 ft	441928-006
South Wall #2	S	05-04-12 11:30	10 - 10 ft	441928-007





## CASE NARRATIVE

**Client Name:** Southern Union Gas Services- Monahans

**Project Name:** Line #290 (East of Jal South)



**Project ID:** Southern Union Gas  
**Work Order Number:** 441928

**Report Date:** 18-MAY-12  
**Date Received:** 05/08/2012

---

**Sample receipt non conformances and comments:**

None

---

**Sample receipt non conformances and comments per sample:**

None



# Certificate of Analysis Summary 441928

## Southern Union Gas Services- Monahans, Monahans, TX



**Project Id:** Southern Union Gas  
**Contact:** Rose Slade  
**Project Location:** Lea County, NM

**Project Name:** Line #290 (East of Jal South)

**Date Received in Lab:** Tue May-08-12 08:07 am  
**Report Date:** 18-MAY-12

**Project Manager:** Nicholas Straccione

Analysis Requested		Lab Id:	Field Id:	Depth:	Matrix:	Sampled:	441928-001	441928-002	441928-003	441928-004	441928-005	441928-006
							Northwest Wall 1-1 ft SOIL May-03-12 10:20	North Wall #1 10-10 ft SOIL May-03-12 13:10	East Wall #1 10-10 ft SOIL May-03-12 13:30	South Wall #1 10-10 ft SOIL May-03-12 14:15	West Wall 10-10 ft SOIL May-07-12 10:00	North Wall #2 10-10 ft SOIL May-07-12 11:55
Anions by E300		Extracted:					May-08-12 14:00 mg/kg RL 9.89 4.37	May-08-12 14:00 mg/kg RL 4.32 4.24	May-08-12 14:00 mg/kg RL 14.9 4.27	May-08-12 14:00 mg/kg RL ND 4.24	May-08-12 14:00 mg/kg RL 6.40 4.28	May-08-12 14:00 mg/kg RL 7.13 4.22
BTX by EPA 8021B		Extracted:						May-08-12 14:00 mg/kg RL ND 0.00101	May-08-12 14:00 mg/kg RL ND 0.00101	May-08-12 14:00 mg/kg RL ND 0.00101	May-08-12 14:00 mg/kg RL ND 0.00101	May-08-12 14:00 mg/kg RL ND 0.000996
Benzene		Analyzed:						May-08-12 20:53 mg/kg RL ND 0.00202	May-08-12 21:15 mg/kg RL ND 0.00203	May-08-12 21:38 mg/kg RL ND 0.00201	May-08-12 22:00 mg/kg RL ND 0.00202	May-08-12 22:22 mg/kg RL ND 0.00199
Toluene		Units/RL:						ND 0.00101	ND 0.00101	ND 0.00101	ND 0.00101	ND 0.000996
Ethylbenzene								ND 0.00202	ND 0.00203	ND 0.00201	ND 0.00202	0.00215 0.00199
m,p-Xylenes								ND 0.00101	ND 0.00101	ND 0.00101	ND 0.00101	0.00116 0.000996
o-Xylene								ND 0.00101	ND 0.00101	ND 0.00101	ND 0.00101	0.00331 0.000996
Total Xylenes								ND 0.00101	ND 0.00101	ND 0.00101	ND 0.00101	0.00331 0.000996
Total BTX								ND 0.00101	ND 0.00101	ND 0.00101	ND 0.00101	0.00331 0.000996
Percent Moisture		Extracted:						May-09-12 13:57 % RL ND 1.00	May-09-12 13:57 % RL 1.63 1.00	May-09-12 13:57 % RL ND 1.00	May-09-12 13:57 % RL 1.96 1.00	May-09-12 13:57 % RL ND 1.00
TPH By SW8015 Mod		Analyzed:						May-08-12 09:30 mg/kg RL ND 15.0	May-08-12 09:30 mg/kg RL ND 15.0	May-08-12 09:30 mg/kg RL ND 15.0	May-08-12 09:30 mg/kg RL ND 15.0	May-08-12 09:30 mg/kg RL ND 15.0
C6-C12 Gasoline Range Hydrocarbons		Units/RL:						May-08-12 12:47 mg/kg RL ND 15.0	May-08-12 14:35 mg/kg RL ND 15.0	May-08-12 15:02 mg/kg RL ND 15.0	May-08-12 15:28 mg/kg RL ND 15.0	May-08-12 15:56 mg/kg RL ND 15.0
C12-C28 Diesel Range Hydrocarbons								ND 15.0	ND 15.0	ND 15.0	ND 15.0	ND 15.0
C28-C35 Oil Range Hydrocarbons								ND 15.0	ND 15.0	ND 15.0	ND 15.0	ND 15.0
Total TPH								ND 15.0	ND 15.0	ND 15.0	ND 15.0	ND 15.0

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

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Nicholas Straccione  
Project Manager



# Certificate of Analysis Summary 441928

## Southern Union Gas Services- Monahans, Monahans, TX



**Project Id:** Southern Union Gas  
**Contact:** Rose Slade  
**Project Location:** Lea County, NM

**Project Name:** Line #290 (East of Jal South)

**Date Received in Lab:** Tue May-08-12 08:07 am  
**Report Date:** 18-MAY-12  
**Project Manager:** Nicholas Straccione

<i>Analysis Requested</i>		Lab Id: Field Id: Depth: Matrix: Sampled:	441928-007 South Wall #2 10-10 ft SOIL May-04-12 11:30			
<b>Anions by E300</b>		<b>Extracted:</b> <b>Analyzed:</b> <b>Units/RL:</b>	May-08-12 14:00 mg/kg RL 7.16 4.27			
<b>BTEX by EPA 8021B</b>		<b>Extracted:</b> <b>Analyzed:</b> <b>Units/RL:</b>	May-08-12 14:00 May-08-12 22:45 mg/kg RL			
Chloride			ND 0.00101			
Benzene			ND 0.00201			
Toluene			ND 0.00101			
Ethylbenzene			ND 0.00201			
m,p-Xylenes			ND 0.00101			
o-Xylene			ND 0.00101			
Total Xylenes			ND 0.00101			
Total BTEX			ND 0.00101			
<b>Percent Moisture</b>		<b>Extracted:</b> <b>Analyzed:</b> <b>Units/RL:</b>	May-09-12 13:57 % RL 1.70 1.00			
Percent Moisture						
<b>TPH By SW8015 Mod</b>		<b>Extracted:</b> <b>Analyzed:</b> <b>Units/RL:</b>	May-08-12 09:30 May-08-12 16:24 mg/kg RL			
C6-C12 Gasoline Range Hydrocarbons			ND 15.0			
C12-C28 Diesel Range Hydrocarbons			ND 15.0			
C28-C35 Oil Range Hydrocarbons			ND 15.0			
Total TPH			ND 15.0			

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

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

\* Surrogate recovered outside laboratory control limit.

**BRL** Below Reporting Limit.

**RL** Reporting Limit

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

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

**DL** Method Detection Limit

**NC** Non-Calculable

+ NELAC certification not offered for this compound.

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

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(770) 449-8800	(770) 449-5477
(602) 437-0330	



## Form 2 - Surrogate Recoveries

Project Name: Line #290 (East of Jal South)

Work Orders : 441928,

Project ID: Southern Union Gas

Lab Batch #: 887487

Sample: 441928-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 05/08/12 12:47

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	89.4	100	89	70-135	
o-Terphenyl	47.9	50.0	96	70-135	

Lab Batch #: 887487

Sample: 441928-003 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 05/08/12 14:35

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	88.4	99.7	89	70-135	
o-Terphenyl	47.0	49.9	94	70-135	

Lab Batch #: 887487

Sample: 441928-004 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 05/08/12 15:02

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	90.6	99.9	91	70-135	
o-Terphenyl	49.5	50.0	99	70-135	

Lab Batch #: 887487

Sample: 441928-005 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 05/08/12 15:28

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	89.6	100	90	70-135	
o-Terphenyl	47.8	50.1	95	70-135	

Lab Batch #: 887487

Sample: 441928-006 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 05/08/12 15:56

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	91.2	99.8	91	70-135	
o-Terphenyl	47.3	49.9	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: Line #290 (East of Jal South)

Work Orders : 441928,

Project ID: Southern Union Gas

Lab Batch #: 887487

Sample: 441928-007 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 05/08/12 16:24

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	90.5	99.8	91	70-135	
o-Terphenyl	48.8	49.9	98	70-135	

Lab Batch #: 887469

Sample: 441928-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 05/08/12 20:53

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0267	0.0300	89	80-120	
4-Bromofluorobenzene	0.0241	0.0300	80	80-120	

Lab Batch #: 887469

Sample: 441928-003 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 05/08/12 21:15

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0269	0.0300	90	80-120	
4-Bromofluorobenzene	0.0241	0.0300	80	80-120	

Lab Batch #: 887469

Sample: 441928-004 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 05/08/12 21:38

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0256	0.0300	85	80-120	
4-Bromofluorobenzene	0.0247	0.0300	82	80-120	

Lab Batch #: 887469

Sample: 441928-005 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 05/08/12 22:00

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0265	0.0300	88	80-120	
4-Bromofluorobenzene	0.0248	0.0300	83	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: Line #290 (East of Jal South)

Work Orders : 441928,

Project ID: Southern Union Gas

Lab Batch #: 887469

Sample: 441928-006 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 05/08/12 22:22

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0253	0.0300	84	80-120	
4-Bromofluorobenzene	0.0251	0.0300	84	80-120	

Lab Batch #: 887469

Sample: 441928-007 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 05/08/12 22:45

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0261	0.0300	87	80-120	
4-Bromofluorobenzene	0.0246	0.0300	82	80-120	

Lab Batch #: 887487

Sample: 621601-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 05/08/12 12:17

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	90.4	100	90	70-135	
o-Terphenyl	50.3	50.0	101	70-135	

Lab Batch #: 887469

Sample: 621594-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 05/08/12 20:31

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0260	0.0300	87	80-120	
4-Bromofluorobenzene	0.0243	0.0300	81	80-120	

Lab Batch #: 887487

Sample: 621601-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 05/08/12 11:24

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	107	99.8	107	70-135	
o-Terphenyl	54.4	49.9	109	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: Line #290 (East of Jal South)

Work Orders : 441928,

Project ID: Southern Union Gas

Lab Batch #: 887469

Sample: 621594-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 05/08/12 19:01

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0282	0.0300	94	80-120	
4-Bromofluorobenzene	0.0292	0.0300	97	80-120	

Lab Batch #: 887487

Sample: 621601-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 05/08/12 11:51

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	104	99.7	104	70-135	
o-Terphenyl	59.8	49.9	120	70-135	

Lab Batch #: 887469

Sample: 621594-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 05/08/12 19:24

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0289	0.0300	96	80-120	
4-Bromofluorobenzene	0.0281	0.0300	94	80-120	

Lab Batch #: 887487

Sample: 441928-007 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 05/08/12 21:22

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	108	99.5	109	70-135	
o-Terphenyl	53.6	49.8	108	70-135	

Lab Batch #: 887469

Sample: 441928-007 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 05/09/12 00:59

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0288	0.0300	96	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.





## Form 2 - Surrogate Recoveries

Project Name: Line #290 (East of Jal South)

Work Orders : 441928,

Lab Batch #: 887487

Sample: 441928-007 SD / MSD

Project ID: Southern Union Gas

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 05/08/12 21:49

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	110	99.9	110	70-135	
o-Terphenyl	54.6	50.0	109	70-135	

Lab Batch #: 887469

Sample: 441928-007 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 05/09/12 01:21

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0286	0.0300	95	80-120	
4-Bromofluorobenzene	0.0288	0.0300	96	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.



**Project Name: Line #290 (East of Jal South)**
**Work Order #: 441928**
**Analyst: SMG**
**Lab Batch ID: 887469**
**Sample: 621594-1-BKS**
**Date Prepared: 05/08/2012**
**Batch #: 1**
**Project ID: Southern Union Gas**
**Date Analyzed: 05/08/2012**
**Matrix: Solid**
**Units: mg/kg**

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY												
Units: mg/kg												
Analytes	BTEX by EPA 8021B											
	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	0.102	102	0.100	0.107	107	5	70-130	35	
	Toluene	<0.00200	0.100	0.102	102	0.100	0.107	107	5	70-130	35	
	Ethylbenzene	<0.00100	0.100	0.100	100	0.100	0.103	103	3	71-129	35	
	m_p-Xylenes	<0.00200	0.200	0.205	103	0.200	0.210	105	2	70-135	35	
	o-Xylene	<0.00100	0.100	0.103	103	0.100	0.106	106	3	71-133	35	

**Analyst: SMG**
**Lab Batch ID: 887457**
**Sample: 887457-1-BKS**
**Date Prepared: 05/08/2012**
**Batch #: 1**
**Date Analyzed: 05/08/2012**
**Matrix: Solid**
**Units: mg/kg**

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY											
Units: mg/kg											
Analytes	Anions by E300										
	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	<0.840	20.0	20.2	101	20.0	19.3	97	5	75-125	20	

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



**Project Name: Line #290 (East of Jal South)**

**Work Order #: 441928**

**Analyst: ASA**

**Lab Batch ID: 887487**

**Sample: 621601-1-BKS**

**Date Prepared: 05/08/2012**

**Batch #: 1**

**Project ID: Southern Union Gas**

**Date Analyzed: 05/08/2012**

**Matrix: Solid**

**Units: mg/kg**

Units: mg/kg												
BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY												
Analytes	TPH By SW8015 Mod											
	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	714	72	997	714	72	0	70-135	35	
	C12-C28 Diesel Range Hydrocarbons	<15.0	998	939	94	997	919	92	2	70-135	35	

**Analytes**

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: Line #290 (East of Jal South)

Work Order #: 441928

Lab Batch #: 887457

Date Analyzed: 05/08/2012

QC- Sample ID: 441928-001 S

Reporting Units: mg/kg

Date Prepared: 05/08/2012

Batch #: 1

Project ID: Southern Union Gas

Analyst: SMG

Matrix: Soil

#### MATRIX / MATRIX SPIKE RECOVERY STUDY

Inorganic Anions by EPA 300	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Analytes						
Chloride	9.89	104	109	95	75-125	

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

Relative Percent Difference [E] =  $200 \times (C-A)/(C+B)$

All Results are based on MDL and Validated for QC Purposes

BRL - Below Reporting Limit




**Project Name: Line #290 (East of Jal South)**
**Work Order # :** 441928

**Lab Batch ID:** 887469

**Date Analyzed:** 05/09/2012

**Reporting Units:** mg/kg

**Project ID:** Southern Union Gas

**QC- Sample ID:** 441928-007 S

**Batch #:** 1

**Matrix:** Soil

**Date Prepared:** 05/08/2012

**Analyst:** SMG

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	<0.00101	0.101	0.0945	94	0.101	0.0998	99	5	70-130	35	
	Toluene	<0.00201	0.101	0.0942	93	0.101	0.100	99	6	70-130	35	
	Ethylbenzene	<0.00101	0.101	0.0917	91	0.101	0.0974	96	6	71-129	35	
	m_p-Xylenes	<0.00201	0.201	0.176	88	0.202	0.198	98	12	70-135	35	
	o-Xylene	<0.00101	0.101	0.0933	92	0.101	0.101	100	8	71-133	35	

**Lab Batch ID:** 887487

**Date Analyzed:** 05/08/2012

**Reporting Units:** mg/kg

**QC- Sample ID:** 441928-007 S

**Batch #:** 1

**Matrix:** Soil

**Date Prepared:** 05/08/2012

**Analyst:** ASA

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY												
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
	C6-C12 Gasoline Range Hydrocarbons	<15.2	1010	754	75	1020	778	76	3	70-135	35	
	C12-C28 Diesel Range Hydrocarbons	<15.2	1010	1000	99	1020	1010	99	1	70-135	35	

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

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

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



**Project Name:** Line #290 (East of Jal South)

**Work Order #:** 441928

**Lab Batch #:** 887457

**Date Analyzed:** 05/08/2012 14:00

**Date Prepared:** 05/08/2012

**Project ID:** Southern Union Gas

**Analyst:** SMG

**QC- Sample ID:** 441928-001 D

**Batch #:** 1

**Matrix:** Soil

**Reporting Units:** mg/kg

SAMPLE / SAMPLE DUPLICATE RECOVERY					
Anions by E300	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Chloride	9.89	7.92	22	20	F

**Lab Batch #:** 887498

**Date Analyzed:** 05/09/2012 13:57

**Date Prepared:** 05/09/2012

**Analyst:** ASA

**QC- Sample ID:** 441928-001 D

**Batch #:** 1

**Matrix:** Soil

**Reporting Units:** %

SAMPLE / SAMPLE DUPLICATE RECOVERY					
Percent Moisture	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Percent Moisture	3.85	3.89	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



**CHAIN OF CUSTODY/RECORD AND ANALYSIS REQUEST**

**12600 West I-20 East**  
**Odessa, Texas 79765**

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

**Project Name: Line #290 (East of Jal South)**

Project #: Southern Marion Gas

**Project Loc:** Lea County, NM

PO#

Fax No: (575) 396-1429

**Report Format:** ☒ Standard ☐ TRRP ☐ NPDES

**e-mail:** [bjarguilo@basinenv.com](mailto:bjarguilo@basinenv.com); [Rose.Slade@SUG.com](mailto:Rose.Slade@SUG.com)

Curt.Standley@Sug.com

ORDER #: 441928

Special Instructions:					
Relinquished by:	Date	Time	Received by:	Date	Time
<i>[Signature]</i>	5/7/12	18:10	<i>[Signature]</i>	5/7/12	12:00
Relinquished by:	Date	Time	Received by:	Date	Time
<i>[Signature]</i>	5/8/12	08:07	<i>[Signature]</i>	5/8/12	8:07
Relinquished by:	Date	Time	Received by ELOI:	Date	Time
<i>[Signature]</i>			<i>[Signature]</i>		

Laboratory Comments:	
Sample Containers Intact?	N
VOCs Free of Headspace?	N
Labels on container(s)	N
Custody seals on container(s)	N
Custody seals on cooler(s)	N
Sample Hand Delivered by Sampler/Client Rep. ?	N
by Courier? UPS DHL FedEx Lone Star	N
Temperature Upod Receipt:	N
4.02 ± .09 asread/corrected	N
6.5 / 5.0 °C	N





XENCO Laboratories  
Atlanta, Boca Raton, Corpus Christi, Dallas  
Houston, Miami, Odessa, Philadelphia  
Phoenix, San Antonio, Tampa

Document Title: Sample Receipt Checklist  
Document No.: SYS-SRC  
Revision/Date: No. 01, 5/27/2010  
Effective Date: 6/1/2010 Page 1 of 1

### Prelogin / Nonconformance Report - Sample Log-In

Client: Southern Union Gas  
Date/Time: 5/8/12 8:07  
Lab ID #: 441928  
Initials: AH

#### Sample Receipt Checklist

1. Samples on ice?	Blue	<u>Water</u>	No	
2. Shipping container in good condition?	<u>Yes</u>	No	None	
3. Custody seals intact on shipping container (cooler) and bottles?	<u>Yes</u>	No	N/A	
4. Chain of Custody present?	<u>Yes</u>	No		
5. Sample instructions complete on chain of custody?	<u>Yes</u>	No		
6. Any missing / extra samples?	<u>Yes</u>	<u>No</u>		
7. Chain of custody signed when relinquished / received?	<u>Yes</u>	No		
8. Chain of custody agrees with sample label(s)?	<u>Yes</u>	No		
9. Container labels legible and intact?	<u>Yes</u>	No		
10. Sample matrix / properties agree with chain of custody?	<u>Yes</u>	No		
11. Samples in proper container / bottle?	<u>Yes</u>	No		
12. Samples properly preserved?	<u>Yes</u>	No	N/A	
13. Sample container intact?	<u>Yes</u>	No		
14. Sufficient sample amount for indicated test(s)?	<u>Yes</u>	No		
15. All samples received within sufficient hold time?	<u>Yes</u>	No		
16. Subcontract of sample(s)?	<u>Yes</u>	No	<u>N/A</u>	
17. VOC sample have zero head space?	<u>Yes</u>	No	N/A	
18. Cooler 1 No.	Cooler 2 No.	Cooler 3 No.	Cooler 4 No.	Cooler 5 No.
lbs °C	lbs °C	lbs °C	lbs °C	lbs °C

#### Nonconformance Documentation

Contact: \_\_\_\_\_ Contacted by: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Regarding: \_\_\_\_\_

Corrective Action Taken: \_\_\_\_\_

Check all that apply: ☐ Cooling process has begun shortly after sampling event and out of temperature condition acceptable by NELAC 5.5.8.3.1.a.1.  
☐ Initial and Backup Temperature confirm out of temperature conditions  
☐ Client understands and would like to proceed with analysis



**Analytical Report 442140**  
**for**  
**Southern Union Gas Services- Monahans**

**Project Manager: Rose Slade**

**Line # 290 (East of Jal South)**

**Southern Union Gas**

**11-MAY-12**

Collected By: Client



**Celebrating 20 Years of commitment to excellence in Environmental Testing Services**



**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-MAY-12

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

Reference: XENCO Report No: **442140**  
**Line # 290 (East of Jal South)**  
Project Address: Lea County, NM

**Rose Slade:**

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 442140. 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. Estimation of data uncertainty for this report is found in the quality control section of this report unless otherwise noted. 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. 442140 will be filed for 60 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

---

**Nicholas Straccione**

Project Manager

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

*Certified and approved by numerous States and Agencies.*

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## Sample Cross Reference 442140



**Southern Union Gas Services- Monahans, Monahans, TX**

Line # 290 (East of Jal South)

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
N. Wall # 3	S	05-09-12 13:45		442140-001
N. Wall # 4	S	05-09-12 13:35		442140-002
N. Wall # 5	S	05-09-12 14:30		442140-003
S. Wall # 3	S	05-09-12 13:50		442140-004
S. Wall # 4	S	05-09-12 13:40		442140-005
S. Wall # 5	S	05-09-12 14:40		442140-006





## CASE NARRATIVE

**Client Name:** Southern Union Gas Services- Monahans

**Project Name:** Line # 290 (East of Jal South)



**Project ID:** Southern Union Gas

**Work Order Number:** 442140

**Report Date:** 11-MAY-12

**Date Received:** 05/10/2012

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**Sample receipt non conformances and comments:**

None

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**Sample receipt non conformances and comments per sample:**

None

**Analytical non nonformances and comments:**

**Batch:** LBA-887721 BTEX by EPA 8021B

SW8021BM

Batch 887721, Ethylbenzene, o-Xylene recovered below QC limits in the Matrix Spike.

Samples affected are: 442140-001, -003, -006, -002, -005, -004.

The Laboratory Control Sample for Ethylbenzene, o-Xylene is within laboratory Control Limits



# Certificate of Analysis Summary 442140 Southern Union Gas Services- Monahans, Monahans, TX

Project Name: Line # 290 (East of Jal South)

Project Id: Southern Union Gas  
 Contact: Rose Slade  
 Project Location: Lea County, NM

Date Received in Lab: Thu May-10-12 12:00 pm  
 Report Date: 11-MAY-12

Project Manager: Nicholas Straccione

Analysis Requested		Lab Id: Field Id: Depth: Matrix:	442140-001 N. Wall # 3	442140-002 N. Wall # 4	442140-003 N. Wall # 5	442140-004 S. Wall # 3	442140-005 S. Wall # 4	442140-006 S. Wall # 5
BTEX by EPA 8021B		Sampled:	May-09-12 13:45 May-10-12 14:35 May-10-12 20:18 mg/kg RL ND 0.000996	May-09-12 13:35 May-10-12 14:35 May-10-12 20:41 mg/kg RL ND 0.00100	May-09-12 14:30 May-10-12 14:35 May-10-12 21:03 mg/kg RL ND 0.000996	May-09-12 13:50 May-10-12 14:35 May-10-12 21:26 mg/kg RL ND 0.000994	May-09-12 13:40 May-10-12 14:35 May-10-12 21:48 mg/kg RL ND 0.00100	May-09-12 14:40 May-10-12 14:35 May-10-12 22:11 mg/kg RL ND 0.000998
Inorganic Anions Cl by EPA 300/300.1 SUB: TX104704215		Extracted: Analyzed: Units/RL:	May-11-12 10:26 May-11-12 10:26 mg/kg RL ND 1.02	May-11-12 10:58 May-11-12 10:58 mg/kg RL ND 1.02	May-11-12 11:15 May-11-12 11:15 mg/kg RL ND 1.02	May-11-12 11:31 May-11-12 11:31 mg/kg RL ND 1.01	May-11-12 11:47 May-11-12 11:47 mg/kg RL ND 1.03	May-11-12 12:03 May-11-12 12:03 mg/kg RL ND 1.06
Chloride		Extracted: Analyzed: Units/RL:	May-10-12 15:10 % RL 1.56 1.00	May-10-12 15:10 % RL 1.97 1.00	May-10-12 15:10 % RL 2.07 1.00	May-10-12 15:10 % RL ND 1.00	May-10-12 15:10 % RL 3.07 1.00	May-10-12 15:10 % RL 5.38 1.00
Percent Moisture		Extracted: Analyzed: Units/RL:	May-10-12 15:50 mg/kg RL ND 15.2	May-10-12 15:50 mg/kg RL ND 15.3	May-10-12 15:50 mg/kg RL ND 15.3	May-10-12 15:50 mg/kg RL ND 15.1	May-10-12 15:50 mg/kg RL ND 15.5	May-10-12 15:50 mg/kg RL ND 15.9
TPH By SW8015 Mod		Extracted: Analyzed: Units/RL:	May-10-12 21:31 mg/kg RL ND 15.2	May-10-12 22:01 mg/kg RL ND 15.3	May-10-12 22:27 mg/kg RL ND 15.3	May-10-12 22:55 mg/kg RL ND 15.1	May-10-12 23:23 mg/kg RL ND 15.5	May-11-12 00:46 mg/kg RL ND 15.9
C6-C12 Gasoline Range Hydrocarbons		Extracted: Analyzed: Units/RL:	May-10-12 15:50 mg/kg RL ND 15.2	May-10-12 15:50 mg/kg RL ND 15.3	May-10-12 15:50 mg/kg RL ND 15.3	May-10-12 15:50 mg/kg RL ND 15.1	May-10-12 15:50 mg/kg RL ND 15.5	May-10-12 15:50 mg/kg RL ND 15.9
C12-C28 Diesel Range Hydrocarbons		Extracted: Analyzed: Units/RL:	May-10-12 15:50 mg/kg RL ND 15.2	May-10-12 15:50 mg/kg RL ND 15.3	May-10-12 15:50 mg/kg RL ND 15.3	May-10-12 15:50 mg/kg RL ND 15.1	May-10-12 15:50 mg/kg RL ND 15.5	May-10-12 15:50 mg/kg RL ND 15.9
C28-C35 Oil Range Hydrocarbons		Extracted: Analyzed: Units/RL:	May-10-12 15:50 mg/kg RL ND 15.2	May-10-12 15:50 mg/kg RL ND 15.3	May-10-12 15:50 mg/kg RL ND 15.3	May-10-12 15:50 mg/kg RL ND 15.1	May-10-12 15:50 mg/kg RL ND 15.5	May-10-12 15:50 mg/kg RL ND 15.9
Total TPH		Extracted: Analyzed: Units/RL:	May-10-12 15:50 mg/kg RL ND 15.2	May-10-12 15:50 mg/kg RL ND 15.3	May-10-12 15:50 mg/kg RL ND 15.3	May-10-12 15:50 mg/kg RL ND 15.1	May-10-12 15:50 mg/kg RL ND 15.5	May-10-12 15:50 mg/kg RL ND 15.9

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

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

\* Surrogate recovered outside laboratory control limit.

**BRL** Below Reporting Limit.

**RL** Reporting Limit

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

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

**DL** Method Detection Limit

**NC** Non-Calculable

+ NELAC certification not offered for this compound.

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

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(770) 449-8800	(770) 449-5477
(602) 437-0330	



## Form 2 - Surrogate Recoveries

Project Name: Line # 290 (East of Jal South)

Work Orders : 442140,

Project ID: Southern Union Gas

Lab Batch #: 887721

Sample: 442140-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 05/10/12 20:18

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0263	0.0300	88	80-120	
4-Bromofluorobenzene	0.0240	0.0300	80	80-120	

Lab Batch #: 887721

Sample: 442140-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 05/10/12 20:41

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0260	0.0300	87	80-120	
4-Bromofluorobenzene	0.0247	0.0300	82	80-120	

Lab Batch #: 887721

Sample: 442140-003 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 05/10/12 21:03

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0257	0.0300	86	80-120	
4-Bromofluorobenzene	0.0239	0.0300	80	80-120	

Lab Batch #: 887721

Sample: 442140-004 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 05/10/12 21:26

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0263	0.0300	88	80-120	
4-Bromofluorobenzene	0.0243	0.0300	81	80-120	

Lab Batch #: 887727

Sample: 442140-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 05/10/12 21:31

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	83.7	100	84	70-135	
o-Terphenyl	44.5	50.0	89	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: Line # 290 (East of Jal South)

Work Orders : 442140,

Project ID: Southern Union Gas

Lab Batch #: 887721

Sample: 442140-005 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 05/10/12 21:48

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0261	0.0300	87	80-120	
4-Bromofluorobenzene	0.0243	0.0300	81	80-120	

Lab Batch #: 887727

Sample: 442140-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 05/10/12 22:01

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	83.7	100	84	70-135	
o-Terphenyl	44.5	50.0	89	70-135	

Lab Batch #: 887721

Sample: 442140-006 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 05/10/12 22:11

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0266	0.0300	89	80-120	
4-Bromofluorobenzene	0.0245	0.0300	82	80-120	

Lab Batch #: 887727

Sample: 442140-003 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 05/10/12 22:27

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	88.7	100	89	70-135	
o-Terphenyl	47.5	50.0	95	70-135	

Lab Batch #: 887727

Sample: 442140-004 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 05/10/12 22:55

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	81.8	100	82	70-135	
o-Terphenyl	42.5	50.0	85	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: Line # 290 (East of Jal South)

**Work Orders :** 442140,

**Project ID:** Southern Union Gas

**Lab Batch #:** 887727

**Sample:** 442140-005 / SMP

**Batch:** 1 **Matrix:** Soil

**Units:** mg/kg

**Date Analyzed:** 05/10/12 23:23

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	89.1	100	89	70-135	
o-Terphenyl	48.1	50.0	96	70-135	

**Lab Batch #:** 887727

**Sample:** 442140-006 / SMP

**Batch:** 1 **Matrix:** Soil

**Units:** mg/kg

**Date Analyzed:** 05/11/12 00:46

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	87.7	100	88	70-135	
o-Terphenyl	47.9	50.0	96	70-135	

**Lab Batch #:** 887727

**Sample:** 621723-1-BLK / BLK

**Batch:** 1 **Matrix:** Solid

**Units:** mg/kg

**Date Analyzed:** 05/10/12 18:47

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	93.0	100	93	70-135	
o-Terphenyl	51.3	50.0	103	70-135	

**Lab Batch #:** 887721

**Sample:** 621716-1-BLK / BLK

**Batch:** 1 **Matrix:** Solid

**Units:** mg/kg

**Date Analyzed:** 05/10/12 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	0.0271	0.0300	90	80-120	
4-Bromofluorobenzene	0.0242	0.0300	81	80-120	

**Lab Batch #:** 887727

**Sample:** 621723-1-BKS / BKS

**Batch:** 1 **Matrix:** Solid

**Units:** mg/kg

**Date Analyzed:** 05/10/12 17:52

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	102	100	102	70-135	
o-Terphenyl	51.9	50.0	104	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: Line # 290 (East of Jal South)

Work Orders : 442140,

Project ID: Southern Union Gas

Lab Batch #: 887721

Sample: 621716-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 05/10/12 18:26

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0283	0.0300	94	80-120	
4-Bromofluorobenzene	0.0271	0.0300	90	80-120	

Lab Batch #: 887727

Sample: 621723-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 05/10/12 18:19

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	85.6	100	86	70-135	
o-Terphenyl	51.6	50.0	103	70-135	

Lab Batch #: 887721

Sample: 621716-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 05/10/12 18:48

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0274	0.0300	91	80-120	
4-Bromofluorobenzene	0.0304	0.0300	101	80-120	

Lab Batch #: 887721

Sample: 442140-006 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 05/11/12 00:26

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0278	0.0300	93	80-120	
4-Bromofluorobenzene	0.0259	0.0300	86	80-120	

Lab Batch #: 887727

Sample: 442140-006 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 05/11/12 03:35

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	85.3	100	85	70-135	
o-Terphenyl	51.2	50.0	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: Line # 290 (East of Jal South)

Work Orders : 442140,

Lab Batch #: 887721

Sample: 442140-006 SD / MSD

Project ID: Southern Union Gas

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 05/11/12 00:48

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0279	0.0300	93	80-120	
4-Bromofluorobenzene	0.0284	0.0300	95	80-120	

Lab Batch #: 887727

Sample: 442140-006 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 05/11/12 04:02

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	103	100	103	70-135	
o-Terphenyl	51.4	50.0	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.



## Project Name: Line # 290 (East of Jal South)

Work Order #: 442140

Analyst: ASA

Lab Batch ID: 887721

Sample: 621716-1-BKS

Date Prepared: 05/10/2012

Batch #: 1

Project ID: Southern Union Gas

Date Analyzed: 05/10/2012

Matrix: Solid

Units: mg/kg

Units: mg/kg												
BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY												
Analytes	BTEX by EPA 8021B											
	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	0.102	102	2	70-130	35	
	Toluene	<0.00200	0.100	0.0992	99	0.100	0.102	102	3	70-130	35	
	Ethylbenzene	<0.00100	0.100	0.0947	95	0.100	0.100	100	5	71-129	35	
	m_p-Xylenes	<0.00200	0.200	0.193	97	0.200	0.205	103	6	70-135	35	
	o-Xylene	<0.00100	0.100	0.0963	96	0.100	0.104	104	8	71-133	35	

Analyst: KKO

Lab Batch ID: 887744

Sample: 621733-1-BKS

Date Prepared: 05/11/2012

Batch #: 1

Date Analyzed: 05/11/2012

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY											
Units: mg/kg											
	Inorganic Anions Cl by EPA 300/300.1										
	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
Analytes											
Chloride	<1.00	100	102	102	100	102	102	0	80-120	20	

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



**Project Name: Line # 290 (East of Jal South)**

**Work Order #: 442140**

**Analyst: ASA**

**Lab Batch ID: 887727**

**Sample: 621723-1-BKS**

**Date Prepared: 05/10/2012**

**Batch #: 1**

**Project ID: Southern Union Gas**

**Date Analyzed: 05/10/2012**

**Matrix: Solid**

**Units: mg/kg**

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY											
Units: mg/kg											
Analytes	TPH By SW8015 Mod										
	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	761	76	1000	773	77	2	70-135	35	
C12-C28 Diesel Range Hydrocarbons	<15.0	1000	984	98	1000	972	97	1	70-135	35	

## Analytes

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: Line # 290 (East of Jal South)

Work Order #: 442140

Lab Batch #: 887744

Date Analyzed: 05/11/2012

QC- Sample ID: 442140-001 S

Reporting Units: mg/kg

Date Prepared: 05/11/2012

Batch #: 1

Project ID: Southern Union Gas

Analyst: KKO

Matrix: Soil

#### 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	<1.02	102	104	102	80-120	

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

Relative Percent Difference [E] =  $200 \times (C-A)/(C+B)$

All Results are based on MDL and Validated for QC Purposes

BRL - Below Reporting Limit



# Form 3 - MS / MSD Recoveries



Project Name: Line # 290 (East of Jal South)

Work Order #: 442140

Lab Batch ID: 887721

Date Analyzed: 05/11/2012

Reporting Units: mg/kg

Project ID: Southern Union Gas

QC- Sample ID: 442140-006 S Batch #: 1 Matrix: Soil

Date Prepared: 05/10/2012 Analyst: ASA

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY														
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		
		Benzene	<0.000990	0.0990	0.0723	73	0.100	0.0774	77	7	70-130	35		
		Toluene	<0.00198	0.0990	0.0729	74	0.100	0.0778	78	7	70-130	35		
		Ethylbenzene	<0.000990	0.0990	0.0697	70	0.100	0.0752	75	8	71-129	35	X	
		m_p-Xylenes	<0.00198	0.198	0.140	71	0.201	0.153	76	9	70-135	35		
		o-Xylene	<0.000990	0.0990	0.0690	70	0.100	0.0764	76	10	71-133	35	X	

Lab Batch ID: 887727

Date Analyzed: 05/11/2012

Reporting Units: mg/kg

QC- Sample ID: 442140-006 S Batch #: 1 Matrix: Soil

Date Prepared: 05/10/2012 Analyst: ASA

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	<15.9	1060	793	75	1060	783	74	1	70-135	35	
C12-C28 Diesel Range Hydrocarbons	<15.9	1060	1010	95	1060	1010	95	0	70-135	35	

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

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

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





## Sample Duplicate Recovery



**Project Name: Line # 290 (East of Jal South)**

**Work Order #: 442140**

**Lab Batch #: 887718**

**Date Analyzed: 05/10/2012 15:10**

**Date Prepared: 05/10/2012**

**Project ID: Southern Union Gas**  
**Analyst: WIB**

**QC- Sample ID: 442140-001 D**

**Batch #: 1**

**Matrix: Soil**

**Reporting Units: %**

SAMPLE / SAMPLE DUPLICATE RECOVERY					
Percent Moisture	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Percent Moisture	1.56	1.67	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**

Atlanta, Boca Raton, Corpus Christi, Dallas

Houston, Miami, Odessa, Philadelphia

Phoenix, San Antonio, Tampa

Document Title: Sample Receipt Checklist

Document No.: SYS-SRC

Revision/Date: No. 01, 5/27/2010

Effective Date: 6/1/2010 Page 1 of 1

**Prelogin / Nonconformance Report - Sample Log-In**

Client:

Bosin / SUG

Date/Time:

5-10-12 12:00

Lab ID #:

447440

Initials:

AG

**Sample Receipt Checklist**

1. Samples on ice?	Blue	<u>Water</u>	No	
2. Shipping container in good condition?	<u>Yes</u>	No	None	
3. Custody seals intact on shipping container (cooler) and bottles?	<u>Yes</u>	No	N/A	
4. Chain of Custody present?	<u>Yes</u>	No		
5. Sample instructions complete on chain of custody?	<u>Yes</u>	No		
6. Any missing / extra samples?	Yes	<u>No</u>		
7. Chain of custody signed when relinquished / received?	<u>Yes</u>	No		
8. Chain of custody agrees with sample label(s)?	<u>Yes</u>	No		
9. Container labels legible and intact?	<u>Yes</u>	No		
10. Sample matrix / properties agree with chain of custody?	<u>Yes</u>	No		
11. Samples in proper container / bottle?	<u>Yes</u>	No		
12. Samples properly preserved?	<u>Yes</u>	No	N/A	
13. Sample container intact?	<u>Yes</u>	No		
14. Sufficient sample amount for indicated test(s)?	<u>Yes</u>	No		
15. All samples received within sufficient hold time?	<u>Yes</u>	No		
16. Subcontract of sample(s)?	<u>Yes</u>	No	N/A	
17. VOC sample have zero head space?	<u>Yes</u>	No	N/A	
18. Cooler 1 No.	Cooler 2 No.	Cooler 3 No.	Cooler 4 No.	Cooler 5 No.
lbs 0 °C	lbs °C	lbs °C	lbs °C	lbs °C

**Nonconformance Documentation**

Contact: \_\_\_\_\_ Contacted by: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Regarding: \_\_\_\_\_

Corrective Action Taken: \_\_\_\_\_

- Check all that apply:
- ☐ Cooling process has begun shortly after sampling event and out of temperature condition acceptable by NELAC 5.5.8.3.1.a.1.
  - ☐ Initial and Backup Temperature confirm out of temperature conditions
  - ☐ Client understands and would like to proceed with analysis

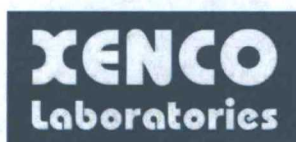


**Analytical Report 442651**  
**for**  
**Southern Union Gas Services- Monahans**

**Project Manager: Rose Slade**  
**Line 290 (East of Jal South)**

**30-MAY-12**

Collected By: Client



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New Hampshire (297408), New Jersey (TX007), New York (11763), Oklahoma (9218), Pennsylvania (68-03610)  
Rhode Island (LAO00312), USDA (S-44102), DoD (L11-54)

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





30-MAY-12

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

Reference: XENCO Report No: **442651**  
**Line 290 (East of Jal South)**  
Project Address: Lea County, NM

**Rose Slade:**

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 442651. 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. Estimation of data uncertainty for this report is found in the quality control section of this report unless otherwise noted. 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. 442651 will be filed for 60 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

---

**Nicholas Straccione**

Project Manager

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## Sample Cross Reference 442651



Southern Union Gas Services- Monahans, Monahans, TX

Line 290 (East of Jal South)

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
N. Wall # 6	S	05-17-12 10:10		442651-001
S. Wall # 6	S	05-17-12 10:15		442651-002
W. Wall # 2	S	05-17-12 10:20		442651-003
N. Wall # 7	S	05-17-12 11:10		442651-004
S. Wall # 7	S	05-17-12 11:15		442651-005





## CASE NARRATIVE

**Client Name:** Southern Union Gas Services- Monahans

**Project Name:** Line 290 (East of Jal South)



*Project ID:*

*Work Order Number:* 442651

*Report Date:* 30-MAY-12

*Date Received:* 05/18/2012

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**Sample receipt non conformances and comments:**

None

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**Sample receipt non conformances and comments per sample:**

None

**Analytical non nonformances and comments:**

Batch: LBA-888880 BTEX by EPA 8021B

SW8021BM

Batch 888880, 4-Bromofluorobenzene recovered below QC limits . Matrix interferences is suspected; data not confirmed by re-analysis

Samples affected are: 442651-003.



# Certificate of Analysis Summary 442651 Southern Union Gas Services- Monahans, Monahans, TX



Project Id:

Contact: Rose Slade

Project Location: Lea County, NM

Project Name: Line 290 (East of Jal South)

Date Received in Lab: Fri May-18-12 03:45 pm

Report Date: 30-MAY-12

Project Manager: Nicholas Straccione

Analysis Requested		Lab Id:	442651-001	442651-002	442651-003	442651-004	442651-005
		Field Id:	N. Wall # 6	S. Wall # 6	W. Wall # 2	N. Wall # 7	S. Wall # 7
		Depth:					
		Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL
		Sampled:	May-17-12 10:10	May-17-12 10:15	May-17-12 10:20	May-17-12 11:10	May-17-12 11:15
Anions Cl by E300		Extracted:					
		Analyzed:	May-22-12 13:00	May-22-12 13:00	May-22-12 13:00	May-22-12 13:00	May-22-12 13:00
		Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
			5.38 4.31	16.8 4.28	4.88 4.41	9.57 4.28	12.9 4.28
BTX by EPA 8021B		Extracted:	May-29-12 19:00	May-29-12 19:00	May-29-12 19:00	May-29-12 19:00	May-29-12 19:00
		Analyzed:	May-30-12 08:26	May-30-12 08:48	May-30-12 09:11	May-30-12 09:33	May-30-12 09:56
		Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
			ND 0.00102	ND 0.00101	ND 0.00105	ND 0.00101	ND 0.00102
Benzene			0.00264 0.00205	0.00465 0.00203	ND 0.00209	ND 0.00203	0.00453 0.00203
Toluene			ND 0.00102	ND 0.00101	ND 0.00105	ND 0.00101	0.00103 0.00102
Ethylbenzene			0.00279 0.00205	0.00263 0.00203	ND 0.00209	ND 0.00203	0.00381 0.00203
m,p-Xylenes			0.00135 0.00102	ND 0.00101	ND 0.00105	ND 0.00101	0.00121 0.00102
o-Xylene			0.00414 0.00102	0.00263 0.00101	ND 0.00105	ND 0.00101	0.00502 0.00102
Total Xylenes			0.00678 0.00102	0.00728 0.00101	ND 0.00105	ND 0.00101	0.0106 0.00102
Total BTX							
Percent Moisture		Extracted:					
		Analyzed:	May-21-12 15:00	May-21-12 15:00	May-21-12 15:00	May-21-12 15:00	May-21-12 15:00
		Units/RL:	% RL	% RL	% RL	% RL	% RL
			2.50 1.00	1.84 1.00	4.79 1.00	1.98 1.00	1.98 1.00
TPH By SW8015 Mod		Extracted:	May-23-12 16:00	May-23-12 16:00	May-23-12 16:00	May-23-12 16:00	May-23-12 16:00
		Analyzed:	May-24-12 09:53	May-24-12 10:22	May-24-12 10:52	May-24-12 11:20	May-24-12 11:49
		Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
			ND 15.3	ND 15.3	ND 15.7	ND 15.3	ND 15.3
C6-C12 Gasoline Range Hydrocarbons			ND 15.3	ND 15.3	ND 15.7	ND 15.3	ND 15.3
C12-C28 Diesel Range Hydrocarbons			ND 15.3	ND 15.3	ND 15.7	ND 15.3	ND 15.3
C28-C35 Oil Range Hydrocarbons			ND 15.3	ND 15.3	ND 15.7	ND 15.3	ND 15.3
Total TPH			ND 15.3	ND 15.3	ND 15.7	ND 15.3	ND 15.3

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

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

\* Surrogate recovered outside laboratory control limit.

**BRL** Below Reporting Limit.

**RL** Reporting Limit

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

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

**DL** Method Detection Limit

**NC** Non-Calculable

+ NELAC certification not offered for this compound.

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

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(602) 437-0330	



## Form 2 - Surrogate Recoveries

Project Name: Line 290 (East of Jal South)

Work Orders : 442651,

Project ID:

Lab Batch #: 888752

Sample: 442651-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 05/24/12 09:53

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	92.1	99.6	92	70-135	
o-Terphenyl	47.0	49.8	94	70-135	

Lab Batch #: 888752

Sample: 442651-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 05/24/12 10:22

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	86.1	100	86	70-135	
o-Terphenyl	43.0	50.0	86	70-135	

Lab Batch #: 888752

Sample: 442651-003 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 05/24/12 10:52

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	80.3	99.9	80	70-135	
o-Terphenyl	41.1	50.0	82	70-135	

Lab Batch #: 888752

Sample: 442651-004 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 05/24/12 11:20

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	84.1	99.8	84	70-135	
o-Terphenyl	42.7	49.9	86	70-135	

Lab Batch #: 888752

Sample: 442651-005 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 05/24/12 11:49

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	90.0	100	90	70-135	
o-Terphenyl	45.4	50.0	91	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: Line 290 (East of Jal South)

Work Orders : 442651,

Lab Batch #: 888880

Sample: 442651-001 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 05/30/12 08:26

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0262	0.0300	87	80-120	
4-Bromofluorobenzene	0.0252	0.0300	84	80-120	

Lab Batch #: 888880

Sample: 442651-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 05/30/12 08:48

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0253	0.0300	84	80-120	
4-Bromofluorobenzene	0.0244	0.0300	81	80-120	

Lab Batch #: 888880

Sample: 442651-003 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 05/30/12 09:11

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0243	0.0300	81	80-120	
4-Bromofluorobenzene	0.0224	0.0300	75	80-120	*

Lab Batch #: 888880

Sample: 442651-004 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 05/30/12 09:33

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0265	0.0300	88	80-120	
4-Bromofluorobenzene	0.0242	0.0300	81	80-120	

Lab Batch #: 888880

Sample: 442651-005 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 05/30/12 09:56

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0248	0.0300	83	80-120	
4-Bromofluorobenzene	0.0241	0.0300	80	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: Line 290 (East of Jal South)

Work Orders : 442651,

Lab Batch #: 888752

Sample: 622378-1-BLK / BLK

Project ID:

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 05/24/12 09:24

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	107	100	107	70-135	
o-Terphenyl	56.5	50.0	113	70-135	

Lab Batch #: 888880

Sample: 622463-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 05/30/12 08:03

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0258	0.0300	86	80-120	
4-Bromofluorobenzene	0.0273	0.0300	91	80-120	

Lab Batch #: 888752

Sample: 622378-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 05/24/12 08:28

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	125	100	125	70-135	
o-Terphenyl	59.9	50.0	120	70-135	

Lab Batch #: 888880

Sample: 622463-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 05/30/12 06:34

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0292	0.0300	97	80-120	
4-Bromofluorobenzene	0.0293	0.0300	98	80-120	

Lab Batch #: 888752

Sample: 622378-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 05/24/12 08:56

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	107	100	107	70-135	
o-Terphenyl	54.1	50.0	108	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: Line 290 (East of Jal South)

Work Orders : 442651,

Project ID:

Lab Batch #: 888880

Sample: 622463-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 05/30/12 06:56

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0300	0.0300	100	80-120	
4-Bromofluorobenzene	0.0297	0.0300	99	80-120	

Lab Batch #: 888752

Sample: 442651-001 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 05/24/12 17:05

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	118	99.9	118	70-135	
o-Terphenyl	57.3	50.0	115	70-135	

Lab Batch #: 888880

Sample: 442651-001 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 05/30/12 12:11

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0300	0.0300	100	80-120	
4-Bromofluorobenzene	0.0314	0.0300	105	80-120	

Lab Batch #: 888752

Sample: 442651-001 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 05/24/12 17:34

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	120	99.9	120	70-135	
o-Terphenyl	58.5	50.0	117	70-135	

Lab Batch #: 888880

Sample: 442651-001 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 05/30/12 12:34

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0289	0.0300	96	80-120	
4-Bromofluorobenzene	0.0315	0.0300	105	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.



**Project Name: Line 290 (East of Jal South)**

**Work Order #: 442651**

**Analyst: SMG**

**Lab Batch ID: 888880**

**Sample: 622463-1-BKS**

**Units: mg/kg**

**Date Prepared: 05/29/2012**

**Batch #: 1**

**Project ID:**

**Date Analyzed: 05/30/2012**

**Matrix: Solid**

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	0.0948	95	0.100	0.107	107	12	70-130	35
	Toluene	<0.00200	0.100	0.0964	96	0.100	0.107	107	10	70-130	35
	Ethylbenzene	<0.00100	0.100	0.0952	95	0.100	0.104	104	9	71-129	35
	m_p-Xylenes	<0.00200	0.200	0.194	97	0.200	0.211	106	8	70-135	35
	o-Xylene	<0.00100	0.100	0.0959	96	0.100	0.103	103	7	71-133	35

**Date Prepared: 05/22/2012**

**Analyst: SMG**

**Lab Batch ID: 888458**

**Sample: 888458-1-BKS**

**Batch #: 1**

**Date Analyzed: 05/22/2012**

**Matrix: Solid**

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY											
Units: mg/kg											
Analytes	Anions Cl by E300										
	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	<0.840	20.0	19.3	97	20.0	19.0	95	2	75-125	20	

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



**Project Name: Line 290 (East of Jal South)**

**Work Order #: 442651**

**Analyst: ASA**

**Lab Batch ID: 888752**

**Sample: 622378-1-BKS**

**Date Prepared: 05/23/2012**

**Batch #: 1**

**Project ID:**

**Date Analyzed: 05/24/2012**

**Matrix: Solid**

**Units: mg/kg**

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY													
Units: mg/kg	TPH By SW8015 Mod	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	
		Analytes											
	C6-C12 Gasoline Range Hydrocarbons	<15.0	1000	848	85	1000	736	74	14	70-135	35		
	C12-C28 Diesel Range Hydrocarbons	<15.0	1000	1050	105	1000	940	94	11	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: Line 290 (East of Jal South)

Work Order #: 442651

Lab Batch #: 888458

Date Analyzed: 05/22/2012

QC- Sample ID: 442649-001 S

Reporting Units: mg/kg

Project ID:

Analyst: SMG

Date Prepared: 05/22/2012

Batch #: 1

Matrix: Soil

### MATRIX / MATRIX SPIKE RECOVERY STUDY

Inorganic Anions by EPA 300	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Analytes						
Chloride	2280	572	2980	122	75-125	

Lab Batch #: 888458

Date Analyzed: 05/22/2012

QC- Sample ID: 442652-003 S

Reporting Units: mg/kg

Date Prepared: 05/22/2012

Analyst: SMG

Batch #: 1

Matrix: Soil

### MATRIX / MATRIX SPIKE RECOVERY STUDY

Inorganic Anions by EPA 300	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Analytes						
Chloride	5.62	107	98.7	87	75-125	

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

Relative Percent Difference [E] =  $200 \times (C-A)/(C+B)$

All Results are based on MDL and Validated for QC Purposes

BRL - Below Reporting Limit



# Form 3 - MS / MSD Recoveries

Project Name: Line 290 (East of Jal South)

Work Order #: 442651

Lab Batch ID: 888880

Date Analyzed: 05/30/2012

Reporting Units: mg/kg

Project ID:

QC- Sample ID: 442651-001 S Batch #: 1 Matrix: Soil

Date Prepared: 05/29/2012 Analyst: SMG

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY												
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 %RPD	Flag	
		Benzene	<0.00103	0.103	0.0850	83	0.102	0.0782	77	8	70-130	35
		Toluene	0.00264	0.103	0.0880	83	0.102	0.0801	76	9	70-130	35
		Ethylbenzene	<0.00103	0.103	0.0842	82	0.102	0.0795	78	6	71-129	35
		m_p-Xylenes	0.00279	0.206	0.175	84	0.205	0.162	78	8	70-135	35
		o-Xylene	0.00135	0.103	0.0846	81	0.102	0.0817	79	3	71-133	35

Lab Batch ID: 888752

Date Analyzed: 05/24/2012

Reporting Units: mg/kg

QC- Sample ID: 442651-001 S Batch #: 1 Matrix: Soil

Date Prepared: 05/23/2012 Analyst: ASA

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	<15.4	1020	783	77	1020	821	80	5	70-135	35	
C12-C28 Diesel Range Hydrocarbons	<15.4	1020	1060	104	1020	1070	105	1	70-135	35	

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

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

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



**Project Name: Line 290 (East of Jal South)**

**Work Order #: 442651**

**Lab Batch #: 888458**

**Date Analyzed: 05/22/2012 13:00**

**QC- Sample ID: 442649-001 D**

**Reporting Units: mg/kg**

**Date Prepared: 05/22/2012**

**Batch #: 1**

**Project ID:**

**Analyst: SMG**

**Matrix: Soil**

SAMPLE / SAMPLE DUPLICATE RECOVERY					
Anions Cl by E300	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Chloride	2280	2300	1	20	

**Lab Batch #: 888375**

**Date Analyzed: 05/21/2012 15:00**

**QC- Sample ID: 442584-001 D**

**Reporting Units: %**

**Date Prepared: 05/21/2012**

**Batch #: 1**

**Analyst: WRU**

**Matrix: Soil**

SAMPLE / SAMPLE DUPLICATE RECOVERY					
Percent Moisture	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Percent Moisture	11.0	10.8	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



# Environmental Lab of Texas

A Xenco Laboratories Company

12600 West I-20 East  
Odessa, Texas 79765

## CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

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

Page 1 of 1

Project Manager: Rose Slade

Project Name: Line 290 (East of Jal South)

Company Name: Southern Union Gas Services

Project #:

Company Address: 801 Loop 464

Project Loc: Lea County, New Mexico

City/State/Zip: Monahans, Texas 79756

PO #:

Telephone No: 432-940-5147

Fax No:

Report Format: ☒ Standard ☐ TRRP ☐ NPDES

Sampler Signature: *Rose Slade*

e-mail: [rose.slade@sug.com](mailto:rose.slade@sug.com)  
[curt.stanley@sug.com](mailto:curt.stanley@sug.com)

(lab use only)

ORDER #: 442651

LAB # (lab use only)	FIELD CODE	Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Field Filtered	Total #. of Containers	Ice	HNO <sub>3</sub>	HCl	H <sub>2</sub> SO <sub>4</sub>	NaOH	Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub>	None	Other (Specify)	DW=Drinking Water SL=Sludge GW = Groundwater S=Soil/Solid NP=Non-Potable Specify Other	TPH: 418.1 9015M 9015	TPH: TX 1005, TX 1006	Cations (Ca, Mg, Na, K)	Anions (Cl, SO <sub>4</sub> , Alkalinity)	SAR / ESP / CEC	Metals: As Ag Ba Cd Cr Pb Hg Se	Volatiles	Semivolatiles	BTEX 8021 B/5030 or BTEX 8260	RCI	N.O.R.M.	Chloride	HOLD	RUSH TAT (Pre-Schedule) 24, 48, 72	Standard TAT
61	N. Wall #6			5/17/2012	10:10		1	X								Soil	X	X							X	X					X
62	S. Wall #6			5/17/2012	10:15		1	X								Soil	X	X							X	X					X
03	W. Wall #2			5/17/2012	10:20		1	X								Soil	X	X							X	X					X
01	N. Wall #7			5/17/2012	11:10		1	X								Soil	X	X							X	X					X
05	S. Wall #7			5/17/2012	11:15		1	X								Soil	X	X							X	X					X

Special Instructions:

Please Send Copy of Lab Report to Basin Environmental

Relinquished by: <i>[Signature]</i>	Date: 5/18/12	Time: 1545	Received by:	Date:	Time:
Relinquished by:	Date:	Time:	Received by:	Date:	Time:
Relinquished by:	Date:	Time:	Received by: <i>[Signature]</i>	Date: 5/18/12	Time: 15:45

Laboratory Comments:

Sample Containers Intact? ☒ N  
VOCs Free of Headspace? ☒ N  
Labels on container(s) ☒ N  
Custody seals on container(s) ☒ N  
Custody seals on cooler(s) ☒ N  
Sample Hand Delivered by Sampler/Client Rep. ? ☒ N  
by Courier? ☒ N  
by DHL FedEx UPS as per receipt 4.0/2.5

Temperature Upon Receipt: 4.0/2.5





**XENCO Laboratories**  
Atlanta, Boca Raton, Corpus Christi, Dallas  
Houston, Miami, Odessa, Philadelphia  
Phoenix, San Antonio, Tampa

Document Title: Sample Receipt Checklist  
Document No.: SYS-SRC  
Revision/Date: No. 01, 5/27/2010  
Effective Date: 6/1/2010 Page 1 of 1

### Prelogin / Nonconformance Report - Sample Log-In

Client: SUAS  
Date/Time: 5/18/12 15:45  
Lab ID #: 447651  
Initials: AH

#### Sample Receipt Checklist

1. Samples on ice?	Blue	<u>Water</u>	No	
2. Shipping container in good condition?	<u>Yes</u>	No	None	
3. Custody seals intact on shipping container (cooler) and bottles?	<u>Yes</u>	No	N/A	
4. Chain of Custody present?	<u>Yes</u>	No		
5. Sample instructions complete on chain of custody?	<u>Yes</u>	No		
6. Any missing / extra samples?	Yes	<u>No</u>		
7. Chain of custody signed when relinquished / received?	<u>Yes</u>	No		
8. Chain of custody agrees with sample label(s)?	<u>Yes</u>	No		
9. Container labels legible and intact?	<u>Yes</u>	No		
10. Sample matrix / properties agree with chain of custody?	<u>Yes</u>	No		
11. Samples in proper container / bottle?	<u>Yes</u>	No		
12. Samples properly preserved?	<u>Yes</u>	No	N/A	
13. Sample container intact?	<u>Yes</u>	No		
14. Sufficient sample amount for indicated test(s)?	<u>Yes</u>	No		
15. All samples received within sufficient hold time?	<u>Yes</u>	No		
16. Subcontract of sample(s)?	Yes	No	<u>N/A</u>	
17. VOC sample have zero head space?	<u>Yes</u>	No	N/A	
18. Cooler 1 No.	Cooler 2 No.	Cooler 3 No.	Cooler 4 No.	Cooler 5 No.
lbs <u>2.5</u> °C	lbs °C	lbs °C	lbs °C	lbs °C

#### Nonconformance Documentation

Contact: \_\_\_\_\_ Contacted by: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Regarding: \_\_\_\_\_

Corrective Action Taken: \_\_\_\_\_

Check all that apply: ☐ Cooling process has begun shortly after sampling event and out of temperature condition acceptable by NELAC 5.5.8.3.1.a.1.  
☐ Initial and Backup Temperature confirm out of temperature conditions  
☐ Client understands and would like to proceed with analysis



# Appendix D

## Disposal Manifest





# SUNDANCE SERVICES, Inc.

P.O. Box 1737 Eunice, New Mexico 88231  
(575) 394-2511

TICKET No. 203312

LEASE OPERATOR/SHIPPER/COMPANY:

SUG

LEASE NAME:

Line 290 ET

TRANSPORTER COMPANY:

Triple M Truck/Trailer Service

TIME 12:12 AM/PM

DATE:

5-2-12

VEHICLE NO:

16

GENERATOR COMPANY

MAN'S NAME:

Carl Starkey

CHARGE TO:

SUG

RIG NAME  
AND NUMBER

## TYPE OF MATERIAL

☐ Production Water

☐ Drilling Fluids

☐ Rinsate

☐ Tank Bottoms

☒ Contaminated Soil

☐ Jet Out

☐ Solids

☐ BS&W Content:

☐ Call Out

Description:

oil

RRC or API #

C-133#

VOLUME OF MATERIAL

☐ BBLs

☒ YARD 12

☐

AS A CONDITION TO SUNDANCE SERVICES, INC.'S ACCEPTANCE OF THE MATERIALS SHIPPED WITH THIS JOB TICKET, OPERATOR/SHIPPER REPRESENTS AND WARRANTS THAT THE WASTE MATERIAL SHIPPED HERewith IS MATERIAL EXEMPT FROM THE RESOURCE, CONSERVATION AND RECOVERY ACT OF 1976, AS AMENDED FROM TIME TO TIME, 40 U.S.C. § 6901, et seq., THE NM HEALTH AND SAF. CODE § 361.001 et seq., AND REGULATIONS RELATED THERETO, BY VIRTUE OF THE EXEMPTION AFFORDED DRILLING FLUIDS, PRODUCED WATERS, AND OTHER WASTE ASSOCIATED WITH THE EXPLORATION, DEVELOPMENT OR PRODUCTION OF CRUDE OIL OR NATURAL GAS OR GEOTHERMAL ENERGY.

ALSO AS A CONDITION TO SUNDANCE SERVICES, INC.'S ACCEPTANCE OF THE MATERIALS SHIPPED WITH THIS JOB TICKET, TRANSPORTER REPRESENTS AND WARRANTS THAT ONLY THE MATERIAL DELIVERED BY OPERATOR/SHIPPER TO TRANSPORTER IS NOW DELIVERED BY TRANSPORTER TO SUNDANCE SERVICES, INC.'S FACILITY FOR DISPOSAL.

**THIS WILL CERTIFY** that the above Transporter loaded the material represented by this Transporter Statement at the above described location, and that it was tendered by the above described shipper. This will certify that no additional materials were added to this load, and that the material was delivered without incident.

DRIVER:

(SIGNATURE)

F. J. TORRES

FACILITY REPRESENTATIVE:

(SIGNATURE)

L. Sk. Cruz

White - Sundance

Canary - Sundance Acct #1

Pink - Transporter

Re-order from: TOTALLY SHARP ADVERTISING • 432-586-5401 • www.PromoSupermarket.com



**SUNDANCE SERVICES, Inc.**P.O. Box 1737 Eunice, New Mexico 88231  
(575) 394-2511

TICKET No. 203406

LEASE OPERATOR/SHIPPER/COMPANY: SUNLEASE NAME: Line 290-ETRANSPORTER COMPANY: UNIONTIME 11:13 AM/PMDATE: 5-3-12VEHICLE NO: 06GENERATOR COMPANY  
MAN'S NAME: StanleyCHARGE TO: 510RIG NAME  
AND NUMBER**TYPE OF MATERIAL**

- |   |  |                                   |
|---|--|-----------------------------------|
| <input type="checkbox"/> Production Water | <input type="checkbox"/> Drilling Fluids   | <input type="checkbox"/> Rinsate  |
| <input type="checkbox"/> Tank Bottoms     | <input type="checkbox"/> Contaminated Soil | <input type="checkbox"/> Jet Out  |
| <input type="checkbox"/> Solids           | <input type="checkbox"/> BS&W Content:     | <input type="checkbox"/> Call Out |

Description: 110

RRC or API #

C-133#

VOLUME OF MATERIAL ☐ BBLs.            : ☒ YARD 12 : ☐           

AS A CONDITION TO SUNDANCE SERVICES, INC.'S ACCEPTANCE OF THE MATERIALS SHIPPED WITH THIS JOB TICKET, OPERATOR/SHIPPER REPRESENTS AND WARRANTS THAT THE WASTE MATERIAL SHIPPED HERewith IS MATERIAL EXEMPT FROM THE RESOURCE, CONSERVATION AND RECOVERY ACT OF 1976, AS AMENDED FROM TIME TO TIME, 40 U.S.C. § 6901, et seq., THE NM HEALTH AND SAF. CODE § 361.001 et seq., AND REGULATIONS RELATED THERETO, BY VIRTUE OF THE EXEMPTION AFFORDED DRILLING FLUIDS, PRODUCED WATERS, AND OTHER WASTE ASSOCIATED WITH THE EXPLORATION, DEVELOPMENT OR PRODUCTION OF CRUDE OIL OR NATURAL GAS OR GEOTHERMAL ENERGY.

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DRIVER: Edmund Torres

(SIGNATURE)

FACILITY REPRESENTATIVE: J. S. Craig

(SIGNATURE)

White - Sundance

Canary - Sundance Acct #1

Pink - Transporter

Re-order from: TOTALLY SHARP ADVERTISING • 432-596-5401 • [www.PromoSupermarket.com](http://www.PromoSupermarket.com)





# SUNDANCE SERVICES, Inc.

P.O. Box 1737 Eunice, New Mexico 88231  
(575) 394-2511

TICKET No. 203436

LEASE OPERATOR/SHIPPER/COMPANY: 5116

LEASE NAME: 290 - R

TRANSPORTER COMPANY: 11116

TIME 1:20 AM/PM

DATE: 5-3-12

VEHICLE NO: 65

GENERATOR COMPANY  
NAME'S NAME C. Sh...

CHARGE TO: 5116

RIG NAME  
AND NUMBER 11116

## TYPE OF MATERIAL

- |   |   |                                   |
|---|---|-----------------------------------|
| <input type="checkbox"/> Production Water | <input type="checkbox"/> Drilling Fluids              | <input type="checkbox"/> Rinsate  |
| <input type="checkbox"/> Tank Bottoms     | <input checked="" type="checkbox"/> Contaminated Soil | <input type="checkbox"/> Jet Out  |
| <input type="checkbox"/> Solids           | <input type="checkbox"/> BS&W Content                 | <input type="checkbox"/> Call Out |

Description: C-110

RRC or API #

C-133#

VOLUME OF MATERIAL

☐ BBLs

☒ YARD

12

☐

AS A CONDITION TO SUNDANCE SERVICES, INC.'S ACCEPTANCE OF THE MATERIALS SHIPPED WITH THIS JOB TICKET, OPERATOR/SHIPPER REPRESENTS AND WARRANTS THAT THE WASTE MATERIAL SHIPPED HERewith IS MATERIAL EXEMPT FROM THE RESOURCE, CONSERVATION AND RECOVERY ACT OF 1976, AS AMENDED FROM TIME TO TIME, 40 U.S.C. § 6901, et seq., THE NM HEALTH AND SAF. CODE § 361.001 et seq., AND REGULATIONS RELATED THERETO, BY VIRTUE OF THE EXEMPTION AFFORDED DRILLING FLUIDS, PRODUCED WATERS, AND OTHER WASTE ASSOCIATED WITH THE EXPLORATION, DEVELOPMENT OR PRODUCTION OF CRUDE OIL OR NATURAL GAS OR GEOTHERMAL ENERGY.

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DRIVER: \_\_\_\_\_

(SIGNATURE)

FACILITY REPRESENTATIVE: \_\_\_\_\_

(SIGNATURE)

White - Sundance

Canary - Sundance Acct #1

Pink - Transporter

Re-order from: TOTALLY SHARP ADVERTISING • 432-586-5401 • www.PromoSupermarket.com





# SUNDANCE SERVICES, Inc.

P.O. Box 1737 Eunice, New Mexico 88231  
(575) 394-2511

TICKET No. 203531

LEASE OPERATOR/SHIPPER/COMPANY:

LEASE NAME:

290 E

TRANSPORTER COMPANY:

TIME 11:30 AM/PM

DATE:

5-4-12

VEHICLE NO:

13

GENERATOR COMPANY

MAN'S NAME:

1011 Street

CHARGE TO:

RIG NAME  
AND NUMBER

## TYPE OF MATERIAL

☐ Production Water

☐ Drilling Fluids

☐ Rinsate

☐ Tank Bottoms

☐ Contaminated Soil

☐ Jet Out

☐ Solids

☐ BS&W Content:

☐ Call Out

Description:

RRC or API #

C-133#

VOLUME OF MATERIAL

☐ BBLs

:

☐ YARD

:

☐

AS A CONDITION TO SUNDANCE SERVICES, INC.'S ACCEPTANCE OF THE MATERIALS SHIPPED WITH THIS JOB TICKET, OPERATOR/SHIPPER REPRESENTS AND WARRANTS THAT THE WASTE MATERIAL SHIPPED HERewith IS MATERIAL EXEMPT FROM THE RESOURCE, CONSERVATION AND RECOVERY ACT OF 1976, AS AMENDED FROM TIME TO TIME, 40 U.S.C. § 6901, et seq., THE NM HEALTH AND SAF. CODE § 361.001 et seq., AND REGULATIONS RELATED THERETO, BY VIRTUE OF THE EXEMPTION AFFORDED DRILLING FLUIDS, PRODUCED WATERS, AND OTHER WASTE ASSOCIATED WITH THE EXPLORATION, DEVELOPMENT OR PRODUCTION OF CRUDE OIL OR NATURAL GAS OR GEOTHERMAL ENERGY.

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DRIVER:

(SIGNATURE)

FACILITY REPRESENTATIVE:

(SIGNATURE)

White - Sundance

Canary - Sundance Acct #1

Pink - Transporter

Re-order from: TOTALLY SHARP ADVERTISING • 432-586-5401 • www.PromoSupermarket.com





# SUNDANCE SERVICES, Inc.

P.O. Box 1737 Eunice, New Mexico 88231  
(575) 394-2511

TICKET No. 203569

LEASE OPERATOR/SHIPPER/COMPANY:

LEASE NAME:

290 E

TRANSPORTER COMPANY:

TIME AM/PM

DATE:

VEHICLE NO:

GENERATOR COMPANY  
MAN'S NAME:

CHARGE TO:

RIG NAME  
AND NUMBER

## TYPE OF MATERIAL

☐ Production Water

☐ Drilling Fluids

☐ Rinsate

☐ Tank Bottoms

☐ Contaminated Soil

☐ Jet Out

☐ Solids

☐ BS&W Content:

☐ Call Out

Description:

RRC or API #

C-133#

VOLUME OF MATERIAL

☐ BBLs

☐ YARD

☐

AS A CONDITION TO SUNDANCE SERVICES, INC.'S ACCEPTANCE OF THE MATERIALS SHIPPED WITH THIS JOB TICKET, OPERATOR/SHIPPER REPRESENTS AND WARRANTS THAT THE WASTE MATERIAL SHIPPED HERewith IS MATERIAL EXEMPT FROM THE RESOURCE, CONSERVATION AND RECOVERY ACT OF 1976, AS AMENDED FROM TIME TO TIME, 40 U.S.C. § 6901, et seq., THE NM HEALTH AND SAF. CODE § 361.001 et seq., AND REGULATIONS RELATED THERETO, BY VIRTUE OF THE EXEMPTION AFFORDED DRILLING FLUIDS, PRODUCED WATERS, AND OTHER WASTE ASSOCIATED WITH THE EXPLORATION, DEVELOPMENT OR PRODUCTION OF CRUDE OIL OR NATURAL GAS OR GEOTHERMAL ENERGY.

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DRIVER:

(SIGNATURE)

FACILITY REPRESENTATIVE:

(SIGNATURE)

White - Sundance

Canary - Sundance Acct #1

Pink - Transporter

Re-order from: TOTALLY SHARP ADVERTISING • 432-586-5401 • www.PromoSupermarket.com





# SUNDANCE SERVICES, Inc.

P.O. Box 1737 Eunice, New Mexico 88231  
(575) 394-2511

TICKET No. 203699

LEASE OPERATOR/SHIPPER/COMPANY: SUG

LEASE NAME: 290 E

TRANSPORTER COMPANY: H. M. ...

TIME 1:40 AM/PM

DATE: 5/1/2012

VEHICLE NO: 27

GENERATOR COMPANY  
MAN'S NAME: C. Stanley

CHARGE TO: SUG

RIG NAME  
AND NUMBER

## TYPE OF MATERIAL

☐ Production Water

☐ Drilling Fluids

☐ Rinsate

☐ Tank Bottoms

☒ Contaminated Soil

☐ Jet Out

☐ Solids

☐ BS&W Content:

☐ Call Out

Description: old

RRC or API #

C-133#

VOLUME OF MATERIAL

☐ BBLs

☒ YARD

12

☐

AS A CONDITION TO SUNDANCE SERVICES, INC.'S ACCEPTANCE OF THE MATERIALS SHIPPED WITH THIS JOB TICKET, OPERATOR/SHIPPER REPRESENTS AND WARRANTS THAT THE WASTE MATERIAL SHIPPED HERewith IS MATERIAL EXEMPT FROM THE RESOURCE, CONSERVATION AND RECOVERY ACT OF 1976, AS AMENDED FROM TIME TO TIME, 40 U.S.C. § 6901, et seq., THE NM HEALTH AND SAF. CODE § 361.001 et seq., AND REGULATIONS RELATED THERETO, BY VIRTUE OF THE EXEMPTION AFFORDED DRILLING FLUIDS, PRODUCED WATERS, AND OTHER WASTE ASSOCIATED WITH THE EXPLORATION, DEVELOPMENT OR PRODUCTION OF CRUDE OIL OR NATURAL GAS OR GEOTHERMAL ENERGY.

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DRIVER:

(SIGNATURE)

FACILITY REPRESENTATIVE:

(SIGNATURE)

White - Sundance

Canary - Sundance Acct #1

Pink - Transporter

Re-order from: TOTALLY SHARP ADVERTISING - 432-596-5401 - www.PromoSupermarket.com





# SUNDANCE SERVICES, Inc.

P.O. Box 1737 Eunice, New Mexico 88231  
(575) 394-2511

TICKET No. 203706

LEASE OPERATOR/SHIPPER/COMPANY:

LEASE NAME:

TRANSPORTER COMPANY:

TIME 2 AM/PM

DATE:

VEHICLE NO:

GENERATOR COMPANY  
MAN'S NAME:

CHARGE TO:

RIG NAME  
AND NUMBER

## TYPE OF MATERIAL

- |   |  |                                   |
|---|--|-----------------------------------|
| <input type="checkbox"/> Production Water | <input type="checkbox"/> Drilling Fluids   | <input type="checkbox"/> Rinsate  |
| <input type="checkbox"/> Tank Bottoms     | <input type="checkbox"/> Contaminated Soil | <input type="checkbox"/> Jet Out  |
| <input type="checkbox"/> Solids           | <input type="checkbox"/> BS&W Content:     | <input type="checkbox"/> Call Out |

Description:

RRC or API #

C-133#

VOLUME OF MATERIAL

☐ BBLs

☒ YARD

☐

AS A CONDITION TO SUNDANCE SERVICES, INC.'S ACCEPTANCE OF THE MATERIALS SHIPPED WITH THIS JOB TICKET, OPERATOR/SHIPPER REPRESENTS AND WARRANTS THAT THE WASTE MATERIAL SHIPPED HERewith IS MATERIAL EXEMPT FROM THE RESOURCE, CONSERVATION AND RECOVERY ACT OF 1976, AS AMENDED FROM TIME TO TIME, 40 U.S.C. § 6901, et seq., THE NM HEALTH AND SAF. CODE § 361.001 et seq., AND REGULATIONS RELATED THERETO, BY VIRTUE OF THE EXEMPTION AFFORDED DRILLING FLUIDS, PRODUCED WATERS, AND OTHER WASTE ASSOCIATED WITH THE EXPLORATION, DEVELOPMENT OR PRODUCTION OF CRUDE OIL OR NATURAL GAS OR GEOTHERMAL ENERGY.

ALSO AS A CONDITION TO SUNDANCE SERVICES, INC.'S ACCEPTANCE OF THE MATERIALS SHIPPED WITH THIS JOB TICKET, TRANSPORTER REPRESENTS AND WARRANTS THAT ONLY THE MATERIAL DELIVERED BY OPERATOR/SHIPPER TO TRANSPORTER IS NOW DELIVERED BY TRANSPORTER TO SUNDANCE SERVICES, INC.'S FACILITY FOR DISPOSAL.

**THIS WILL CERTIFY** that the above Transporter loaded the material represented by this Transporter Statement at the above described location, and that it was tendered by the above described shipper. This will certify that no additional materials were added to this load, and that the material was delivered without incident.

DRIVER:

(SIGNATURE)

FACILITY REPRESENTATIVE:

(SIGNATURE)

White - Sundance

Canary - Sundance Acct #1

Pink - Transporter

Re-order from: TOTALLY SHARP ADVERTISING • 432-586-5401 • [www.PromoSupermarket.com](http://www.PromoSupermarket.com)





# SUNDANCE SERVICES, Inc.

P.O. Box 1737 Eunice, New Mexico 88231  
(575) 394-2511

TICKET No. 203802

LEASE OPERATOR/SHIPPER/COMPANY: SUG

LEASE NAME: Line 290

TRANSPORTER COMPANY: TRAIL H

TIME 11:2 AM/PM

DATE: 5/8/12 VEHICLE NO: CG 101

GENERATOR COMPANY  
MAN'S NAME: C. Smith

CHARGE TO: SUG

RIG NAME  
AND NUMBER: 1025104

## TYPE OF MATERIAL

- |   |  |                                   |
|---|--|-----------------------------------|
| <input type="checkbox"/> Production Water | <input type="checkbox"/> Drilling Fluids   | <input type="checkbox"/> Rinsate  |
| <input type="checkbox"/> Tank Bottoms     | <input type="checkbox"/> Contaminated Soil | <input type="checkbox"/> Jet Out  |
| <input type="checkbox"/> Solids           | <input type="checkbox"/> BS&W Content:     | <input type="checkbox"/> Call Out |

Description: 3741

RRC or API #

C-133#

VOLUME OF MATERIAL ☐ BBLs. \_\_\_\_\_ : ☐ YARD 12 : ☐ \_\_\_\_\_

AS A CONDITION TO SUNDANCE SERVICES, INC.'S ACCEPTANCE OF THE MATERIALS SHIPPED WITH THIS JOB TICKET, OPERATOR/SHIPPER REPRESENTS AND WARRANTS THAT THE WASTE MATERIAL SHIPPED HERewith IS MATERIAL EXEMPT FROM THE RESOURCE, CONSERVATION AND RECOVERY ACT OF 1976, AS AMENDED FROM TIME TO TIME, 40 U.S.C. § 6901, et seq., THE NM HEALTH AND SAF. CODE § 361.001 et seq., AND REGULATIONS RELATED THERETO, BY VIRTUE OF THE EXEMPTION AFFORDED DRILLING FLUIDS, PRODUCED WATERS, AND OTHER WASTE ASSOCIATED WITH THE EXPLORATION, DEVELOPMENT OR PRODUCTION OF CRUDE OIL OR NATURAL GAS OR GEOTHERMAL ENERGY.

ALSO AS A CONDITION TO SUNDANCE SERVICES, INC.'S ACCEPTANCE OF THE MATERIALS SHIPPED WITH THIS JOB TICKET, TRANSPORTER REPRESENTS AND WARRANTS THAT ONLY THE MATERIAL DELIVERED BY OPERATOR/SHIPPER TO TRANSPORTER IS NOW DELIVERED BY TRANSPORTER TO SUNDANCE SERVICES, INC.'S FACILITY FOR DISPOSAL.

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DRIVER: Edward Jones

(SIGNATURE)

FACILITY REPRESENTATIVE: \_\_\_\_\_

(SIGNATURE)

White - Sundance

Canary - Sundance Acct #1

Pink - Transporter

Re-order from: TOTALLY SHARP ADVERTISING • 432-586-5401 • [www.PromoSupermarket.com](http://www.PromoSupermarket.com)





# SUNDANCE SERVICES, Inc.

P.O. Box 1737 Eunice, New Mexico 88231  
(575) 394-2511

TICKET No. 203969

LEASE OPERATOR/SHIPPER/COMPANY:

LEASE NAME:

TRANSPORTER COMPANY:

TIME AM/PM

DATE:

VEHICLE NO:

GENERATOR COMPANY  
MAN'S NAME:

CHARGE TO:

RIG NAME  
AND NUMBER

## TYPE OF MATERIAL

☐ Production Water

☐ Drilling Fluids

☐ Rinsate

☐ Tank Bottoms

☐ Contaminated Soil

☐ Jet Out

☐ Solids

☐ BS&W Content:

☐ Call Out

Description:

RRC or API #

C-133#

VOLUME OF MATERIAL

☐ BBLS.

☐ YARD

12

☐

AS A CONDITION TO SUNDANCE SERVICES, INC.'S ACCEPTANCE OF THE MATERIALS SHIPPED WITH THIS JOB TICKET, OPERATOR/SHIPPER REPRESENTS AND WARRANTS THAT THE WASTE MATERIAL SHIPPED HERewith IS MATERIAL EXEMPT FROM THE RESOURCE, CONSERVATION AND RECOVERY ACT OF 1976, AS AMENDED FROM TIME TO TIME, 40 U.S.C. § 6901, et seq., THE NM HEALTH AND SAF. CODE § 361.001 et seq., AND REGULATIONS RELATED THERETO, BY VIRTUE OF THE EXEMPTION AFFORDED DRILLING FLUIDS, PRODUCED WATERS, AND OTHER WASTE ASSOCIATED WITH THE EXPLORATION, DEVELOPMENT OR PRODUCTION OF CRUDE OIL OR NATURAL GAS OR GEOTHERMAL ENERGY.

ALSO AS A CONDITION TO SUNDANCE SERVICES, INC.'S ACCEPTANCE OF THE MATERIALS SHIPPED WITH THIS JOB TICKET, TRANSPORTER REPRESENTS AND WARRANTS THAT ONLY THE MATERIAL DELIVERED BY OPERATOR/SHIPPER TO TRANSPORTER IS NOW DELIVERED BY TRANSPORTER TO SUNDANCE SERVICES, INC.'S FACILITY FOR DISPOSAL.

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DRIVER:

(SIGNATURE)

FACILITY REPRESENTATIVE:

(SIGNATURE)

White - Sundance

Canary - Sundance Acct #1

Pink - Transporter

Re-order from: TOTALLY SHARP ADVERTISING - 432-586-5401 - www.PromoSupermarket.com



**SUNDANCE SERVICES, Inc.**P.O. Box 1737 Eunice, New Mexico 88231  
(575) 394-2511

TICKET No. 204016

LEASE OPERATOR/SHIPPER/COMPANY: SUNLEASE NAME: 11-27-01TRANSPORTER COMPANY: TransTIME 11:00 AM/PMDATE: 11/27/01VEHICLE NO: 00GENERATOR/COMPANY  
MAN'S NAME: 11-27-01CHARGE TO: 11-27-01RIG NAME  
AND NUMBER**TYPE OF MATERIAL**

- |   |  |                                   |
|---|--|-----------------------------------|
| <input type="checkbox"/> Production Water | <input type="checkbox"/> Drilling Fluids   | <input type="checkbox"/> Rinsate  |
| <input type="checkbox"/> Tank Bottoms     | <input type="checkbox"/> Contaminated Soil | <input type="checkbox"/> Jet Out  |
| <input type="checkbox"/> Solids           | <input type="checkbox"/> BS&W Content:     | <input type="checkbox"/> Call Out |

Description: 11-27-01

RRC or API #

C-133#

VOLUME OF MATERIAL

☐ BBLs☒ YARD☐

AS A CONDITION TO SUNDANCE SERVICES, INC.'S ACCEPTANCE OF THE MATERIALS SHIPPED WITH THIS JOB TICKET, OPERATOR/SHIPPER REPRESENTS AND WARRANTS THAT THE WASTE MATERIAL SHIPPED HERewith IS MATERIAL EXEMPT FROM THE RESOURCE, CONSERVATION AND RECOVERY ACT OF 1976, AS AMENDED FROM TIME TO TIME, 40 U.S.C. § 6901, et seq., THE NM HEALTH AND SAF. CODE § 361.001 et seq., AND REGULATIONS RELATED THERETO, BY VIRTUE OF THE EXEMPTION AFFORDED DRILLING FLUIDS, PRODUCED WATERS, AND OTHER WASTE ASSOCIATED WITH THE EXPLORATION, DEVELOPMENT OR PRODUCTION OF CRUDE OIL OR NATURAL GAS OR GEOTHERMAL ENERGY.

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DRIVER: [Signature]

(SIGNATURE)

FACILITY REPRESENTATIVE: [Signature]

(SIGNATURE)

White - Sundance

Canary - Sundance Acct #1

Pink - Transporter

Re-order from: TOTALLY SHARP ADVERTISING • 432-586-5401 • www.PromoSupermarket.com





# SUNDANCE SERVICES, Inc.

P.O. Box 1737 Eunice, New Mexico 88231  
(575) 394-2511

TICKET No. 204089

LEASE OPERATOR/SHIPPER/COMPANY:

LEASE NAME:

TRANSPORTER COMPANY:

TIME AM/PM

DATE:

VEHICLE NO:

GENERATOR COMPANY  
MAN'S NAME:

CHARGE TO:

RIG NAME  
AND NUMBER

## TYPE OF MATERIAL

☐ Production Water

☐ Drilling Fluids

☐ Rinsate

☐ Tank Bottoms

☐ Contaminated Soil

☐ Jet Out

☐ Solids

☐ BS&W Content:

☐ Call Out

Description:

RRC or API #

C-133#

VOLUME OF MATERIAL

☐ BBLs

☐ YARD

☐

AS A CONDITION TO SUNDANCE SERVICES, INC.'S ACCEPTANCE OF THE MATERIALS SHIPPED WITH THIS JOB TICKET, OPERATOR/SHIPPER REPRESENTS AND WARRANTS THAT THE WASTE MATERIAL SHIPPED HERewith IS MATERIAL EXEMPT FROM THE RESOURCE, CONSERVATION AND RECOVERY ACT OF 1976, AS AMENDED FROM TIME TO TIME, 40 U.S.C. § 6901, et seq., THE NM HEALTH AND SAF. CODE § 361.001 et seq., AND REGULATIONS RELATED THERETO, BY VIRTUE OF THE EXEMPTION AFFORDED DRILLING FLUIDS, PRODUCED WATERS, AND OTHER WASTE ASSOCIATED WITH THE EXPLORATION, DEVELOPMENT OR PRODUCTION OF CRUDE OIL OR NATURAL GAS OR GEOTHERMAL ENERGY.

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DRIVER:

(SIGNATURE)

FACILITY REPRESENTATIVE:

(SIGNATURE)

White - Sundance

Canary - Sundance Acct #1

Pink - Transporter

Re-order from: TOTALLY SHARP ADVERTISING • 432-586-5401 • www.PromoSupermarket.com





# SUNDANCE SERVICES, Inc.

P.O. Box 1737 Eunice, New Mexico 88231  
(575) 394-2511

TICKET No. 204247

LEASE OPERATOR/SHIPPER/COMPANY: SUN

LEASE NAME: LINE #270

TRANSPORTER COMPANY: 4th Street Truck

TIME 9:15 AM/PM

DATE: 12-11-12

VEHICLE NO: 27

GENERATOR COMPANY  
MAN'S NAME: Unit 270

CHARGE TO: SUN

RIG NAME  
AND NUMBER

## TYPE OF MATERIAL

☐ Production Water

☐ Drilling Fluids

☐ Rinsate

☐ Tank Bottoms

☒ Contaminated Soil

☐ Jet Out

☐ Solids

☐ BS&W Content:

☐ Call Out

Description: CID

RRC or API #

C-133#

VOLUME OF MATERIAL ☐ BBLs

☒ YARD 12

☐

AS A CONDITION TO SUNDANCE SERVICES, INC.'S ACCEPTANCE OF THE MATERIALS SHIPPED WITH THIS JOB TICKET, OPERATOR/SHIPPER REPRESENTS AND WARRANTS THAT THE WASTE MATERIAL SHIPPED HERewith IS MATERIAL EXEMPT FROM THE RESOURCE, CONSERVATION AND RECOVERY ACT OF 1976, AS AMENDED FROM TIME TO TIME, 40 U.S.C. § 6901, et seq., THE NM HEALTH AND SAF. CODE § 361.001 et seq., AND REGULATIONS RELATED THERETO, BY VIRTUE OF THE EXEMPTION AFFORDED DRILLING FLUIDS, PRODUCED WATERS, AND OTHER WASTE ASSOCIATED WITH THE EXPLORATION, DEVELOPMENT OR PRODUCTION OF CRUDE OIL OR NATURAL GAS OR GEOTHERMAL ENERGY.

ALSO AS A CONDITION TO SUNDANCE SERVICES, INC.'S ACCEPTANCE OF THE MATERIALS SHIPPED WITH THIS JOB TICKET, TRANSPORTER REPRESENTS AND WARRANTS THAT ONLY THE MATERIAL DELIVERED BY OPERATOR/SHIPPER TO TRANSPORTER IS NOW DELIVERED BY TRANSPORTER TO SUNDANCE SERVICES, INC.'S FACILITY FOR DISPOSAL.

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DRIVER: [Signature]

(SIGNATURE)

FACILITY REPRESENTATIVE: [Signature]

(SIGNATURE)

White - Sundance

Canary - Sundance Acct #1

Pink - Transporter

Re-order from: TOTALLY SHARP ADVERTISING • 432-586-5401 • www.PromoSupermarket.com



**SUNDANCE SERVICES, Inc.**P.O. Box 1737 Eunice, New Mexico 88231  
(575) 394-2511

TICKET No.

204303

LEASE OPERATOR/SHIPPER/COMPANY:

SUG

LEASE NAME:

Line 290

TRANSPORTER COMPANY:

Hernandez Truck

TIME 1:55 AM/PM

DATE:

5-11-12

VEHICLE NO:

1

GENERATOR COMPANY  
MAN'S NAME:

C. Stanley

CHARGE TO:

SUG

RIG NAME  
AND NUMBER**TYPE OF MATERIAL**☐ Production Water☐ Drilling Fluids☐ Rinsate☐ Tank Bottoms☒ Contaminated Soil☐ Jet Out☐ Solids☐ BS&W Content:☐ Call Out

Description:

CID

RRC or API #

C-133#

VOLUME OF MATERIAL ☐ BBLs.

:

☒ YARD

:

☐

AS A CONDITION TO SUNDANCE SERVICES, INC.'S ACCEPTANCE OF THE MATERIALS SHIPPED WITH THIS JOB TICKET, OPERATOR/SHIPPER REPRESENTS AND WARRANTS THAT THE WASTE MATERIAL SHIPPED HERewith IS MATERIAL EXEMPT FROM THE RESOURCE, CONSERVATION AND RECOVERY ACT OF 1976, AS AMENDED FROM TIME TO TIME, 40 U.S.C. § 6901, et seq., THE NM HEALTH AND SAF. CODE § 361.001 et seq., AND REGULATIONS RELATED THERETO, BY VIRTUE OF THE EXEMPTION AFFORDED DRILLING FLUIDS, PRODUCED WATERS, AND OTHER WASTE ASSOCIATED WITH THE EXPLORATION, DEVELOPMENT OR PRODUCTION OF CRUDE OIL OR NATURAL GAS OR GEOTHERMAL ENERGY.

ALSO AS A CONDITION TO SUNDANCE SERVICES, INC.'S ACCEPTANCE OF THE MATERIALS SHIPPED WITH THIS JOB TICKET, TRANSPORTER REPRESENTS AND WARRANTS THAT ONLY THE MATERIAL DELIVERED BY OPERATOR/SHIPPER TO TRANSPORTER IS NOW DELIVERED BY TRANSPORTER TO SUNDANCE SERVICES, INC.'S FACILITY FOR DISPOSAL.

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DRIVER:

(SIGNATURE)

FACILITY REPRESENTATIVE:

(SIGNATURE)

White - Sundance

Canary - Sundance Acct #1

Pink - Transporter

Re-order from: TOTALLY SHARP ADVERTISING • 432-586-5401 • www.PromoSupermarket.com



**SUNDANCE SERVICES, Inc.**P.O. Box 1737 Eunice, New Mexico 88231  
(575) 394-2511

TICKET No. 204324

LEASE OPERATOR/SHIPPER/COMPANY: SLIGLEASE NAME: Line 290TRANSPORTER COMPANY: Triple MTIME 3:38 AM/PMDATE: 5-11-12 VEHICLE NO: 05GENERATOR COMPANY  
MAN'S NAME: A. StanleyCHARGE TO: SLIGRIG NAME  
AND NUMBER**TYPE OF MATERIAL**

- |   |   |                                   |
|---|---|-----------------------------------|
| <input type="checkbox"/> Production Water | <input type="checkbox"/> Drilling Fluids              | <input type="checkbox"/> Rinsate  |
| <input type="checkbox"/> Tank Bottoms     | <input checked="" type="checkbox"/> Contaminated Soil | <input type="checkbox"/> Jet Out  |
| <input type="checkbox"/> Solids           | <input type="checkbox"/> BS&W Content:                | <input type="checkbox"/> Call Out |

Description: oil

RRC or API #

C-133#

VOLUME OF MATERIAL ☐ BBLs. \_\_\_\_\_ : ☒ YARD 12 : ☐ \_\_\_\_\_

AS A CONDITION TO SUNDANCE SERVICES, INC.'S ACCEPTANCE OF THE MATERIALS SHIPPED WITH THIS JOB TICKET, OPERATOR/SHIPPER REPRESENTS AND WARRANTS THAT THE WASTE MATERIAL SHIPPED HERewith IS MATERIAL EXEMPT FROM THE RESOURCE, CONSERVATION AND RECOVERY ACT OF 1976, AS AMENDED FROM TIME TO TIME, 40 U.S.C. § 6901, et seq., THE NM HEALTH AND SAF. CODE § 361.001 et seq., AND REGULATIONS RELATED THERETO, BY VIRTUE OF THE EXEMPTION AFFORDED DRILLING FLUIDS, PRODUCED WATERS, AND OTHER WASTE ASSOCIATED WITH THE EXPLORATION, DEVELOPMENT OR PRODUCTION OF CRUDE OIL OR NATURAL GAS OR GEOTHERMAL ENERGY.

ALSO AS A CONDITION TO SUNDANCE SERVICES, INC.'S ACCEPTANCE OF THE MATERIALS SHIPPED WITH THIS JOB TICKET, TRANSPORTER REPRESENTS AND WARRANTS THAT ONLY THE MATERIAL DELIVERED BY OPERATOR/SHIPPER TO TRANSPORTER IS NOW DELIVERED BY TRANSPORTER TO SUNDANCE SERVICES, INC.'S FACILITY FOR DISPOSAL.

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DRIVER: \_\_\_\_\_

(SIGNATURE)

FACILITY REPRESENTATIVE: A. Stanley

(SIGNATURE)

White - Sundance

Canary - Sundance Acct #1

Pink - Transporter

Re-order from: TOTALLY SHARP ADVERTISING • 432-586-5401 • www.PromoSupermarket.com





# SUNDANCE SERVICES, Inc.

P.O. Box 1737 Eunice, New Mexico 88231  
(575) 394-2511

TICKET No. 204606

LEASE OPERATOR/SHIPPER/COMPANY: SUG

LEASE NAME: Jim 7390

TRANSPORTER COMPANY: Harmer

TIME 10:00 AM/PM

DATE: 5-19-12

VEHICLE NO: 199

GENERATOR COMPANY  
MAN'S NAME: A. Sturkey

CHARGE TO: SUG

RIG NAME  
AND NUMBER

## TYPE OF MATERIAL

☐ Production Water

☐ Drilling Fluids

☐ Rinsate

☐ Tank Bottoms

☒ Contaminated Soil

☐ Jet Out

☐ Solids

☐ BS&W Content:

☐ Call Out

Description: Oil

RRC or API #

C-133#

VOLUME OF MATERIAL

☐ BBLs

☒ YARD

☐

AS A CONDITION TO SUNDANCE SERVICES, INC.'S ACCEPTANCE OF THE MATERIALS SHIPPED WITH THIS JOB TICKET, OPERATOR/SHIPPER REPRESENTS AND WARRANTS THAT THE WASTE MATERIAL SHIPPED HERewith IS MATERIAL EXEMPT FROM THE RESOURCE, CONSERVATION AND RECOVERY ACT OF 1976, AS AMENDED FROM TIME TO TIME, 40 U.S.C. § 6901, et seq., THE NM HEALTH AND SAF. CODE § 361.001 et seq., AND REGULATIONS RELATED THERETO, BY VIRTUE OF THE EXEMPTION AFFORDED DRILLING FLUIDS, PRODUCED WATERS, AND OTHER WASTE ASSOCIATED WITH THE EXPLORATION, DEVELOPMENT OR PRODUCTION OF CRUDE OIL OR NATURAL GAS OR GEOTHERMAL ENERGY.

ALSO AS A CONDITION TO SUNDANCE SERVICES, INC.'S ACCEPTANCE OF THE MATERIALS SHIPPED WITH THIS JOB TICKET, TRANSPORTER REPRESENTS AND WARRANTS THAT ONLY THE MATERIAL DELIVERED BY OPERATOR/SHIPPER TO TRANSPORTER IS NOW DELIVERED BY TRANSPORTER TO SUNDANCE SERVICES, INC.'S FACILITY FOR DISPOSAL.

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DRIVER: [Signature]

(SIGNATURE)

FACILITY REPRESENTATIVE: [Signature]

(SIGNATURE)

White - Sundance

Canary - Sundance Acct #1

Pink - Transporter

Re-order from: TOTALLY SHARP ADVERTISING • 432-586-5401 • [www.PromoSupermarket.com](http://www.PromoSupermarket.com)



**SUNDANCE SERVICES, Inc.**P.O. Box 1737 Eunice, New Mexico 88231  
(575) 394-2511

TICKET No. 204746

LEASE OPERATOR/SHIPPER/COMPANY: SUGLEASE NAME: Line #296TRANSPORTER COMPANY: Henderson TruckTIME 11:17 AM/PMDATE: 5-19-12VEHICLE NO: 01GENERATOR COMPANY  
MAN'S NAME: C. StanleyCHARGE TO: SUGRIG NAME  
AND NUMBER**TYPE OF MATERIAL**☐ Production Water☐ Drilling Fluids☐ Rinsate☐ Tank Bottoms☒ Contaminated Soil☐ Jet Out☐ Solids☐ BS&W Content:☐ Call OutDescription: CID

RRC or API #

C-133#

VOLUME OF MATERIAL

☐ BBLs☒ YARD☐

AS A CONDITION TO SUNDANCE SERVICES, INC.'S ACCEPTANCE OF THE MATERIALS SHIPPED WITH THIS JOB TICKET, OPERATOR/SHIPPER REPRESENTS AND WARRANTS THAT THE WASTE MATERIAL SHIPPED HERewith IS MATERIAL EXEMPT FROM THE RESOURCE, CONSERVATION AND RECOVERY ACT OF 1976, AS AMENDED FROM TIME TO TIME, 40 U.S.C. § 6901, et seq., THE NM HEALTH AND SAF. CODE § 361.001 et seq., AND REGULATIONS RELATED THERETO, BY VIRTUE OF THE EXEMPTION AFFORDED DRILLING FLUIDS, PRODUCED WATERS, AND OTHER WASTE ASSOCIATED WITH THE EXPLORATION, DEVELOPMENT OR PRODUCTION OF CRUDE OIL OR NATURAL GAS OR GEOTHERMAL ENERGY.

ALSO AS A CONDITION TO SUNDANCE SERVICES, INC.'S ACCEPTANCE OF THE MATERIALS SHIPPED WITH THIS JOB TICKET, TRANSPORTER REPRESENTS AND WARRANTS THAT ONLY THE MATERIAL DELIVERED BY OPERATOR/SHIPPER TO TRANSPORTER IS NOW DELIVERED BY TRANSPORTER TO SUNDANCE SERVICES, INC.'S FACILITY FOR DISPOSAL.

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DRIVER: [Signature]

(SIGNATURE)

FACILITY REPRESENTATIVE: [Signature]

(SIGNATURE)

White - Sundance

Canary - Sundance Acct #1

Pink - Transporter

Re-order from: TOTALLY SHARP ADVERTISING • 432-586-5401 • [www.PromoSupermarket.com](http://www.PromoSupermarket.com)



**SUNDANCE SERVICES, Inc.**P.O. Box 1737 Eunice, New Mexico 88231  
(575) 394-2511

TICKET No. 204802

LEASE OPERATOR/SHIPPER/COMPANY: SUCLEASE NAME: Line-290TRANSPORTER COMPANY: Wipe AllTIME 1:55 AM/PMDATE: 5-16-12 VEHICLE NO: 66GENERATOR COMPANY  
MAN'S NAME: A. StanleyCHARGE TO: SUCRIG NAME  
AND NUMBER**TYPE OF MATERIAL**☐ Production Water☐ Drilling Fluids☐ Rinsate☐ Tank Bottoms☒ Contaminated Soil☐ Jet Out☐ Solids☐ BS&W Content:☐ Call OutDescription: oil

RRC or API #

C-133#

VOLUME OF MATERIAL ☐ BBLs.☒ YARD 12☐

AS A CONDITION TO SUNDANCE SERVICES, INC.'S ACCEPTANCE OF THE MATERIALS SHIPPED WITH THIS JOB TICKET, OPERATOR/SHIPPER REPRESENTS AND WARRANTS THAT THE WASTE MATERIAL SHIPPED HERewith IS MATERIAL EXEMPT FROM THE RESOURCE, CONSERVATION AND RECOVERY ACT OF 1976, AS AMENDED FROM TIME TO TIME, 40 U.S.C. § 6901, et seq., THE NM HEALTH AND SAF. CODE § 361,001 et seq., AND REGULATIONS RELATED THERETO, BY VIRTUE OF THE EXEMPTION AFFORDED DRILLING FLUIDS, PRODUCED WATERS, AND OTHER WASTE ASSOCIATED WITH THE EXPLORATION, DEVELOPMENT OR PRODUCTION OF CRUDE OIL OR NATURAL GAS OR GEOTHERMAL ENERGY.

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DRIVER: [Signature]

(SIGNATURE)

FACILITY REPRESENTATIVE: [Signature]

(SIGNATURE)

White - Sundance

Canary - Sundance Acct #1

Pink - Transporter

Re-order from: TOTALLY SHARP ADVERTISING • 432-586-5401 • www.PromoSupermarket.com





# SUNDANCE SERVICES, Inc.

P.O. Box 1737 Eunice, New Mexico 88231  
(575) 394-2511

TICKET No. 204830

LEASE OPERATOR/SHIPPER/COMPANY: SUN

LEASE NAME: 1111

TRANSPORTER COMPANY: Trans

TIME 9:50 AM/PM

DATE: 11/12/12

VEHICLE NO: 13

GENERATOR COMPANY  
MAN'S NAME: A. Smith

CHARGE TO: SUN

RIG NAME  
AND NUMBER

## TYPE OF MATERIAL

- |   |  |                                   |
|---|--|-----------------------------------|
| <input type="checkbox"/> Production Water | <input type="checkbox"/> Drilling Fluids   | <input type="checkbox"/> Rinsate  |
| <input type="checkbox"/> Tank Bottoms     | <input type="checkbox"/> Contaminated Soil | <input type="checkbox"/> Jet Out  |
| <input type="checkbox"/> Solids           | <input type="checkbox"/> BS&W Content:     | <input type="checkbox"/> Call Out |

Description: oil

RRC or API #

C-133#

VOLUME OF MATERIAL

☐ BBLS

☒ YARD

☐

AS A CONDITION TO SUNDANCE SERVICES, INC.'S ACCEPTANCE OF THE MATERIALS SHIPPED WITH THIS JOB TICKET, OPERATOR/SHIPPER REPRESENTS AND WARRANTS THAT THE WASTE MATERIAL SHIPPED HERewith IS MATERIAL EXEMPT FROM THE RESOURCE, CONSERVATION AND RECOVERY ACT OF 1976, AS AMENDED FROM TIME TO TIME, 40 U.S.C. § 6901, et seq., THE NM HEALTH AND SAF. CODE § 361.001 et seq., AND REGULATIONS RELATED THERETO, BY VIRTUE OF THE EXEMPTION AFFORDED DRILLING FLUIDS, PRODUCED WATERS, AND OTHER WASTE ASSOCIATED WITH THE EXPLORATION, DEVELOPMENT OR PRODUCTION OF CRUDE OIL OR NATURAL GAS OR GEOTHERMAL ENERGY.

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DRIVER: [Signature]

(SIGNATURE)

FACILITY REPRESENTATIVE: [Signature]

(SIGNATURE)

White - Sundance

Canary - Sundance Acct #1

Pink - Transporter

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**SUNDANCE SERVICES, Inc.**P.O. Box 1737 Eunice, New Mexico 88231  
(575) 394-2511

TICKET No. 204887

LEASE OPERATOR/SHIPPER/COMPANY: SLGLEASE NAME: Line 290TRANSPORTER COMPANY: PalmerTIME 9:15 AM/PMDATE: 5-17-12 VEHICLE NO: 196GENERATOR COMPANY  
MAN'S NAME: P. SpillerCHARGE TO: SLGRIG NAME  
AND NUMBER**TYPE OF MATERIAL**

- |   |  |                                   |
|---|--|-----------------------------------|
| <input type="checkbox"/> Production Water | <input type="checkbox"/> Drilling Fluids   | <input type="checkbox"/> Rinsate  |
| <input type="checkbox"/> Tank Bottoms     | <input type="checkbox"/> Contaminated Soil | <input type="checkbox"/> Jet Out  |
| <input type="checkbox"/> Solids           | <input type="checkbox"/> BS&W Content:     | <input type="checkbox"/> Call Out |

Description: oil

RRC or API #

C-133#

VOLUME OF MATERIAL ☐ BBLS. \_\_\_\_\_ : ☐ YARD 12 : ☐ \_\_\_\_\_

AS A CONDITION TO SUNDANCE SERVICES, INC.'S ACCEPTANCE OF THE MATERIALS SHIPPED WITH THIS JOB TICKET, OPERATOR/SHIPPER REPRESENTS AND WARRANTS THAT THE WASTE MATERIAL SHIPPED HERewith IS MATERIAL EXEMPT FROM THE RESOURCE, CONSERVATION AND RECOVERY ACT OF 1976, AS AMENDED FROM TIME TO TIME, 40 U.S.C. § 6901, et seq., THE NM HEALTH AND SAF. CODE § 361.001 et seq., AND REGULATIONS RELATED THERETO, BY VIRTUE OF THE EXEMPTION AFFORDED DRILLING FLUIDS, PRODUCED WATERS, AND OTHER WASTE ASSOCIATED WITH THE EXPLORATION, DEVELOPMENT OR PRODUCTION OF CRUDE OIL OR NATURAL GAS OR GEOTHERMAL ENERGY.

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DRIVER: [Signature]

(SIGNATURE)

FACILITY REPRESENTATIVE: [Signature]

(SIGNATURE)

White - Sundance

Canary - Sundance Acct #1

Pink - Transporter

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# SUNDANCE SERVICES, Inc.

P.O. Box 1737 Eunice, New Mexico 88231  
(575) 394-2511

TICKET No. 204901

LEASE OPERATOR/SHIPPER/COMPANY: SUC

LEASE NAME: Line 290

TRANSPORTER COMPANY: KOCHE

TIME 12:55 AM/PM

DATE: 6-17-12

VEHICLE NO: 199

GENERATOR COMPANY  
MAN'S NAME: R. G. Gentry

CHARGE TO: SUC

RIG NAME  
AND NUMBER

## TYPE OF MATERIAL

☐ Production Water

☐ Drilling Fluids

☐ Rinsate

☐ Tank Bottoms

☒ Contaminated Soil

☐ Jet Out

☐ Solids

☐ BS&W Content:

☐ Call Out

Description: 010

RRC or API #

C-133#

VOLUME OF MATERIAL

☐ BBLs

☐ YARD

AS A CONDITION TO SUNDANCE SERVICES, INC.'S ACCEPTANCE OF THE MATERIALS SHIPPED WITH THIS JOB TICKET, OPERATOR/SHIPPER REPRESENTS AND WARRANTS THAT THE WASTE MATERIAL SHIPPED HERewith IS MATERIAL EXEMPT FROM THE RESOURCE, CONSERVATION AND RECOVERY ACT OF 1976, AS AMENDED FROM TIME TO TIME, 40 U.S.C. § 6901, et seq., THE NM HEALTH AND SAF. CODE § 361.001 et seq., AND REGULATIONS RELATED THERETO, BY VIRTUE OF THE EXEMPTION AFFORDED DRILLING FLUIDS, PRODUCED WATERS, AND OTHER WASTE ASSOCIATED WITH THE EXPLORATION, DEVELOPMENT OR PRODUCTION OF CRUDE OIL OR NATURAL GAS OR GEOTHERMAL ENERGY.

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DRIVER:

(SIGNATURE)

FACILITY REPRESENTATIVE:

(SIGNATURE)

White - Sundance

Canary - Sundance Acct #1

Pink - Transporter

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# SUNDANCE SERVICES, Inc.

P.O. Box 1737 Eunice, New Mexico 88231  
(575) 394-2511

TICKET No. 204909

LEASE OPERATOR/SHIPPER/COMPANY: SUG

LEASE NAME: Line 240

TRANSPORTER COMPANY: TITAN

TIME 11:25 AM/PM

DATE: 5-17-12

VEHICLE NO: 13

GENERATOR COMPANY  
MAN'S NAME: P. Smith

CHARGE TO: SUG

RIG NAME  
AND NUMBER

## TYPE OF MATERIAL

☐ Production Water

☐ Drilling Fluids

☐ Rinsate

☐ Tank Bottoms

☐ Contaminated Soil

☐ Jet Out

☐ Solids

☐ BS&W Content:

☐ Call Out

Description: CTD

RRC or API #

C-133#

VOLUME OF MATERIAL ☐ BBLs

☐ YARD 12

☐

AS A CONDITION TO SUNDANCE SERVICES, INC.'S ACCEPTANCE OF THE MATERIALS SHIPPED WITH THIS JOB TICKET, OPERATOR/SHIPPER REPRESENTS AND WARRANTS THAT THE WASTE MATERIAL SHIPPED HERewith IS MATERIAL EXEMPT FROM THE RESOURCE, CONSERVATION AND RECOVERY ACT OF 1976, AS AMENDED FROM TIME TO TIME, 40 U.S.C. § 6901, et seq., THE NM HEALTH AND SAF. CODE § 361.001 et seq., AND REGULATIONS RELATED THERETO, BY VIRTUE OF THE EXEMPTION AFFORDED DRILLING FLUIDS, PRODUCED WATERS, AND OTHER WASTE ASSOCIATED WITH THE EXPLORATION, DEVELOPMENT OR PRODUCTION OF CRUDE OIL OR NATURAL GAS OR GEOTHERMAL ENERGY.

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DRIVER:

(SIGNATURE)

FACILITY REPRESENTATIVE:

(SIGNATURE)

White - Sundance

Canary - Sundance Acct #1

Pink - Transporter

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# SUNDANCE SERVICES, Inc.

P.O. Box 1737 Eunice, New Mexico 88231  
(575) 394-2511

TICKET No. 204923

LEASE OPERATOR/SHIPPER/COMPANY:

LEASE NAME:

TRANSPORTER COMPANY:

TIME AM/PM

GATE:

VEHICLE NO:

GENERATOR COMPANY  
MAN'S NAME:

CHARGE TO:

RIG NAME  
AND NUMBER

## TYPE OF MATERIAL

- |   |  |                                   |
|---|--|-----------------------------------|
| <input type="checkbox"/> Production Water | <input type="checkbox"/> Drilling Fluids   | <input type="checkbox"/> Rinsate  |
| <input type="checkbox"/> Tank Bottoms     | <input type="checkbox"/> Contaminated Soil | <input type="checkbox"/> Jet Out  |
| <input type="checkbox"/> Solids           | <input type="checkbox"/> BS&W Content:     | <input type="checkbox"/> Call Out |

Description:

RRC or API #

C-133#

VOLUME OF MATERIAL ☐ BBLs. ☐ YARD ☐

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DRIVER:

(SIGNATURE)

FACILITY REPRESENTATIVE:

(SIGNATURE)

White - Sundance

Canary - Sundance Acct #1

Pink - Transporter

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**SUNDANCE SERVICES, Inc.**P.O. Box 1737 Eunice, New Mexico 88231  
(575) 394-2511

TICKET No. 204942

LEASE OPERATOR/SHIPPER/COMPANY:

LEASE NAME:

TRANSPORTER COMPANY:

TIME AM/PM

DATE:

VEHICLE NO:

GENERATOR/COMPANY  
MAN'S NAME:

CHARGE TO:

RIG NAME  
AND NUMBER**TYPE OF MATERIAL**

- |   |  |                                   |
|---|--|-----------------------------------|
| <input type="checkbox"/> Production Water | <input type="checkbox"/> Drilling Fluids   | <input type="checkbox"/> Rinsate  |
| <input type="checkbox"/> Tank Bottoms     | <input type="checkbox"/> Contaminated Soil | <input type="checkbox"/> Jet Out  |
| <input type="checkbox"/> Solids           | <input type="checkbox"/> BS&W Content:     | <input type="checkbox"/> Call Out |

Description:

RRC or API #

C-133#

VOLUME OF MATERIAL [ ] BBLs : [ ] YARD : [ ]

AS A CONDITION TO SUNDANCE SERVICES, INC.'S ACCEPTANCE OF THE MATERIALS SHIPPED WITH THIS JOB TICKET, OPERATOR/SHIPPER REPRESENTS AND WARRANTS THAT THE WASTE MATERIAL SHIPPED HERewith IS MATERIAL EXEMPT FROM THE RESOURCE, CONSERVATION AND RECOVERY ACT OF 1976, AS AMENDED FROM TIME TO TIME, 40 U.S.C. § 6901, et seq., THE NM HEALTH AND SAF. CODE § 361.001 et seq., AND REGULATIONS RELATED THERETO, BY VIRTUE OF THE EXEMPTION AFFORDED DRILLING FLUIDS, PRODUCED WATERS, AND OTHER WASTE ASSOCIATED WITH THE EXPLORATION, DEVELOPMENT OR PRODUCTION OF CRUDE OIL OR NATURAL GAS OR GEOTHERMAL ENERGY.

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DRIVER:

(SIGNATURE)

FACILITY REPRESENTATIVE:

(SIGNATURE)

White - Sundance

Canary - Sundance Acct #1

Pink - Transporter

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# SUNDANCE SERVICES, Inc.

P.O. Box 1737 Eunice, New Mexico 88231  
(575) 394-2511

TICKET No. 205054

LEASE OPERATOR/SHIPPER/COMPANY:

LEASE NAME:

TRANSPORTER COMPANY:

TIME 1:4 AM/PM

DATE:

VEHICLE NO:

GENERATOR COMPANY

MAN'S NAME:

CHARGE TO:

RIG NAME  
AND NUMBER

## TYPE OF MATERIAL

☐ Production Water

☐ Drilling Fluids

☐ Rinsate

☐ Tank Bottoms

☒ Contaminated Soil

☐ Jet Out

☐ Solids

☐ BS&W Content

☐ Call Out

Description:

RRC or API #

C-133#

VOLUME OF MATERIAL

☐ BBLs

☒ YARD

12

☐

AS A CONDITION TO SUNDANCE SERVICES, INC.'S ACCEPTANCE OF THE MATERIALS SHIPPED WITH THIS JOB TICKET, OPERATOR/SHIPPER REPRESENTS AND WARRANTS THAT THE WASTE MATERIAL SHIPPED HERewith IS MATERIAL EXEMPT FROM THE RESOURCE CONSERVATION AND RECOVERY ACT OF 1976, AS AMENDED FROM TIME TO TIME, 40 U.S.C. § 6901, et seq., THE NM HEALTH AND SAF. CODE § 361.001 et seq., AND REGULATIONS RELATED THERETO, BY VIRTUE OF THE EXEMPTION AFFORDED DRILLING FLUIDS, PRODUCED WATERS, AND OTHER WASTE ASSOCIATED WITH THE EXPLORATION, DEVELOPMENT OR PRODUCTION OF CRUDE OIL OR NATURAL GAS OR GEOTHERMAL ENERGY.

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DRIVER:

(SIGNATURE)

FACILITY REPRESENTATIVE:

(SIGNATURE)

White - Sundance

Canary - Sundance Acct #1

Pink - Transporter

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