SOIL INVESTIGATION SUMMARY

AND SITE

CLOSURE REQUEST

Southern Union Gas Services
Trunk MB-1 Historical Release Site
Lea County, New Mexico
UNIT LTR "P" (SE ¼ /SE ¼), Section 16, Township 25 South, Range 37 East
Latitude 32° 07.526' North, Longitude 103° 09.695' West
NMOCD Reference # 1RP-1848

NOVA
safety and environmental

Prepared For:

Southern Union Gas Services
801 South Loop 464
Monahans, Texas 79756

HOBBS OCD

DEC 12 2012

RECEIVED

Prepared By:

NOVA Safety & Environmental
2057 Commerce
Midland, Texas 79703

December 2012

Camille J. Bryant
Project Manager

Brittan K. Byerly, P.G.
President

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1.0 INTRODUCTION

Nova Safety & Environmental (NOVA), on behalf of Southern Union Gas Services (SUGS), has prepared this Soil Investigation Summary and Site Closure Request for Trunk MB-1 Historical Release Site. The legal description of the release site is Unit Letter "P" (SE ¼ SE ¼), Section 16, Township 25 South, Range 37 East, in Lea County, New Mexico. The property affected by the release is owned by the State of New Mexico and administered by the New Mexico State Land Office (NMSLO). A Right-of-Entry permit (ROE-2210) was granted by the NMSLO, Santa Fe Office. The release site GPS coordinates are 32° 07.526' North and 103° 09.695' West. Please reference Figure 1 for a Site Location Map and Figure 2 for a Site Details Schematic and Confirmation Soil Sample Locations Map. The Release Notification and Corrective Action (Form C-141) is provided as Appendix C.

On April 18, 2008, SUGS discovered a release of crude oil and natural gas had occurred from a eight (8) inch low pressure pipeline. The pipeline was damaged during a line repair resulting in a release of crude oil and natural gas. SUGS submitted the Release Notification and Corrective Action (Form C-141) to the New Mexico Oil Conservation Division (NMOCD) Hobbs District Office on April 29, 2008. The C-141 indicated approximately ten (10) barrels of crude oil and 40,000 mcf's of natural gas were released from the pipeline, with approximately three and half (3.5) barrels recovered. General photographs of the site are provided as Appendix B.

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

2.0 NMOCD SITE CLASSIFICATION

A search of the New Mexico Office of the State Engineer (NMOSE) database did not identify the average depth to groundwater information for Section 16, Township 25 South, Range 37 East. A reference map utilized by the NMOCD indicated depth to groundwater at the release site should be encountered at approximately seventy (70) feet below ground surface (bgs). The depth to groundwater at the Trunk MB-1 Historical Release Site results in a score of ten (10) points being assigned to the site, based on the NMOCD depth to groundwater criteria.

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

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

The NMOCD guidelines indicate the Trunk MB-1 Historical Release Site has ranking score of ten (10). Based on this score, the soil remediation levels for a site with a ranking score of ten (10) points are as follows:

- Benzene – 10 mg/Kg (ppm)

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

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

3.0 SUMMARY OF SOIL REMEDIATION ACTIVITIES

On November 16, 2012, NOVA commenced soil investigation activities at the Trunk MB-1 Historical Release Site. Based on historical documentation and stressed vegetation, a trench was excavated in the vicinity of the inferred release point. The trench was completed to a total depth of approximately nine (9) feet bgs. The depth of the trench was determined on review of historical data and by field observations conducted during excavation activities. The trench was excavated along SUGS's pipeline in a northwest-southeast direction. The trench measured approximately twenty-five (25) feet in length and was approximately twelve (12) feet in width. The excavated soil was stockpiled in a cleared area north of the excavated area. Please reference Figure 2 for site details.

On November 15, 2012, five (5) soil samples (RP Floor @ 9', North S/W @ 4', West S/W @ 4', East S/W @ 4', and South S/W @ 4') were collected from the trench and submitted to the laboratory for determination of concentrations of benzene, toluene, ethyl-benzene, and xylene (BTEX), total petroleum hydrocarbons (TPH), and chlorides using EPA SW-846 8012b, 8015M, and E 300, respectively. On completion of soil sampling activities the trench was backfilled. Laboratory analytical results indicated benzene, BTEX and TPH concentrations were less than the appropriate laboratory method detection limits (MDL) for all submitted soil samples. Chloride concentrations ranged from 12.1 mg/Kg for soil sample North S/W @ 4' to 136 mg/Kg for soil sample East S/W @ 4'. A review of laboratory analytical results indicated benzene, BTEX, TPH, and chloride concentrations were less than NMOCD regulatory guidelines. Table 1 summarizes the Concentrations of BTEX, TPH, and Chlorides in Soil. Laboratory analytical reports are provided as Appendix A.

In addition, one (1) composite soil sample (SP-1) was collected from the stockpiled soil and submitted to the laboratory for analysis. Laboratory analytical results indicated benzene, BTEX, and TPH concentrations were less than the appropriate laboratory MDL. The soil sample exhibited a chloride concentration of 7.31 mg/Kg. A review of analytical results indicated benzene, BTEX, TPH, and chloride concentrations were less than NMOCD regulatory guidelines (Table 1).

4.0 QA/QC PROCEDURES

4.1 Soil Sampling

Soil Samples were delivered to Permian Basin Environmental Lab, LP, of Midland, Texas for BTEX and/or TPH and/or chloride analyses using the methods described below. Soil samples were analyzed for BTEX and/or TPH and/or chloride concentrations within fourteen (14) days following the sampling event.

The soil samples were analyzed as follows:

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

4.2 Decontamination of Equipment

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

4.3 Laboratory Protocol

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

5.0 SITE CLOSURE REQUEST

Based on the analytical results of confirmation soil samples, NOVA recommends SUGS provide the NMOCD a copy of this Soil Investigation Summary and Site Closure Request and request the NMOCD grant final closure to the Trunk MB-1 Historical Release Site.

6.0 LIMITATIONS

NOVA Safety and Environmental has prepared this Soil Investigation Summary and Site Closure Request to the best of its ability. No other warranty, expressed or implied, is made or intended.

NOVA Safety and Environmental has examined and relied upon documents referenced in the report and has relied on oral statements made by certain individuals. NOVA Safety and Environmental has not conducted an independent examination of the facts contained in referenced materials and statements. We have presumed the genuineness of the documents and that the information provided in documents or statements is true and accurate. NOVA Safety and Environmental has prepared this report, in a professional manner, using the degree of skill and care exercised by similar environmental consultants. NOVA Safety and Environmental also notes that the facts and conditions referenced in this report may change over time and the conclusions and recommendations set forth herein are applicable only to the facts and conditions as described at the time of this report.

This report has been prepared for the benefit of 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 NOVA Safety and Environmental and/or Southern Union Gas.

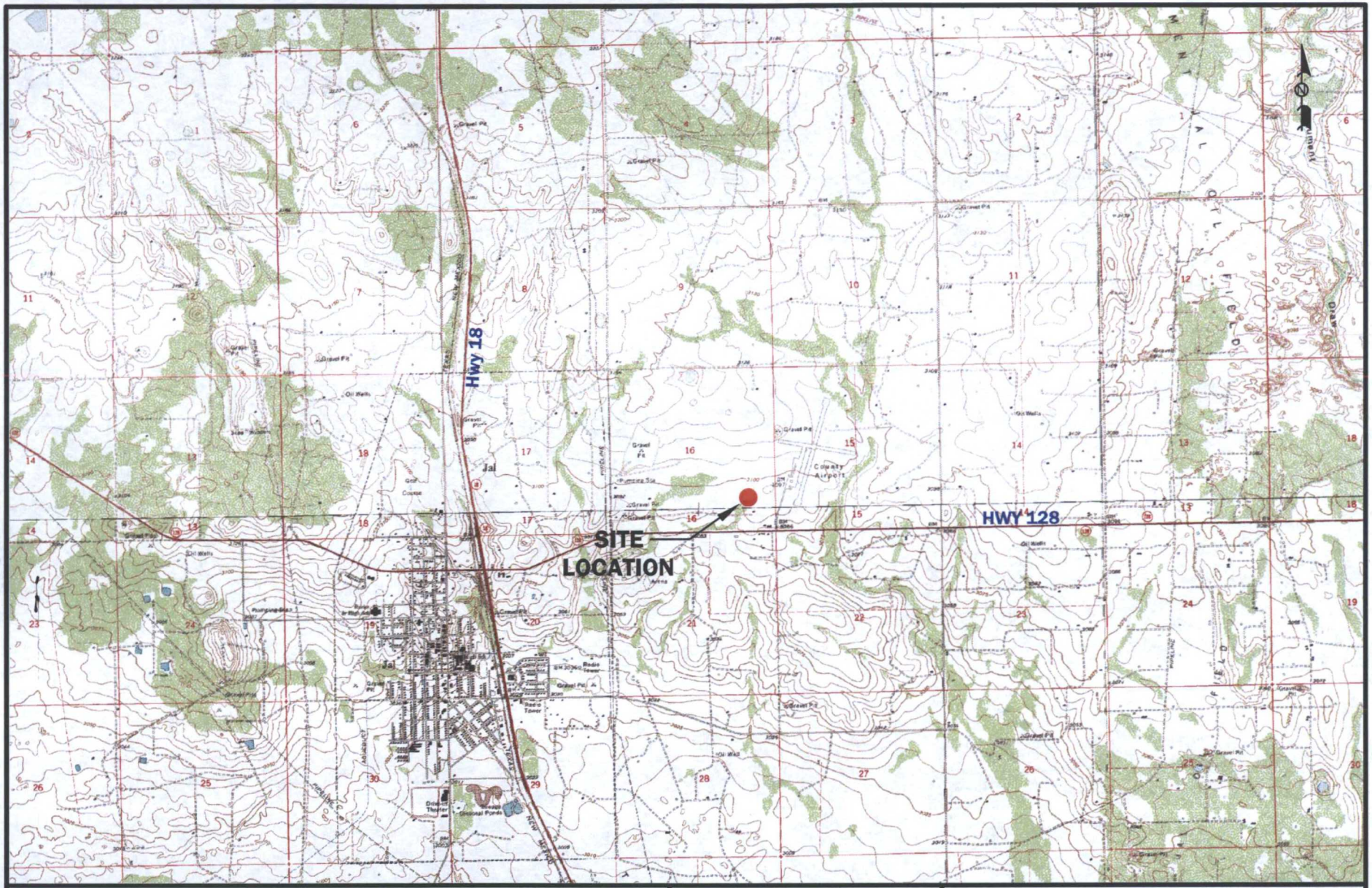
7.0 DISTRIBUTION:

Copy 1: Geoffrey Leking
New Mexico Energy, Minerals and Natural Resources Department
Oil Conservation Division (District 1)
1625 French Drive
Hobbs, New Mexico 88240

Copy 2: New Mexico State Land Office
P.O Box 1148
Santa Fe, New Mexico 87504-1148

Copy 3: Rose Slade
Southern Union Gas Services
801 South Loop 464
Monahans, Texas 79756

Copy 4: Nova Safety & Environmental
2057 Commerce Street
Midland, Texas 79703



LEGEND:

2000 1000 0 1000 2000

Distance in Feet

Figure 1

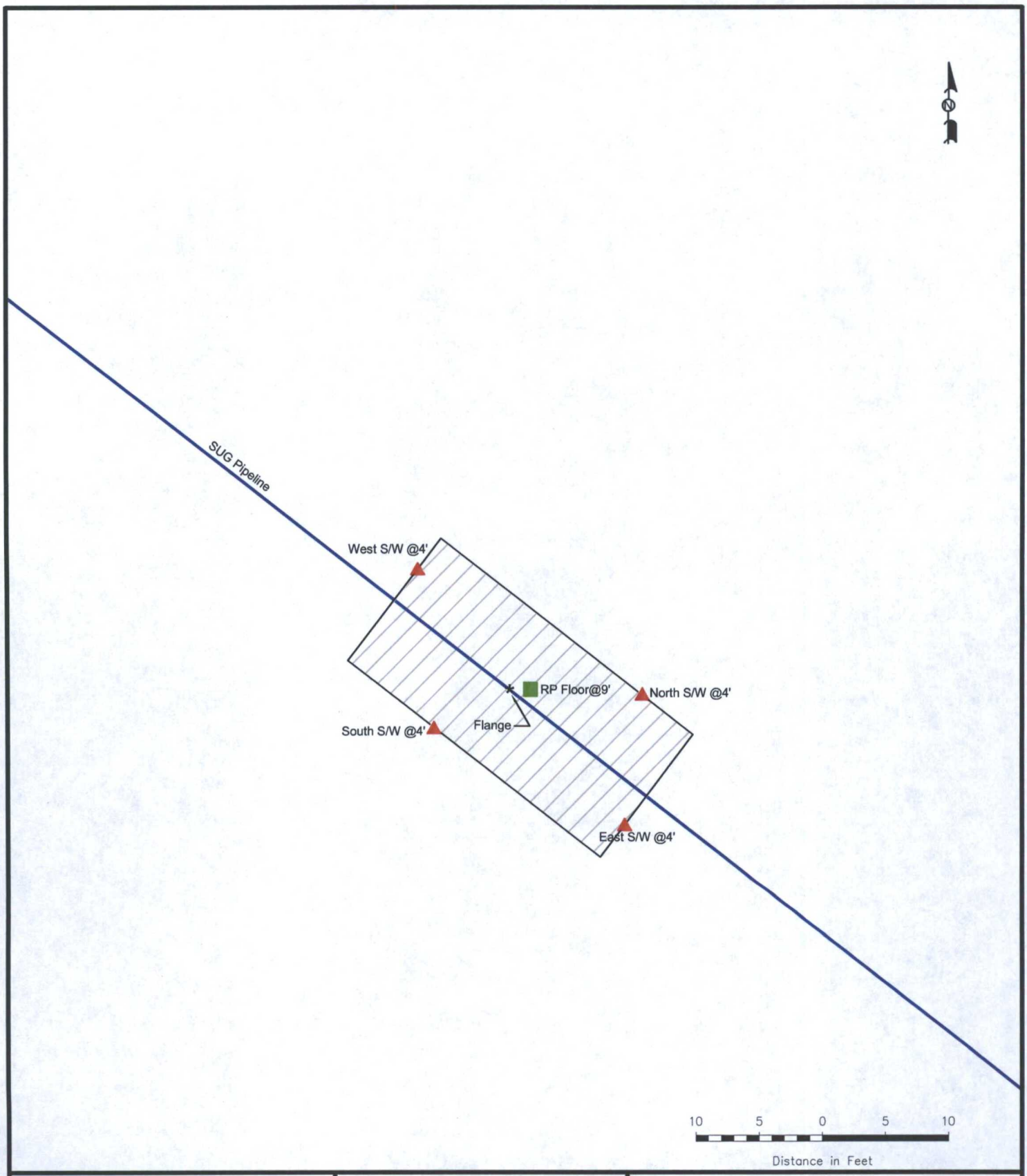
Site Location Map
Southern Union Gas Services
Trunk MB-1
Lea County, NM

NOVA safety and environmental

2057 Commerce Drive
Midland, Texas 79703
432.520.7720

www.novasafetyandenvironmental.com

September 28, 2012	Scale: 1" = 2000'	CAD By: TA	Checked By: CJB
Lat. N 32° 7' 31.56"	Long. W 103° 9' 41.70"		



LEGEND:

- Sidewall Soil Sample Location
- Pipeline
- Floor Soil Sample Location

Figure 2

Site Map
Southern Union Gas Services
Trunk MB-1
Lea County, NM

NOVA safety and environmental
2057 Commerce Drive
Midland, Texas 79703
432.520.7720
www.novasafetyandenvironmental.com

November 28, 2012	Scale: 1" = 10'	CAD By: TA	Checked By: CJB
Lat. N 32° 7.526' Long. W 103° 9.695'			1RP-1848

TABLE 1

CONCENTRATIONS OF BTEX, TPH AND CHLORIDE IN SOIL

SOUTHERN UNION GAS SERVICES
TRUNK MB-1 HISTORICAL RELEASE SITE
LEA COUNTY, NEW MEXICO
NMOCD Ref# 1RP-1848

All concentrations are reported in mg/Kg

SAMPLE LOCATION	SAMPLE DATE	METHODS: SW 846-8021b						METHOD: SW 8015M				E 300.1
		BENZENE	TOLUENE	ETHYL-BENZENE	m, p - XYLENES	o - XYLENE	TOTAL BTEX	TPH GRO C_6-C_{12}	TPH DRO C_{12}-C_{28}	TPH ORO C_{28}-C_{35}	TOTAL TPH C_6-C_{35}	CHLORIDE
RP Floor @ 9'	11/15/12	<0.00100	<0.00200	<0.00100	<0.00200	<0.00100	<0.00200	<28.4	<28.4	<28.4	<28.4	99.7
North S/W @ 4'	11/15/12	<0.00100	<0.00200	<0.00100	<0.00200	<0.00100	<0.00200	<28.1	<28.1	<28.1	<28.1	12.1
West S/W @ 4'	11/15/12	<0.00100	<0.00200	<0.00100	<0.00200	<0.00100	<0.00200	<28.7	<28.7	<28.7	<28.7	54.5
East S/W @ 4'	11/15/12	<0.00100	<0.00200	<0.00100	<0.00200	<0.00100	<0.00200	<29.1	<29.1	<29.1	<29.1	136
South S/W @ 4'	11/15/12	<0.00100	<0.00200	<0.00100	<0.00200	<0.00100	<0.00200	<29.1	<29.1	<29.1	<29.1	36
SP-1	11/15/12	<0.00100	<0.00200	<0.00100	<0.00200	<0.00100	<0.00200	<27.5	<27.5	<27.5	<27.5	7.31

Nova Safety & Environment
2057 Commerce
Midland TX, 79703

Project: SUG Historical Trunk MB-1 1RP-1848
Project Number: 1RP-1848
Project Manager: Camille Bryant

Fax: (432) 520-7701

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
RP Floor @ 9 ft	2K20002-01	Soil	11/15/12 14:00	11-20-2012 08:00
North S/W @4 ft	2K20002-02	Soil	11/16/12 09:30	11-20-2012 08:00
West S/W @ 4ft	2K20002-03	Soil	11/16/12 10:00	11-20-2012 08:00
East S/W @ 4 ft	2K20002-04	Soil	11/16/12 11:00	11-20-2012 08:00
South S/W @ 4 ft	2K20002-05	Soil	11/16/12 11:20	11-20-2012 08:00
SP-1	2K20002-06	Soil	11/16/12 11:45	11-20-2012 08:00

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RP Floor @ 9 ft

2K20002-01 (Soil)

Permian Basin Environmental Lab

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Organics by GC									
Benzene	ND	0.00100	mg/kg dry	1	EK22607	11/21/12	11/21/12	EPA 8021B	
Toluene	ND	0.00200	mg/kg dry	1	EK22607	11/21/12	11/21/12	EPA 8021B	
Ethylbenzene	ND	0.00100	mg/kg dry	1	EK22607	11/21/12	11/21/12	EPA 8021B	
Xylene (p/m)	ND	0.00200	mg/kg dry	1	EK22607	11/21/12	11/21/12	EPA 8021B	
Xylene (o)	ND	0.00100	mg/kg dry	1	EK22607	11/21/12	11/21/12	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		*110 %*	*75-125*		*EK22607*	*11/21/12*	*11/21/12*	*EPA 8021B*	
Surrogate: 4-Bromofluorobenzene		*102 %*	*75-125*		*EK22607*	*11/21/12*	*11/21/12*	*EPA 8021B*	
General Chemistry Parameters by EPA / Standard Methods									
Chloride	**99.7**	5.68	mg/kg dry	5	EK22702	11/27/12	11/27/12	EPA 300.0	
% Moisture	**12.0**	0.1	%	1	EK22605	11/21/12	11/26/12	% calculation	
Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M									
C6-C12	ND	28.4	mg/kg dry	1	EK22609	11/21/12	11/22/12	8015M	
>C12-C28	ND	28.4	mg/kg dry	1	EK22609	11/21/12	11/22/12	8015M	
>C28-C35	ND	28.4	mg/kg dry	1	EK22609	11/21/12	11/22/12	8015M	
Surrogate: 1-Chlorooctane		*110 %*	*70-130*		*EK22609*	*11/21/12*	*11/22/12*	*8015M*	
Surrogate: o-Terphenyl		*117 %*	*70-130*		*EK22609*	*11/21/12*	*11/22/12*	*8015M*	
Total Hydrocarbon nC6-nC35	ND	25.0	mg/kg dry	1	[CALC]	11/21/12	11/22/12	8015M	

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North S/W @4 ft

2K20002-02 (Soil)

Permian Basin Environmental Lab

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Organics by GC									
Benzene	ND	0.00100	mg/kg dry	1	EK22701	11/26/12	11/26/12	EPA 8021B	
Toluene	ND	0.00200	mg/kg dry	1	EK22701	11/26/12	11/26/12	EPA 8021B	
Ethylbenzene	ND	0.00100	mg/kg dry	1	EK22701	11/26/12	11/26/12	EPA 8021B	
Xylene (p/m)	ND	0.00200	mg/kg dry	1	EK22701	11/26/12	11/26/12	EPA 8021B	
Xylene (o)	ND	0.00100	mg/kg dry	1	EK22701	11/26/12	11/26/12	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		*107 %*	*75-125*		*EK22701*	*11/26/12*	*11/26/12*	*EPA 8021B*	
Surrogate: 4-Bromofluorobenzene		*85.6 %*	*75-125*		*EK22701*	*11/26/12*	*11/26/12*	*EPA 8021B*	
General Chemistry Parameters by EPA / Standard Methods									
Chloride	**12.1**	1.12	mg/kg dry	1	EK22702	11/27/12	11/27/12	EPA 300.0	
% Moisture	**11.0**	0.1	%	1	EK22605	11/21/12	11/26/12	% calculation	
Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M									
C6-C12	ND	28.1	mg/kg dry	1	EK22609	11/21/12	11/22/12	8015M	
>C12-C28	ND	28.1	mg/kg dry	1	EK22609	11/21/12	11/22/12	8015M	
>C28-C35	ND	28.1	mg/kg dry	1	EK22609	11/21/12	11/22/12	8015M	
Surrogate: 1-Chlorooctane		*99.4 %*	*70-130*		*EK22609*	*11/21/12*	*11/22/12*	*8015M*	
Surrogate: o-Terphenyl		*106 %*	*70-130*		*EK22609*	*11/21/12*	*11/22/12*	*8015M*	
Total Hydrocarbon nC6-nC35	ND	25.0	mg/kg dry	1	[CALC]	11/21/12	11/22/12	8015M	

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West S/W @ 4ft

2K20002-03 (Soil)

Permian Basin Environmental Lab

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Organics by GC									
Benzene	ND	0.00100	mg/kg dry	1	EK22607	11/21/12	11/21/12	EPA 8021B	
Toluene	ND	0.00200	mg/kg dry	1	EK22607	11/21/12	11/21/12	EPA 8021B	
Ethylbenzene	ND	0.00100	mg/kg dry	1	EK22607	11/21/12	11/21/12	EPA 8021B	
Xylene (p/m)	ND	0.00200	mg/kg dry	1	EK22607	11/21/12	11/21/12	EPA 8021B	
Xylene (o)	ND	0.00100	mg/kg dry	1	EK22607	11/21/12	11/21/12	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		*108 %*	*75-125*		*EK22607*	*11/21/12*	*11/21/12*	*EPA 8021B*	
Surrogate: 4-Bromofluorobenzene		*101 %*	*75-125*		*EK22607*	*11/21/12*	*11/21/12*	*EPA 8021B*	
General Chemistry Parameters by EPA / Standard Methods									
Chloride	**54.5**	5.75	mg/kg dry	5	EK22702	11/27/12	11/27/12	EPA 300.0	
% Moisture	**13.0**	0.1	%	1	EK22605	11/21/12	11/26/12	% calculation	
Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M									
C6-C12	ND	28.7	mg/kg dry	1	EK22609	11/21/12	11/26/12	8015M	
>C12-C28	ND	28.7	mg/kg dry	1	EK22609	11/21/12	11/26/12	8015M	
>C28-C35	ND	28.7	mg/kg dry	1	EK22609	11/21/12	11/26/12	8015M	
Surrogate: 1-Chlorooctane		*128 %*	*70-130*		*EK22609*	*11/21/12*	*11/26/12*	*8015M*	
Surrogate: o-Terphenyl		*130 %*	*70-130*		*EK22609*	*11/21/12*	*11/26/12*	*8015M*	
Total Hydrocarbon nC6-nC35	ND	25.0	mg/kg dry	1	[CALC]	11/21/12	11/26/12	8015M	

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2057 Commerce	Project Number: 1RP-1848	
Midland TX, 79703	Project Manager: Camille Bryant	

East S/W @ 4 ft

2K20002-04 (Soil)

Permian Basin Environmental Lab

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Organics by GC									
Benzene	ND	0.00100	mg/kg dry	1	EK22607	11/21/12	11/21/12	EPA 8021B	
Toluene	ND	0.00200	mg/kg dry	1	EK22607	11/21/12	11/21/12	EPA 8021B	
Ethylbenzene	ND	0.00100	mg/kg dry	1	EK22607	11/21/12	11/21/12	EPA 8021B	
Xylene (p/m)	ND	0.00200	mg/kg dry	1	EK22607	11/21/12	11/21/12	EPA 8021B	
Xylene (o)	ND	0.00100	mg/kg dry	1	EK22607	11/21/12	11/21/12	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		*109 %*	*75-125*		*EK22607*	*11/21/12*	*11/21/12*	*EPA 8021B*	
Surrogate: 4-Bromofluorobenzene		*99.4 %*	*75-125*		*EK22607*	*11/21/12*	*11/21/12*	*EPA 8021B*	
General Chemistry Parameters by EPA / Standard Methods									
Chloride	**136**	1.16	mg/kg dry	1	EK22702	11/27/12	11/27/12	EPA 300.0	
% Moisture	**14.0**	0.1	%	1	EK22605	11/21/12	11/26/12	% calculation	
Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M									
C6-C12	ND	29.1	mg/kg dry	1	EK22609	11/21/12	11/26/12	8015M	
>C12-C28	ND	29.1	mg/kg dry	1	EK22609	11/21/12	11/26/12	8015M	
>C28-C35	ND	29.1	mg/kg dry	1	EK22609	11/21/12	11/26/12	8015M	
Surrogate: 1-Chlorooctane		*146 %*	*70-130*		*EK22609*	*11/21/12*	*11/26/12*	*8015M*	*S-GC*
Surrogate: o-Terphenyl		*119 %*	*70-130*		*EK22609*	*11/21/12*	*11/26/12*	*8015M*	
Total Hydrocarbon nC6-nC35	ND	25.0	mg/kg dry	1	[CALC]	11/21/12	11/26/12	8015M	

Nova Safety & Environment	Project: SUG Historical Trunk MB-1 1RP-1848	Fax: (432) 520-7701
2057 Commerce	Project Number: 1RP-1848	
Midland TX, 79703	Project Manager: Camille Bryant	

South S/W @ 4 ft

2K20002-05 (Soil)

Permian Basin Environmental Lab

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Organics by GC									
Benzene	ND	0.00100	mg/kg dry	1	EK22607	11/21/12	11/21/12	EPA 8021B	
Toluene	ND	0.00200	mg/kg dry	1	EK22607	11/21/12	11/21/12	EPA 8021B	
Ethylbenzene	ND	0.00100	mg/kg dry	1	EK22607	11/21/12	11/21/12	EPA 8021B	
Xylene (p/m)	ND	0.00200	mg/kg dry	1	EK22607	11/21/12	11/21/12	EPA 8021B	
Xylene (o)	ND	0.00100	mg/kg dry	1	EK22607	11/21/12	11/21/12	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		*110 %*	*75-125*		*EK22607*	*11/21/12*	*11/21/12*	*EPA 8021B*	
Surrogate: 4-Bromofluorobenzene		*102 %*	*75-125*		*EK22607*	*11/21/12*	*11/21/12*	*EPA 8021B*	
General Chemistry Parameters by EPA / Standard Methods									
Chloride	**36.0**	2.91	mg/kg dry	2.5	EK22702	11/27/12	11/27/12	EPA 300.0	
% Moisture	**14.0**	0.1	%	1	EK22605	11/21/12	11/26/12	% calculation	
Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M									
C6-C12	ND	29.1	mg/kg dry	1	EK22609	11/21/12	11/22/12	8015M	
>C12-C28	ND	29.1	mg/kg dry	1	EK22609	11/21/12	11/22/12	8015M	
>C28-C35	ND	29.1	mg/kg dry	1	EK22609	11/21/12	11/22/12	8015M	
Surrogate: 1-Chlorooctane		*109 %*	*70-130*		*EK22609*	*11/21/12*	*11/22/12*	*8015M*	
Surrogate: o-Terphenyl		*116 %*	*70-130*		*EK22609*	*11/21/12*	*11/22/12*	*8015M*	
Total Hydrocarbon nC6-nC35	ND	25.0	mg/kg dry	1	[CALC]	11/21/12	11/22/12	8015M	

Nova Safety & Environment	Project: SUG Historical Trunk MB-1 1RP-1848	Fax: (432) 520-7701
2057 Commerce	Project Number: 1RP-1848	
Midland TX, 79703	Project Manager: Camille Bryant	

SP-1

2K20002-06 (Soil)

Permian Basin Environmental Lab

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Organics by GC									
Benzene	ND	0.00100	mg/kg dry	1	EK22701	11/26/12	11/26/12	EPA 8021B	
Toluene	ND	0.00200	mg/kg dry	1	EK22701	11/26/12	11/26/12	EPA 8021B	
Ethylbenzene	ND	0.00100	mg/kg dry	1	EK22701	11/26/12	11/26/12	EPA 8021B	
Xylene (p/m)	ND	0.00200	mg/kg dry	1	EK22701	11/26/12	11/26/12	EPA 8021B	
Xylene (o)	ND	0.00100	mg/kg dry	1	EK22701	11/26/12	11/26/12	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		*107 %*	*75-125*		*EK22701*	*11/26/12*	*11/26/12*	*EPA 8021B*	
Surrogate: 4-Bromofluorobenzene		*100 %*	*75-125*		*EK22701*	*11/26/12*	*11/26/12*	*EPA 8021B*	
General Chemistry Parameters by EPA / Standard Methods									
Chloride	**7.31**	1.10	mg/kg dry	1	EK22702	11/27/12	11/27/12	EPA 300.0	
% Moisture	**9.0**	0.1	%	1	EK22605	11/21/12	11/26/12	% calculation	
Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M									
C6-C12	ND	27.5	mg/kg dry	1	EK22609	11/21/12	11/26/12	8015M	
>C12-C28	ND	27.5	mg/kg dry	1	EK22609	11/21/12	11/26/12	8015M	
>C28-C35	ND	27.5	mg/kg dry	1	EK22609	11/21/12	11/26/12	8015M	
Surrogate: 1-Chlorooctane		*140 %*	*70-130*		*EK22609*	*11/21/12*	*11/26/12*	*8015M*	*S-GC*
Surrogate: o-Terphenyl		*122 %*	*70-130*		*EK22609*	*11/21/12*	*11/26/12*	*8015M*	
Total Hydrocarbon nC6-nC35	ND	25.0	mg/kg dry	1	[CALC]	11/21/12	11/26/12	8015M	

Nova Safety & Environment
2057 Commerce
Midland TX, 79703

Project: SUG Historical Trunk MB-1 1RP-1848
Project Number: 1RP-1848
Project Manager: Camille Bryant

Fax: (432) 520-7701

Organics by GC - Quality Control

Permian Basin Environmental Lab

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EK22607 - General Preparation (GC)										
Blank (EK22607-BLK1)				Prepared & Analyzed: 11/21/12						
Benzene	ND	0.00100	mg/kg wet							
Toluene	ND	0.00200	"							
Ethylbenzene	ND	0.00100	"							
Xylene (p/m)	ND	0.00200	"							
Xylene (o)	ND	0.00100	"							
Surrogate: 1,4-Difluorobenzene	*66.3*		*ug/kg*	*60.0*		*110*	*75-125*			
Surrogate: 4-Bromofluorobenzene	*62.6*		*"*	*60.0*		*104*	*75-125*			
LCS (EK22607-BS1)				Prepared & Analyzed: 11/21/12						
Benzene	0.0885	0.00100	mg/kg wet	0.100		88.5	80-120			
Toluene	0.116	0.00200	"	0.100		116	80-120			
Ethylbenzene	0.115	0.00100	"	0.100		115	80-120			
Xylene (p/m)	0.238	0.00200	"	0.200		119	80-120			
Xylene (o)	0.111	0.00100	"	0.100		111	80-120			
Surrogate: 1,4-Difluorobenzene	*65.8*		*ug/kg*	*60.0*		*110*	*75-125*			
Surrogate: 4-Bromofluorobenzene	*68.4*		*"*	*60.0*		*114*	*75-125*			
LCS Dup (EK22607-BSD1)				Prepared & Analyzed: 11/21/12						
Benzene	0.0866	0.00100	mg/kg wet	0.100		86.6	80-120	2.22	20	
Toluene	0.110	0.00200	"	0.100		110	80-120	5.24	20	
Ethylbenzene	0.109	0.00100	"	0.100		109	80-120	4.92	20	
Xylene (p/m)	0.227	0.00200	"	0.200		114	80-120	4.76	20	
Xylene (o)	0.105	0.00100	"	0.100		105	80-120	5.59	20	
Surrogate: 1,4-Difluorobenzene	*65.8*		*ug/kg*	*60.0*		*110*	*75-125*			
Surrogate: 4-Bromofluorobenzene	*65.3*		*"*	*60.0*		*109*	*75-125*			
Matrix Spike (EK22607-MS1)	**Source: 2K20001-10**			Prepared & Analyzed: 11/21/12						
Benzene	0.0773	0.00100	mg/kg dry	0.109	ND	71.1	80-120			QM-05
Toluene	0.0962	0.00200	"	0.109	ND	88.5	80-120			
Ethylbenzene	0.0962	0.00100	"	0.109	ND	88.5	80-120			
Xylene (p/m)	0.198	0.00200	"	0.217	ND	91.1	80-120			
Xylene (o)	0.0927	0.00100	"	0.109	ND	85.2	80-120			
Surrogate: 1,4-Difluorobenzene	*66.5*		*ug/kg*	*60.0*		*111*	*75-125*			
Surrogate: 4-Bromofluorobenzene	*64.8*		*"*	*60.0*		*108*	*75-125*			

Organics by GC - Quality Control

Permian Basin Environmental Lab

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EK22701 - General Preparation (GC)										
Blank (EK22701-BLK1)				Prepared & Analyzed: 11/26/12						
Benzene	ND	0.00100	mg/kg wet							
Toluene	ND	0.00200	"							
Ethylbenzene	ND	0.00100	"							
Xylene (p/m)	ND	0.00200	"							
Xylene (o)	ND	0.00100	"							
Surrogate: 1,4-Difluorobenzene	*63.1*		*ug/kg*	*60.0*		*105*	*75-125*			
Surrogate: 4-Bromofluorobenzene	*63.3*		*"*	*60.0*		*106*	*75-125*			
LCS (EK22701-BS1)				Prepared & Analyzed: 11/26/12						
Benzene	0.0807	0.00100	mg/kg wet	0.100		80.7	80-120			
Toluene	0.106	0.00200	"	0.100		106	80-120			
Ethylbenzene	0.109	0.00100	"	0.100		109	80-120			
Xylene (p/m)	0.226	0.00200	"	0.200		113	80-120			
Xylene (o)	0.106	0.00100	"	0.100		106	80-120			
Surrogate: 1,4-Difluorobenzene	*64.0*		*ug/kg*	*60.0*		*107*	*75-125*			
Surrogate: 4-Bromofluorobenzene	*68.5*		*"*	*60.0*		*114*	*75-125*			
LCS Dup (EK22701-BSD1)				Prepared & Analyzed: 11/26/12						
Benzene	0.0816	0.00100	mg/kg wet	0.100		81.6	80-120	1.15	20	
Toluene	0.105	0.00200	"	0.100		105	80-120	1.20	20	
Ethylbenzene	0.107	0.00100	"	0.100		107	80-120	1.19	20	
Xylene (p/m)	0.223	0.00200	"	0.200		112	80-120	1.34	20	
Xylene (o)	0.104	0.00100	"	0.100		104	80-120	1.34	20	
Surrogate: 1,4-Difluorobenzene	*64.4*		*ug/kg*	*60.0*		*107*	*75-125*			
Surrogate: 4-Bromofluorobenzene	*66.6*		*"*	*60.0*		*111*	*75-125*			
Matrix Spike (EK22701-MS1)	**Source: 2K20001-03**			Prepared & Analyzed: 11/26/12						
Benzene	0.0652	0.00100	mg/kg dry	0.102	ND	63.9	80-120			QM-05
Toluene	0.0868	0.00200	"	0.102	ND	85.1	80-120			
Ethylbenzene	0.0900	0.00100	"	0.102	ND	88.2	80-120			
Xylene (p/m)	0.187	0.00200	"	0.204	ND	91.7	80-120			
Xylene (o)	0.0885	0.00100	"	0.102	ND	86.8	80-120			
Surrogate: 1,4-Difluorobenzene	*64.2*		*ug/kg*	*60.0*		*107*	*75-125*			
Surrogate: 4-Bromofluorobenzene	*67.2*		*"*	*60.0*		*112*	*75-125*			

Nova Safety & Environment	Project: SUG Historical Trunk MB-1 1RP-1848	Fax: (432) 520-7701
2057 Commerce	Project Number: 1RP-1848	
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General Chemistry Parameters by EPA / Standard Methods - Quality Control

Permian Basin Environmental Lab

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EK22605 - * DEFAULT PREP *** **										
Blank (EK22605-BLK1)				Prepared: 11/21/12 Analyzed: 11/26/12						
% Moisture	ND	0.1	%							
Duplicate (EK22605-DUP1)		Source: 2K19001-01		Prepared: 11/21/12 Analyzed: 11/26/12						
% Moisture	3.0	0.1	%		4.0			28.6	20	R2
Batch EK22702 - * DEFAULT PREP *** **										
Blank (EK22702-BLK1)				Prepared & Analyzed: 11/27/12						
Chloride	ND	1.00	mg/kg wet							
LCS (EK22702-BS1)				Prepared & Analyzed: 11/27/12						
Chloride	11.1		mg/kg Wet	10.0		111	80-120			
LCS Dup (EK22702-BSD1)				Prepared & Analyzed: 11/27/12						
Chloride	11.1		mg/kg Wet	10.0		111	80-120	0.325	20	
Duplicate (EK22702-DUP1)		Source: 2K20001-01		Prepared & Analyzed: 11/27/12						
Chloride	12.0	1.01	mg/kg dry		11.6			3.51	20	
Matrix Spike (EK22702-MS1)		Source: 2K20001-01		Prepared & Analyzed: 11/27/12						
Chloride	105	1.01	mg/kg dry	88.4	11.6	106	80-120			
Matrix Spike (EK22702-MS2)		Source: 2K20002-01		Prepared & Analyzed: 11/27/12						
Chloride	406	5.68	mg/kg dry	284	99.7	108	80-120			

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Midland TX, 79703

Project: SUG Historical Trunk MB-1 1RP-1848
Project Number: 1RP-1848
Project Manager: Camille Bryant

Fax: (432) 520-7701

Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M - Quality Control

Permian Basin Environmental Lab

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EK22609 - 8015M										
Blank (EK22609-BLK1)				Prepared & Analyzed: 11/21/12						
C6-C12	ND	25.0	mg/kg wet							
>C12-C28	ND	25.0	"							
>C28-C35	ND	25.0	"							
Surrogate: 1-Chlorooctane	*198*		"	*200*		*99.2*	*70-130*			
Surrogate: o-Terphenyl	*107*		"	*100*		*107*	*70-130*			
LCS (EK22609-BS1)				Prepared & Analyzed: 11/21/12						
C6-C12	925	25.0	mg/kg wet	1000		92.5	75-125			
>C12-C28	908	25.0	"	1000		90.8	75-125			
>C28-C35	ND	25.0	"	0.00			75-125			
Surrogate: 1-Chlorooctane	*219*		"	*200*		*109*	*70-130*			
Surrogate: o-Terphenyl	*105*		"	*100*		*105*	*70-130*			
LCS Dup (EK22609-BSD1)				Prepared & Analyzed: 11/21/12						
C6-C12	831	25.0	mg/kg wet	1000		83.1	75-125	10.6	20	
>C12-C28	854	25.0	"	1000		85.4	75-125	6.14	20	
>C28-C35	ND	25.0	"	0.00			75-125		20	
Surrogate: 1-Chlorooctane	*191*		"	*200*		*95.4*	*70-130*			
Surrogate: o-Terphenyl	*92.1*		"	*100*		*92.1*	*70-130*			
Matrix Spike (EK22609-MS1)	**Source: 2K20001-10**			Prepared: 11/21/12 Analyzed: 11/22/12						
C6-C12	957	27.2	mg/kg dry	1090	ND	88.0	75-125			
>C12-C28	910	27.2	"	1090	47.2	79.4	75-125			
>C28-C35	ND	27.2	"	0.00	ND		75-125			
Surrogate: 1-Chlorooctane	*208*		"	*217*		*95.8*	*70-130*			
Surrogate: o-Terphenyl	*107*		"	*109*		*98.5*	*70-130*			
Matrix Spike Dup (EK22609-MSD1)	**Source: 2K20001-10**			Prepared: 11/21/12 Analyzed: 11/22/12						
C6-C12	972	27.2	mg/kg dry	1090	ND	89.4	75-125	1.55	20	
>C12-C28	942	27.2	"	1090	47.2	82.3	75-125	3.61	20	
>C28-C35	ND	27.2	"	0.00	ND		75-125		20	
Surrogate: 1-Chlorooctane	*216*		"	*217*		*99.2*	*70-130*			
Surrogate: o-Terphenyl	*103*		"	*109*		*94.5*	*70-130*			

Notes and Definitions

S-GC	Surrogate recovery outside of control limits. The data was accepted based on valid recovery of the remaining surrogate.
R2	The RPD exceeded the acceptance limit.
QM-05	The spike recovery was outside acceptance limits for the MS and/or MSD due to matrix interference. The LCS and/or LCSD were within acceptance limits showing that the laboratory is in control and the data is acceptable.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
LCS	Laboratory Control Spike
MS	Matrix Spike
Dup	Duplicate

Report Approved By: Brent Barron Date: 12/11/2012

Brent Barron, Laboratory Director/Technical Director

PBELAB

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

Permian Basin Environmental Lab, LP
10014 S. County Road 1213
Midland, Texas 79706

Phone: 432-661-4184

Project Manager: Camille Bryant
Company Name: NOVA Safety and Environmental
Company Address: 2057 Commerce
City/State/Zip: Midland, Texas 79703
Telephone No: 432.520.7720 Fax No: 432.520.7701
Sampler Signature:
e-mail: cbryant@novatraining.cc
rose.slade@sug.com

Project Name: SUG Historical Trunk MB-1 1RP-1848
Project #:
Project Loc: Lea County New Mexico
PO #:
Report Format: [x] Standard [ ] TRRP [ ] NPDES

(lab use only) ORDER #: 2K20002

LAB # (lab use only)	FIELD CODE	Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Field Filtered	Total # of Containers	Preservation & # of Containers: Ice	HNO_3	HCl	H_2SO_4	NaOH	$Na_2S_2O_3$	None	Other (Specify)	Matrix: DW=Drinking Water SL=Sludge GW = Groundwater S=Soil/Solid NP=Non-Potable Specify Other	Analyze For: TCLP: TPH: 418.1 8015M 8015B	TPH: TX 1005 TX 1006	Cations (Ca, Mg, Na, K)	Anions (Cl, SO4, Alkalinity)	SAR / ESP / CEC	Metals: As Ag Ba Cd Cr Pb Hg Se	Volatiles	Semivolatiles	TOTAL: BTEX 8021B/5030 or BTEX 8260	RCI	N.O.R.M.	(1,300)			RUSH TAT (Pre-Schedule) 24, 48, 72 hrs	Standard TAT
-01	RP Floor @ 9'			11/15/2012	14:00		1	X								Soil	X								X			X				X
-02	North S/W @ 4'			11/16/2012	9:30		1	X								Soil	X								X			X				X
-03	West S/W @ 4'			11/16/2012	10:00		1	X								Soil	X								X			X				X
-04	East S/W @ 4'			11/16/2012	11:00		1	X								Soil	X								X			X				X
-05	South S/W @ 4'			11/16/2012	11:20		1	X								Soil	X								X			X				X
-06	SP-1			11/16/2012	11:45		1	X								Soil	X								X			X				X

Special Instructions:

Relinquished by:	Date	Time	Received by:	Date	Time
Camille Bryant	11/20/12	0800			
Relinquished by:	Date	Time	Received by:	Date	Time
Relinquished by:	Date	Time	Received by RBEL:	Date	Time
				11/20/12	0800

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 Upon Receipt:
Received: 4.4 °C
Adjusted: 4.4 °C Factor NCP

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Photographic Documentation

Client: Southern Union Gas Services
Project Name: Trunk MB-1

Prepared by: NOVA
Location: Lea County, New Mexico

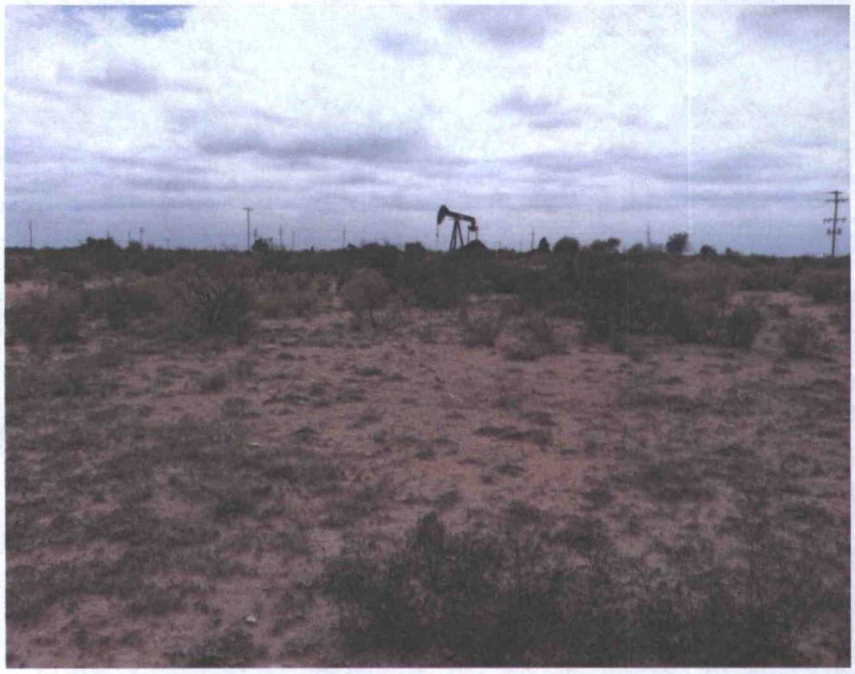
Photograph No. 1

Direction:
Facing Northwest

Description:
View of the initial release area.

Photograph No. 2

Direction:
Facing South



Description:
View of the initial release area.

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Photographic Documentation

Client: Southern Union Gas Services
Project Name: Trunk MB-1

Prepared by: NOVA
Location: Lea County, New Mexico

Photograph No. 3

Direction:
Facing Southeast

Description:
View of excavation activities along the SUGS pipeline.

Photograph No. 4

Direction:
Facing South

Description:
View of the trenched area with SUGS pipeline exposed.

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Photographic Documentation

Client: Southern Union Gas Services
Project Name: Trunk MB-1

Prepared by: NOVA
Location: Lea County, New Mexico

Photograph No. 5

Direction:
Facing Northwest

Description:
View of restored site.

Photograph No. 6

Direction:
Facing West

Description:
View of restored site.