PHASE II ENVIRONMENTAL SITE ASSESSMENT
CITY OF HOUSTON
NEIGHBORHOOD STREET
RECONSTRUCTION
PROJECT 456
WBS NO. N-000388-0001-3
HOUSTON, TEXAS

Reported to:

BURY-HOU, INC.

Houston, Texas

Submitted by:

GEOTEST ENGINEERING, INC.

Houston, Texas

REPORT NO. 1130020101

March 2, 2015

Key Map No. 449 T, U, X, Y & 489 B

GEOTEST ENGINEERING, INC.

Geotechnical Engineers & Materials Testing

5600 Bintliff Drive Houston, Texas 77036 Telephone: (713) 266-0588
Fax: (713) 266-2977

Report No. 1130020101
March 2, 2015

Ms. Hillary Passovoy, P.E.
Bury-Hou, Inc.
7660 Woodway Drive, Suite 400
Houston, Texas 77063

Reference: Phase II Environmental Site Assessment (ESA)
City of Houston Neighborhood Street
Reconstruction (NSR) Project 456
WBS No. N-000388-0001-3
Houston, Texas

Dear Ms. Passovoy:

We are pleased to submit the final Phase II Environmental Site Assessment report for the referenced project. A draft report was submitted to you on June 12, 2015. This final report supersedes all previously submitted reports, transmittals, etc. for the referenced project. This study was authorized by Agreement between Engineer and Consultant dated April 28, 2014 by accepting our proposal No. 1130030099 dated April 3, 2014.

We appreciate the opportunity to be of service to you. If we can be of further assistance, please call us.

Sincerely,
GEOTEST ENGINEERING, INC.
TBPE Registration No. F-410

K. Naresh

Naresh Kolli, P.E.
Assistant Project Manager

STATE OF TEXAS
3/2/15
NARESH KOLLI
110928
LICENSED
PROFESSIONAL ENGINEER

B. C.

Mohan Ballagere, P.E.
Vice President

STATE OF TEXAS
3/2/15
MOHAN BALLAGERE
87622
LICENSED
PROFESSIONAL ENGINEER

MB\ego
Copies submitted: (2+1-pdf)
PC38\Environmental\30020101F.DOC

TABLE OF CONTENTS

		Page
1.0	EXECUTIVE SUMMARY	1
2.0	INTRODUCTION	4
2.1	General	5
2.2	Objectives	5
2.3	Scope of the Study	5
2.4	Special Terms and Conditions	6
2.5	Limitations and Exceptions of Assessment	6
2.6	Limiting Conditions and Methodology Used	6
3.0	SUBSURFACE INVESTIGATION	7
3.1	Field Investigation Methodologies	7
3.2	Selected Sites	8
4.0	LABORATORY ANALYTICAL PROGRAM	9
4.1	Chemical Testing Plan	9
4.2	Sampling and Chemical Analyses and Methods	9
4.2.1	Soil	9
4.2.2	Groundwater	9
5.0	DATA EVALUATION	11
5.1	Subsurface Conditions	11
5.1.1	Geologic Setting	11
5.1.2	Hydrogeologic Conditions	11
5.1.3	Verification of Conceptual Site Model	11
5.2	Analytical Data	11
6.0	CONCLUSIONS	13
6.1	Summary of the Investigation Results	13
6.2	Impact on Planned Construction	13
7.0	REFERENCES	14

TABLES

	Table
Summary of Analytical Test Results (Soil)	1
Summary of Analytical Test Results (Water)	2

ILLUSTRATIONS

	Figure
Vicinity Map	1
Plan of Borings	2.1 and 2.2

APPENDICES

	Appendix
Log of Borings and Symbols Used	A
Laboratory Report with Quality Control Information	B
Photographs of Drilling Activities	C
Qualifications of Environmental Professional Participating in Phase II ESA	D

1.0 EXECUTIVE SUMMARY

A Phase II Environmental Site Assessment study was conducted for Bury-Hou, Inc. for the City of Houston Neighborhood Street Reconstruction (NSR) Project 456 in Houston, Texas. The project is comprised of approximately 15,580 Linear Feet (LF) of neighborhood street improvements along various streets with utilities replacement for NSR 456 project. The size and depth of utilities (storm, sanitary sewer and water line) are not known at this time, however, for budgetary purpose it is assumed that water line is about 5 feet deep, storm sewer is about 10 feet deep and sanitary sewer is maximum of about 15 feet deep. The proposed utilities construction is by open cut method. The proposed street improvements will be reconstruction of pavements to existing width with curb and gutter with concrete pavement and alternative option of flexible pavements.

As per the Phase I ESA study performed by Geotest Engineering, Inc., Report No. 1130017801 dated March 5, 2014; three (3) Recognized Environmental Conditions (REC) were identified along the Project Alignment. The RECs are listed below:

- Sams Mart 4/ Jewell Services Company – 10902 Shadow Wood Drive
- Brittmoore Automotive – 1641 Brittmoore Road
- Unknown Site – 10932 Hazelhurst Drive

This study was based on the ASTM guidelines for Phase II Environmental Site Assessment, designation ASTM E1903-11 and modified by City of Houston Department of Public Works and Engineering Design Manual, Chapter 11 – Geotechnical and Environmental Requirements Subsection, Phase II Environmental Requirements, dated July 1, 2012. This study included drilling and continuous sampling of six (6) environmental borings, each to a depth of 20 feet; screening each soil sample in the field for the presence of volatile compounds using Photo Ionization Detector (PID); developing 1-inch temporary wells for groundwater (if encountered) sampling and then plug and abandon; conducting analytical tests on soil and groundwater samples (if encountered) to evaluate the presence or absence of soil and/or groundwater contamination and preparation of a Phase II ESA report.

The principal findings and conclusions developed from this study are summarized below:

- The measured values of organic vapors in the field ranged from 0.0 ppm to 8.0 ppm.
- Six (6) soil samples with highest available PID readings from borings EB-1 through EB-6 and two (2) groundwater samples from borings EB-1 and EB-5 were tested for BTEX (Benzene, Toulene, Ethyl Benzene and Xylene)/MTBE (Methyl Tertiary Butyl Ether) and TPH (Total Petroleum Hydrocarbon).
- The result of the tests on soil samples indicated that the Chemicals of Concern (COC) – Toulene, Xylenes and MTBE were detected in boring EB-4 and COC - Toulene was detected in boring EB-6. The results of the tests on ground water samples indicated that COC - BTEX/MTBE were detected in boring EB-1 and COC - Toulene was detected in boring EB-5.

Hence, the planned street reconstruction and utilities replacement along the areas presented in the table below are identified as Potentially Petroleum Contaminated Area (PPCA).

Street Name	Station No.	
	From	To
Shadow Wood Drive	**153+74**	**155+79 (End)**
Hazelhurst Drive	**10+00**	**13+38**
Buescher Road	**207+00**	**207+70**

It is recommended that the Occupational Safety and Health Administration (OSHA) requirements (29 CFR 1926) and COH Guide Specifications 02105 and 02120 should be followed for workers safety during excavations and handling of the site soils in aforementioned area.

- Activities that related to excavation and handling of site soils are regulated under the OSHA Construction Standard 29 CFR 1910 Subpart H.

2.0 INTRODUCTION

2.1 General

A Phase II Environmental Site Assessment study was conducted for Bury-Hou, Inc. for the City of Houston Neighborhood Street Reconstruction (NSR) Project 456 in Houston, Texas. The project is comprised of approximately 15,580 Linear Feet (LF) of neighborhood street improvements along various streets with utilities replacement for NSR 456 project. The size and depth of utilities (storm, sanitary sewer and water line) are not known at this time, however, for budgetary purpose it is assumed that water line is about 5 feet deep, storm sewer is about 10 feet deep and sanitary sewer is maximum of about 15 feet deep. The proposed utilities construction is by open cut method. The proposed street improvements will be reconstruction of pavements to existing width with curb and gutter with concrete pavement and alternative option of flexible pavements. The Vicinity Map is shown on Figure 1.

In our previous study, "Phase I Environmental Site Assessment (ESA), for City of Houston Neighborhood Street Reconstruction (NSR) Project 456 in Houston, Texas, WBS No. N - 000388-0001-3," Geotest Report No. 1130017801 dated March 5, 2014 (Reference 1), one (1) Leaking Petroleum Storage Tank and two (2) Historic Auto Station sites along the proposed Project Alignment were identified as RECs. The sites are listed below.

- Sams Mart 4/ Jewell Services Company – 10902 Shadow Wood Drive
- Brittmoore Automotive – 1641 Brittmoore Road
- Unknown Site – 10932 Hazelhurst Drive

To evaluate the migration of the contaminants in soil and groundwater (if encountered) along the alignment in the Project Area, a Phase II Environmental Site Assessment was recommended.

This study was authorized by Agreement between Engineer and Consultant dated April 28, 2014 by accepting our proposal No. 1130030099 dated April 3, 2014.

2.2 Objectives

The objectives of this study are to evaluate the presence of soil and ground water (if encountered) contamination from the REC sites along the proposed Project Alignment and to identify the potential impacts on the proposed construction. This study was performed in general accordance with ASTM guidelines for Phase II Environmental Site Assessment, designation ASTM E1903-11 (Reference 2) and modified by City of Houston Department of Public Works and Engineering Infrastructure Design Manual, Chapter 11 – Geotechnical and Environmental Requirements Subsection, Phase II Environmental Requirements, dated July 1, 2012 (Reference 3).

2.3 Scope of the Study

The scope of work is generally based on the ASTM guidelines for Phase II Environmental Site Assessment, designation ASTM E1903-11 Standard. The scope consisted of the following:

- Drilled and continuously sampled six (6) environmental borings utilizing Geoprobe each to a depth of 20 feet;
- Screened each soil sample in the field for the presence of volatile compounds using a Photo Ionization Detector (PID);
- Developed 1-inch diameter temporary monitoring wells for groundwater sample, and then plug and abandon;
- Conducted analytical tests on six (6) soil samples and two (2) ground water samples;
- Prepared a Phase II environmental report documenting the field investigation and analytical test results in accordance with ASTM Practice E1903-11 as modified by City of Houston Infrastructure Design Manual, Chapter 11, and Environmental

Requirements Section 11.26.

2.4 Special Terms and Conditions

There were no special terms or conditions.

2.5 Limitations and Exceptions of Assessment

The scope of this Phase II ESA is limited to matters expressly described herein. In preparing this report, Geotest has relied upon the information derived from secondary sources. All recommendations, findings and conclusions stated in this report are based upon the facts and circumstances as they existed at the time this report was prepared (e.g., Federal, State and Local Laws, Rules, Regulations and other matters that Geotest deemed relevant). A change in any facts or circumstances upon which this report was based may affect the findings, conclusions and validity of our recommendations expressed herein.

The subsurface conditions described in this report and the results of analytical tests are based on six (6) completed borings drilled at specific locations. However, variation in soil conditions and level of contamination, if any, may occur between the completed borings. The depth of the groundwater level may vary with changes in environmental conditions such as frequency and magnitude of rainfall.

2.6 Limiting Conditions and Methodology Used

This Phase II ESA is limited to the data derived from the soil borings and the laboratory tests performed on the samples recovered from the project site. Following this section of the report, Section 3 provides a subsurface investigation; Section 4 describes the laboratory analytical program, Section 5 describes the data evaluation, Section 6 contains conclusions and Section 7 contains references.

3.0 SUBSURFACE INVESTIGATION

3.1 Field Investigation Methodologies

The field investigation methodology takes into consideration the potential distribution of contaminants with respect to the properties, behavior and transportation characteristics. The sampling plan was designed to provide for the collection of potentially contaminated environmental media, if they occur, at locations and depths where the highest concentrations are likely to occur.

These investigation methodologies were developed in general accordance with ASTM Standard D 5730: Guide to Site Characteristics for Environmental Purposes with Emphasis on Soil, Rock, The Vadose Zone and Groundwater (Reference 4).

Personal health and safety precautions were followed in accordance with applicable federal and state laws or local equivalents and any requirements imposed by the owner, occupant or field personnel.

No test pits were excavated as part of this Phase II ESA study.

The field investigation included drilling and continuously sampling of six (6) environmental borings (designated as EB-1 through EB-6) along the Project Alignment at the REC sites for this study. All the boring locations including the location of REC sites are shown in Plan of Borings, Figures 2.1 and 2.2.

In each boring, geoprobe tubes were pushed to collect samples. At the starting of each boring, all sampling tools were decontaminated with a phosphate-free Liquid-Nox detergent, followed by a Freon rinse and a final deionized water rinse to reduce possible sample cross-contamination. The sampling tools, however, were decontaminated after every sample recovery. After extrusion, the soil samples were placed in EPA-approved laboratory-provided glass jars. All samples were then placed in a cooler with ice.

Geotest's representative visually field-classified the recovered soil samples. Notations of soil type, color and odor, if present, were recorded on the soil boring logs. Soil classifications presented on the log of borings are based on visual field classification and have not been verified by geotechnical laboratory soil testing. All the borings were grouted with cement-bentonite grout at the end of drilling.

The environmental boring logs are presented on Figures A-1 through A-6 in Appendix A. A key to symbols and terms used on the boring logs is presented on Figure A-7 in Appendix A.

During the field investigation, field screening for organic vapor concentrations was performed on all soil samples recovered from the borings. The measurements were made in the field with a benzene-calibrated, HNU DL-101 Photo-Ionization Detector (PID) equipped with a 10.2 eV lamp. Results of the field PID screening are summarized as "Field Screening – Organic Vapor" on the boring logs presented on Figures A-1 through A-6 in Appendix A.

Groundwater was encountered during drilling at borings EB-1 and EB-5. A temporary monitoring well was installed in the borings and groundwater samples were collected from each of the borings for the study.

3.2 Selected Sites

In our previous study, "Phase I Environmental Site Assessment (ESA), for City of Houston Neighborhood Street Reconstruction (NSR) Project 456 in Houston, Texas, WBS No. N - 000388-0001-3," Geotest Report No. 1130017801 dated March 5, 2014 (Reference 1), one (1) Leaking Petroleum Storage Tank and two (2) Historic Auto Station sites along the proposed Project Alignment were identified as REC. The REC sites are listed below.

- Sams Mart 4/ Jewell Services Company – 10902 Shadow Wood Drive
- Brittmoore Automotive – 1641 Brittmoore Road
- Unknown Site – 10932 Hazelhurst Drive

4.0 LABORATORY ANALYTICAL PROGRAM

4.1 Chemical Testing Plan

All soil samples were screened in the field for organic vapors with a Photo-Ionization Detector (PID). Six (6) soil samples with the highest PID readings and two (2) ground water samples were selected for the analytical testing. The analytical testing includes BTEX (Benzene, Toulene, Ethyl Benzene and Xylene)/MTBE (Methyl Tertiary Butyl Ether) and TPH (Total Petroleum Hydrocarbon).

4.2 Sampling and Chemical Analyses and Methods

4.2.1 Soil. Soil samples were obtained by pushing a geoprobe tube. After extrusion, the soil samples were collected and placed in EPA-approved laboratory-provided glass jars and then placed in a portable ice cooler with ice. Based on the field screening for organic vapor, one soil sample from each boring with highest PID reading or near invert depth whichever is applicable was selected for analytical testing. The samples selected for analytical testing are given below.

Boring No.	Sample No	Depth, ft
EB-1	S-9	16-18
EB-2	S-6	10-12
EB-3	S-6	10-12
EB-4	S-9	16-18
EB-5	S-10	18-20
EB-6	S-4	6-8

4.2.2 Groundwater. The groundwater samples collected from borings EB-1 and EB-5 were selected for analytical tests.

The analytical tests and corresponding test methods are listed below.

- BTEX/MTBE (SW 8260)
- TPH (TX 1005)

The samples were transported along with the chain-of-custody documentation to XENCO Laboratories in Houston, Texas for analytical testing.

5.0 DATA EVALUATION

5.1 Subsurface Conditions

5.1.1 Geologic Setting. Based on the Geologic Atlas of Texas - Houston Sheet, the project area is in the Beaumont Formation. The clays and sands of this formation are over consolidated as a result of desiccation or frequent raising and lowering of the sea level and subsequently the groundwater table. Consequently, clays of this formation have moderate to high shear strength and relatively low compressibility. Sands of the Beaumont Formation are typically very fine and often silty. Further there is evidence in the Houston area of the occurrence of cemented material (sandstone and siltstone) deposits within the Beaumont Formation.

5.1.2 Hydrogeologic Conditions. There are three major water-producing components in the region; Chicot (shallowest), Evangeline and Jasper (deepest) aquifers. The Chicot and Evangeline aquifers have base altitudes as deep as 600 and 1,500 feet below mean sea level, respectively. Most of the groundwater usage in the region is supplied by the Chicot and Evangeline aquifers. The permeability of the subsurface soils ranges from low permeable sandy lean clay and lean clay to very low permeable fat clay. The general groundwater flow in the area is typically from northwest to southeast.

5.1.3 Verification of Conceptual Site Model. The conceptual site model and sampling plan developed for the site were verified during the Phase II ESA assessment activities. The Quality Assurance (QA)/Quality Control (QC) procedures described in the chemical testing plan were adequate to verify the data acceptability.

5.2 Analytical Data

The analytical tests on soil samples indicated that the COCs – Toulene, Xylenes and MTBE were detected in boring EB-4 and COC - Toulene was detected in boring EB-6. The results of the tests on groundwater samples indicated that COC - BTEX/MTBE were detected in boring EB-1 and COC - Toulene was detected in boring EB-5. The summary of analytical test results in comparison to the TIER 1 PCLs are presented in Table 1 (soil samples) and Table 2

(groundwater samples).

Soil and groundwater contamination levels were compared to regulatory guidance document TCEQ RG-366/ TRRP-23 (Texas Risk Remediation Program)/ TIER1 PCLs (Protective Concentration Levels) for residential guidelines using 0.5-acre source area and $^{GW}soil_{ing}$ exposure pathway (Reference 5) revised on June 29, 2012. Based on the results of the analytical tests, COCs detected were below the TIER1 PCLs. The details of analytical test results are presented in Appendix B.

6.0 CONCLUSIONS

6.1 Summary of the Investigation Results

The measured values of organic vapor for the soil samples in the field ranged from 0.0 to 8.0 ppm.

The Analytical testing results on soil samples indicated that the COC – Toulene, Xylenes and MTBE in boring EB-4 and COC - Toulene in boring EB-6. The groundwater samples detected COC - BTEX/MTBE in boring EB-1 and COC - Toulene in boring EB-5.

6.2 Impact on Planned Construction

The planned street reconstruction and utilities replacement along the areas presented in the table below are identified as Potentially Petroleum Contaminated Area (PPCA).

Street Name	Station No.	
	From	To
Shadow Wood Drive	**153+74**	**155+79 (End)**
Hazelhurst Drive	**10+00**	**13+38**
Buescher Road	**207+00**	**207+70**

It is recommended that the Occupational Safety and Health Administration (OSHA) requirements (29 CFR 1926) and COH Guide Specifications 02105 and 02120 should be followed for workers safety during excavations and handling of the site soils in aforementioned area.

Activities that related to excavation and handling of site soils are regulated under the OSHA Construction Standard 29 CFR 1910 Subpart H (Reference 6).

7.0 REFERENCES

1. Phase I Environmental Site Assessment (ESA), for City of Houston Neighborhood Street Reconstruction (NSR) Project 456 in Houston, Texas; WBS No. N - 000388-0001-3," Geotest Report No. 1130017801 dated March 5, 2014.

2. ASTM E1903-11, ASTM Guidelines for Phase II Environmental Site Assessment, ASTM E1903-11.

3. City of Houston Department of Public Works and Engineering Infrastructure Design Manual, Chapter 11 – Geotechnical and Environmental Requirements, Subsection Phase II Environmental Requirements, dated July 1, 2012.

4. ASTM Standard D 5730 Guide to Site Characteristics for Environmental Purposes with Emphasis on Soil, Rock, the Vadose Zone and Groundwater.

5. TCEQ (TNRCC) Regulatory Guidance-Remediation Division-RG-366/TRRP/Tier 1 PCL Tables, dated June 19, 2012.

6. OSHA Regulations (Standards – 29 CFR).

TABLES

	Table
Summary of Analytical Test Results (Soil)	1
Summary of Analytical Test Results (Water)	2

TABLE 1

SUMMARY OF ANALYTICAL TEST RESULTS (Soil)

LOCATION (See Figures 2.1 and 2.2)		TCEQ TRRP TIER 1 Soil PCLs (mg/kg)	BTEX (mg/kg)				MTBE (mg/kg)	TPH (mg/kg)
			Benzene	Toluene	Ethyl Benzene	Total Xylenes		
Boring No.	**Sample Depth, ft**	**Residential** (1)	*0.026*	*8.2*	*7.6*	*120*	*0.62*	*65*
EB-1	16-18		<0.000241	<0.000162	<0.000120	<0.000287	<0.000737	<0.853
EB-2	10-12		<0.000234	<0.000157	<0.000116	<0.000279	<0.000717	<0.816
EB-3	10-12		<0.000240	<0.000161	<0.000119	<0.000286	<0.000735	<0.837
EB-4	16-18		<0.000272	0.000664	<0.000135	0.00116	0.00110	<0.958
EB-5	18-20		<0.000248	<0.000166	<0.000123	<0.000295	<0.000758	<0.867
EB-6	6-8		<0.000226	0.000317	<0.000112	<0.000269	<0.000691	<0.768

Note: Value in **BOLD** shows exceeds the TCEQ TRRP TIER 1 PCLs
Details of these tests are provided in Appendix B.

(1) TCEQ TRRP TIER 1 PCLS For 0.5 acre source area and $^{GW}soil_{ing}$ exposure pathway

TABLE 2

SUMMARY OF ANALYTICAL TEST RESULTS (Water)

LOCATION (See Figures 2.1 and 2.2)	TCEQ TRRP TIER 1 Soil PCLs (mg/kg)	BTEX (mg/kg)				MTBE (mg/kg)	TPH (mg/kg)
		Benzene	Toluene	Ethyl Benzene	Total Xylenes		
Boring No.	**Residential** (1)	*0.005*	*1.0*	*0.70*	*10.0*	*0.24*	*0.98*
EB-1		0.000340	0.000440	0.000120	0.000600	0.000830	<0.0930
EB-5		<0.000147	0.000260	<0.0000806	<0.0000975	<0.000508	<0.0920

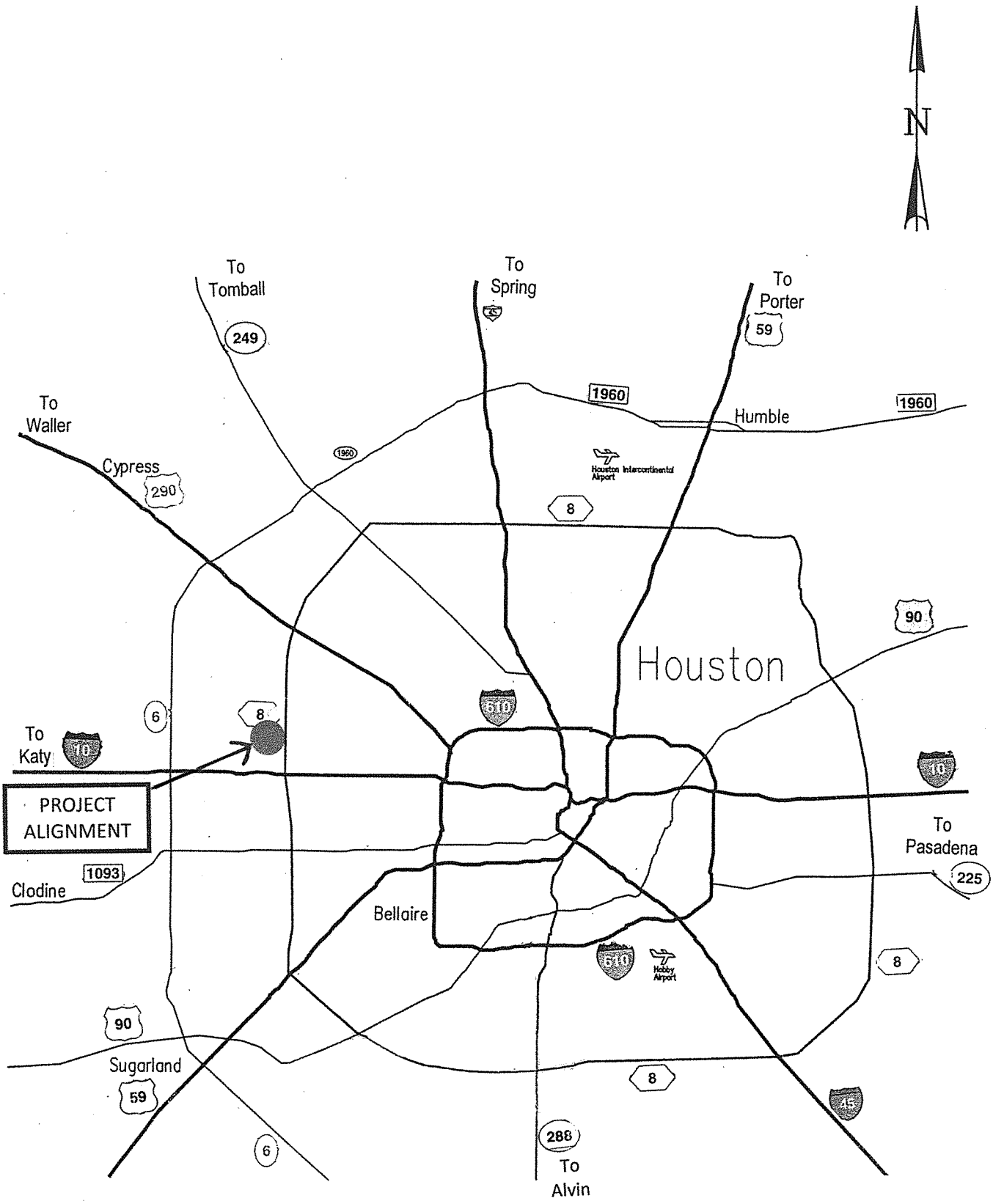
Note: Value in **BOLD** shows exceeds the TCEQ TRRP TIER 1 PCLs
Details of these tests are provided in Appendix B.

(1) TCEQ TRRP TIER 1 PCLS For 0.5 acre source area and $^{GW}soil_{ing}$ exposure pathway

ILLUSTRATIONS

	Figure
Vicinity Map	1
Plan of Borings and REC sites	2.1 and 2.2

Job No. 1130020101



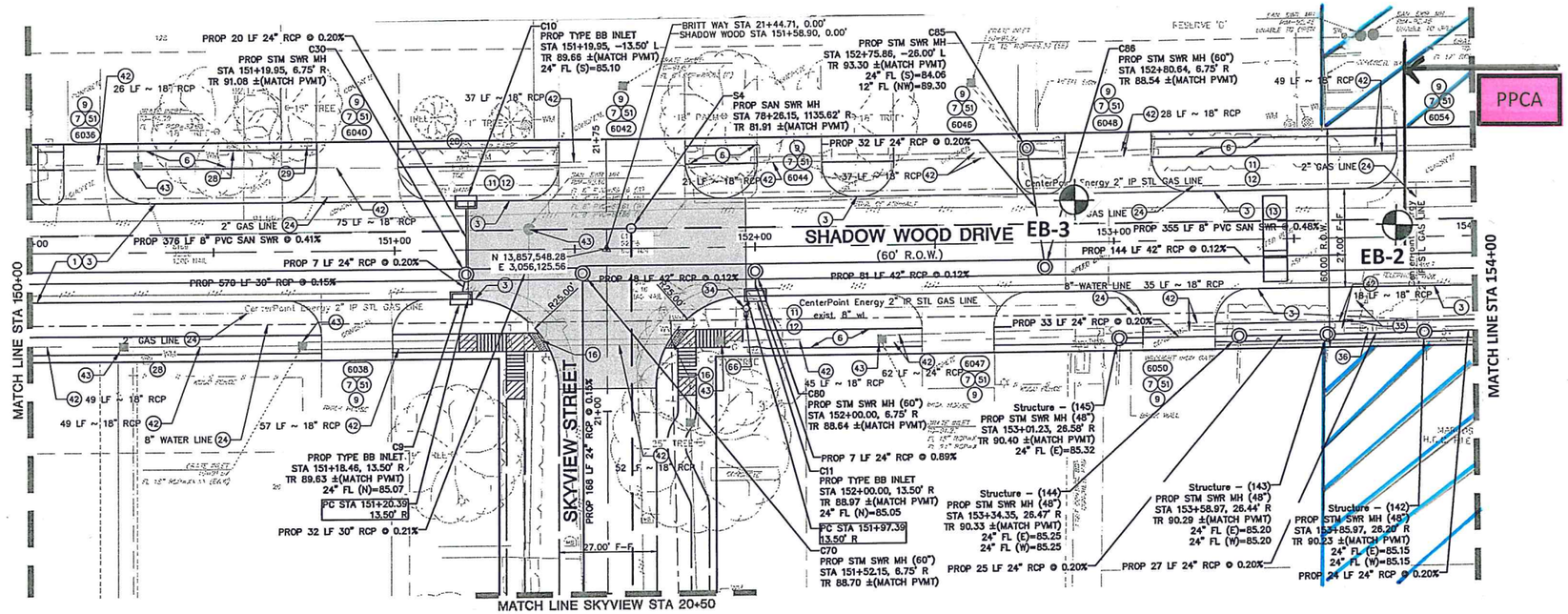
VICINITY MAP

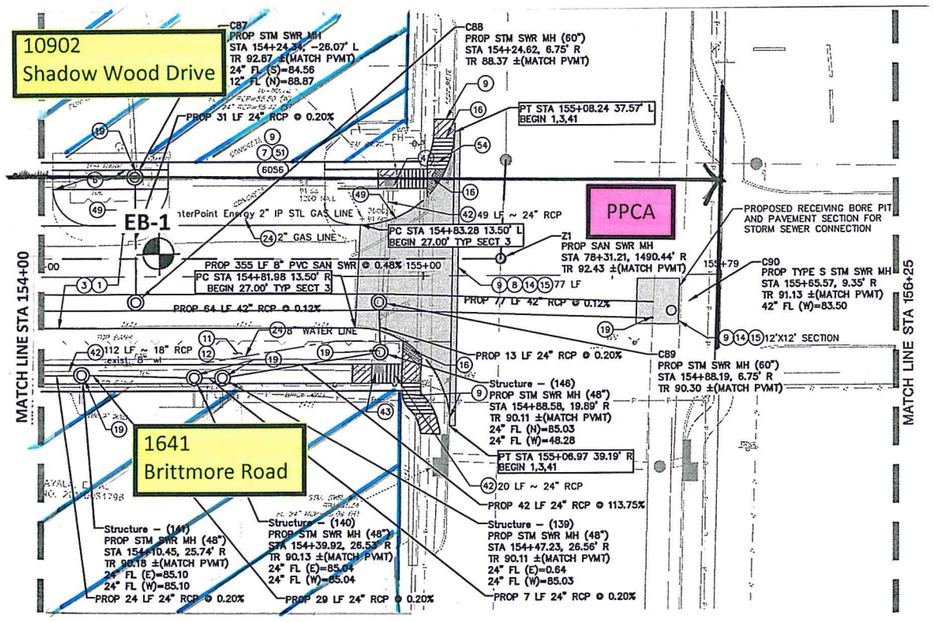
(NOT TO SCALE)

Geotest Engineering, Inc.

FIGURE 1

Job No. 1130020101



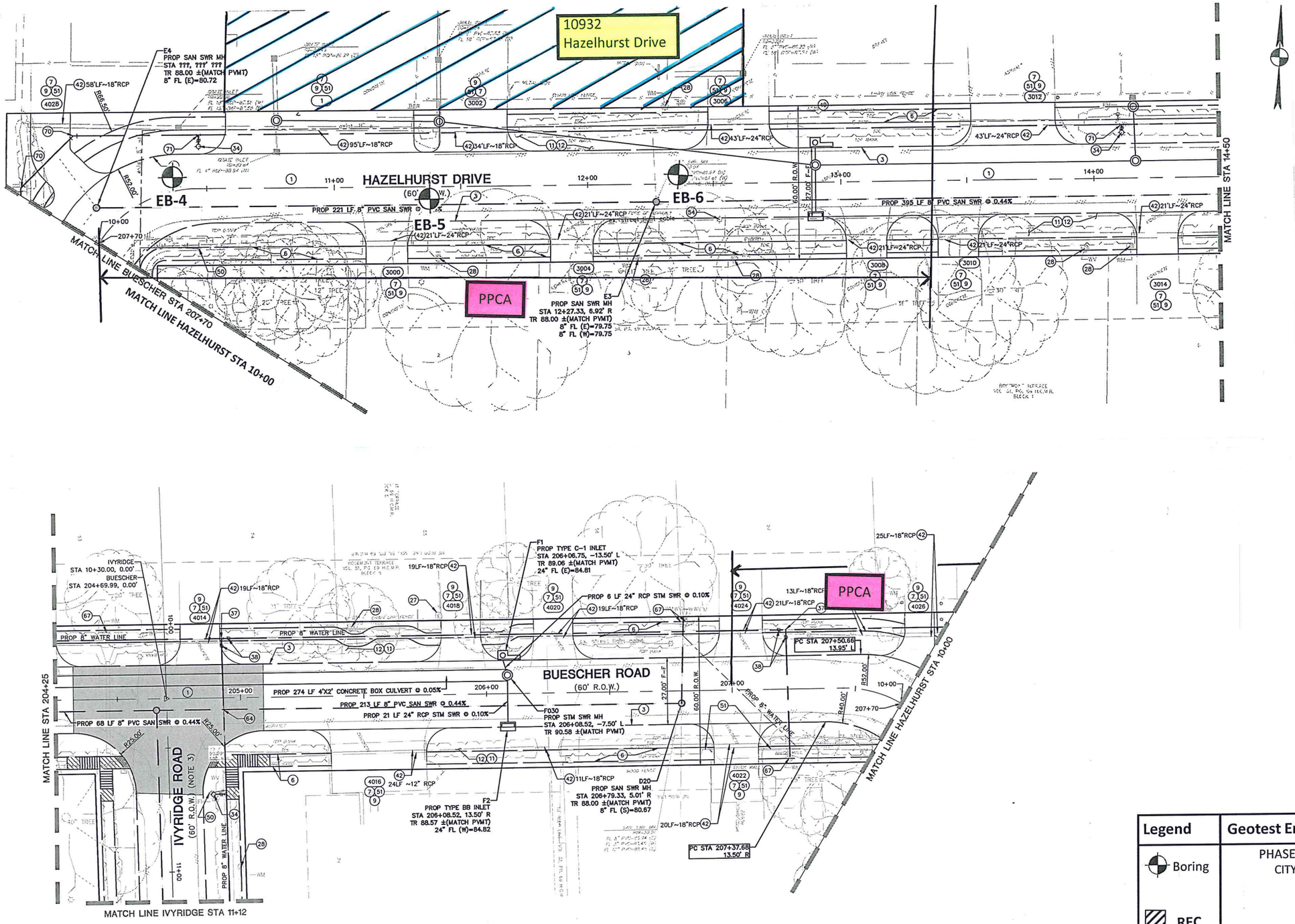


Legend	Geotest Engineering, Inc.
Boring	PHASE II ENVIRONMENTAL SITE ASSESSMENT CITY OF HOUSTON NEIGHBORHOOD STREET RECONSTRUCTION PROJECT 456 WBS NO. N-000388-0001-3 HOUSTON, TEXAS
REC	**PLAN OF BORINGS** 0 20 40 SCALE IN FEET

Geotest Engineering, Inc.

FIGURE 2.1

Job No. 1130020101



Legend	Geotest Engineering, Inc.
Boring	PHASE II ENVIRONMENTAL SITE ASSESSMENT CITY OF HOUSTON NEIGHBORHOOD STREET RECONSTRUCTION PROJECT 456 WBS NO. N-000388-0001-3 HOUSTON, TEXAS
REC	**PLAN OF BORINGS** 0 20 40 SCALE IN FEET

APPENDIX A

Log of Borings and Symbols Used

LOG OF BORING NO. EB-1

PROJECT : Phase II Environmental Site Assessment
Neighborhood Street Reconstruction (NSR) Project 456
WBS No. N-000388-0001-3; Houston, Texas

PROJECT NO. : 1130020101

LOCATION : See Plan of Borings (Figure 2)

COMPLETION DEPTH : 20.0 FT.

SURFACE ELEVATION : Existing Grade

DATE : 05-07-2014

SAMPLER : Shelby Tube/Split Spoon
DRY AUGER : .0 TO 20.0 FT.
WASH BORE : -- TO -- FT.

DEPTH, FEET	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	SPT N-VALUE, BLOWS PER FOOT	HAND PENETROMETER READING, TSF	FIELD SCREENING - ORGANIC VAPOR, ppm	TOTAL PETROLEUM HYDROCARBONS, mg/kg	BTEX, mg/kg: BENZENE	BTEX, mg/kg: TOLUENE	BTEX, mg/kg: ETHYLBENZENE	BTEX, mg/kg: TOTAL XYLENE	TOTAL BTEX, mg/kg	POLYCYCLIC AROMATIC HYDROCARBONS, mg/kg	VOLATILE ORGANIC COMPOUNDS, mg/kg	TOTAL LEAD, mg/kg
0			10" Asphalt												
			Brown SANDY CLAY (CL)			0.9									
			Brown SILTY SAND (SM)			0.0									
5						0.3									
						0.5									
10						0.9									
						1.4	ND	ND	ND	ND	ND	ND			
						1.9									
15						1.2									
						2.3									
			Reddish brown SANDY CLAY (CL)												
20						1.3									
25															
30															
35															

NOTE :
ND - Not Detected

DEPTH TO WATER IN BORING :
▽: Free water encountered at 12.0 ft. during drilling.

Geotest Engineering, Inc.

FIGURE A-1

LOG OF BORING NO. EB-2

PROJECT : Phase II Environmental Site Assessment
Neighborhood Street Reconstruction (NSR) Project 456
WBS No. N-000388-0001-3; Houston, Texas

PROJECT NO. : 1130020101

LOCATION : See Plan of Borings (Figure 2)

COMPLETION DEPTH : 20.0 FT.

SURFACE ELEVATION : Existing Grade

DATE : 05-07-2014

SAMPLER : Shelby Tube/Split Spoon
DRY AUGER : .0 TO 20.0 FT.
WASH BORE : -- TO -- FT.

DEPTH, FEET	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	SPT N-VALUE, BLOWS PER FOOT	HAND PENETROMETER READING, TSF	FIELD SCREENING ORGANIC VAPOR, ppm	TOTAL PETROLEUM HYDROCARBONS, mg/kg	BTEX, mg/kg: BENZENE	BTEX, mg/kg: TOLUENE	BTEX, mg/kg: ETHYLBENZENE	BTEX, mg/kg: TOTAL XYLENE	TOTAL BTEX, mg/kg	POLYCYCLIC AROMATIC HYDROCARBONS, mg/kg	VOLATILE ORGANIC COMPOUNDS, mg/kg	TOTAL LEAD, mg/kg
0			9" Asphalt												
			Gray SANDY CLAY (CL)			2.3									
			Gray and brown SANDY CLAY (CL)			2.3									
5						1.4									
						1.8									
10						1.5									
						2.6	ND	ND	ND	ND	ND	ND			
			Gray and brown SILTY SAND (SM)			1.4									
15						1.5									
						1.6									
			Brown CLAY (CH)			0.3									
20															
25															
30															
35															

NOTE :
ND - Not Detected

DEPTH TO WATER IN BORING :
▽: Free water encountered at 12.0 ft. during drilling.

Geotest Engineering, Inc.

FIGURE A-2

LOG OF BORING NO. EB-3

PROJECT : Phase II Environmental Site Assessment
Neighborhood Street Reconstruction (NSR) Project 456
WBS No. N-000388-0001-3; Houston, Texas

PROJECT NO. : 1130020101

LOCATION : See Plan of Borings (Figure 2)

COMPLETION DEPTH : 20.0 FT.

SURFACE ELEVATION : Existing Grade

DATE : 05-07-2014

SAMPLER : Shelby Tube/Split Spoon
DRY AUGER : .0 TO 20.0 FT.
WASH BORE : -- TO -- FT.

DEPTH, FEET	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	SPT N-VALUE, BLOWS PER FOOT	HAND PENETROMETER READING, TSF	FIELD SCREENING ORGANIC VAPOR, ppm	TOTAL PETROLEUM HYDROCARBONS, mg/kg	BTEX, mg/kg: BENZENE	BTEX, mg/kg: TOLUENE	BTEX, mg/kg: ETHYLBENZENE	BTEX, mg/kg: TOTAL XYLENE	TOTAL BTEX, mg/kg	POLYCYLIC AROMATIC HYDROCARBONS, mg/kg	VOLATILE ORGANIC COMPOUNDS, mg/kg	TOTAL LEAD, mg/kg
0			9" Asphalt												
			Gray and brown SANDY CLAY (CL)			0.7									
			Gray and brown SILTY SAND (SM)			1.3									
5			Gray and yellow SANDY CLAY (CL)			1.2									
						1.2									
10						1.8									
						1.9	ND	ND	ND	ND	ND	ND			
			Brown SILTY SAND (SM)			1.3									
15						0.0									
						0.1									
20			Reddish brown and gray CLAY (CH)			0.0									
25															
30															
35															

NOTE :
ND - Not Detected

DEPTH TO WATER IN BORING :
▽: Free water encountered at 12.0 ft. during drilling.

Geotest Engineering, Inc.

FIGURE A-3

LOG OF BORING NO. EB-4

PROJECT : Phase II Environmental Site Assessment
Neighborhood Street Reconstruction (NSR) Project 456
WBS No. N-000388-0001-3; Houston, Texas

PROJECT NO. : 1130020101

LOCATION : See Plan of Borings (Figure 2)

COMPLETION DEPTH : 20.0 FT.

SURFACE ELEVATION : Existing Grade

DATE : 05-07-2014

SAMPLER : Shelby Tube/Split Spoon
DRY AUGER : .0 TO 20.0 FT.
WASH BORE : -- TO -- FT.

DEPTH, FEET	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	SPT N-VALUE, BLOWS PER FOOT	HAND PENETROMETER READING, TSF	FIELD SCREENING - ORGANIC VAPOR, ppm	TOTAL PETROLEUM HYDROCARBONS, mg/kg	BTEX, mg/kg: BENZENE	BTEX, mg/kg: TOLUENE	BTEX, mg/kg: ETHYLBENZENE	BTEX, mg/kg: TOTAL XYLENE	TOTAL BTEX, mg/kg	POLYCYLIC AROMATIC HYDROCARBONS, mg/kg	VOLATILE ORGANIC COMPOUNDS, mg/kg	TOTAL LEAD, mg/kg
0			4" Asphalt												
			Brown SANDY CLAY (CL)			1.6									
			-yellow and gray w/ferrous nodules 4'-6'			0.7									
5						0.1									
						0.0									
10						1.1									
						1.5	ND	ND	*	ND	*	*			
			Reddish brown SANDY CLAY (CL)			1.3									
15			Red and gray CLAY (CH)			1.0									
			Brown SILTY SAND (SM)			3.0									
			Reddish brown CLAY (CH) w/sand			1.6									
20															
25															
30															
35															

NOTE :
ND - Not Detected

*

Toluene	0.00066
Total Xylene	0.00116
Total BTEX	0.00182

DEPTH TO WATER IN BORING :
▽: Free water encountered at 16.0 ft. during drilling.

Geotest Engineering, Inc.

FIGURE A-4

LOG OF BORING NO. EB-5

PROJECT : Phase II Environmental Site Assessment
Neighborhood Street Reconstruction (NSR) Project 456
WBS No. N-000388-0001-3; Houston, Texas

PROJECT NO. : 1130020101

LOCATION : See Plan of Borings (Figure 2)

COMPLETION DEPTH : 20.0 FT.

SURFACE ELEVATION : Existing Grade

DATE : 05-07-2014

SAMPLER : Shelby Tube/Split Spoon
DRY AUGER : .0 TO 20.0 FT.
WASH BORE : -- TO -- FT.

DEPTH, FEET	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	SPT N-VALUE, BLOWS PER FOOT	HAND PENETROMETER READING, TSF	FIELD SCREENING - ORGANIC VAPOR, ppm	TOTAL PETROLEUM HYDROCARBONS, mg/kg	BTEX, mg/kg: BENZENE	BTEX, mg/kg: TOLUENE	BTEX, mg/kg: ETHYLBENZENE	BTEX, mg/kg: TOTAL XYLENE	TOTAL BTEX, mg/kg	POLYCYCLIC AROMATIC HYDROCARBONS, mg/kg	VOLATILE ORGANIC COMPOUNDS, mg/kg	TOTAL LEAD, mg/kg
0			Brown SANDY CLAY (CL) -yellow and gray 2'-4'			5.3									
						5.0									
5						5.8									
						6.6									
10						3.8									
						4.3	ND	ND	ND	ND	ND	ND			
			Brown SILTY SAND (SM)			4.4									
15						4.5									
						4.9									
			Red CLAY (CH)			8.0									
20															
25															
30															
35															

NOTE :
ND - Not Detected

DEPTH TO WATER IN BORING :
▽: Free water encountered at 16.0 ft. during drilling.

Geotest Engineering, Inc.

FIGURE A-5

LOG OF BORING NO. EB-6

PROJECT : Phase II Environmental Site Assessment
Neighborhood Street Reconstruction (NSR) Project 456
WBS No. N-000388-0001-3; Houston, Texas

PROJECT NO. : 1130020101

LOCATION : See Plan of Borings (Figure 2)

COMPLETION DEPTH : 20.0 FT.

SURFACE ELEVATION : Existing Grade

DATE : 05-07-2014

SAMPLER : Shelby Tube/Split Spoon
DRY AUGER : .0 TO 20.0 FT.
WASH BORE : -- TO -- FT.

DEPTH, FEET	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	SPT N-VALUE, BLOWS PER FOOT	HAND PENETROMETER READING, TSF	FIELD SCREENING ORGANIC VAPOR, ppm	TOTAL PETROLEUM HYDROCARBONS, mg/kg	BTEX, mg/kg: BENZENE	BTEX, mg/kg: TOLUENE	BTEX, mg/kg: ETHYLBENZENE	BTEX, mg/kg: TOTAL XYLENE	TOTAL BTEX, mg/kg	POLYCYCLIC AROMATIC HYDROCARBONS, mg/kg	VOLATILE ORGANIC COMPOUNDS, mg/kg	TOTAL LEAD, mg/kg
0			10" Asphalt												
			Brown SANDY CLAY (CL) -yellow and gray 2'-4'			1.6									
						1.8									
5						5.7									
						7.3									
10						7.1									
			Brown SILTY SAND (SM)			5.7	ND	ND	*	ND	*	ND			
						5.3									
15			-w/clay seams 15'-16'			7.1									
			Gray SILTY SAND (SM)			3.0									
			Red CLAY (CH)			3.6									
20															
25															
30															
35															

NOTE :
ND - Not Detected
*

Toluene	0.000317
Total Xylene	0.000317

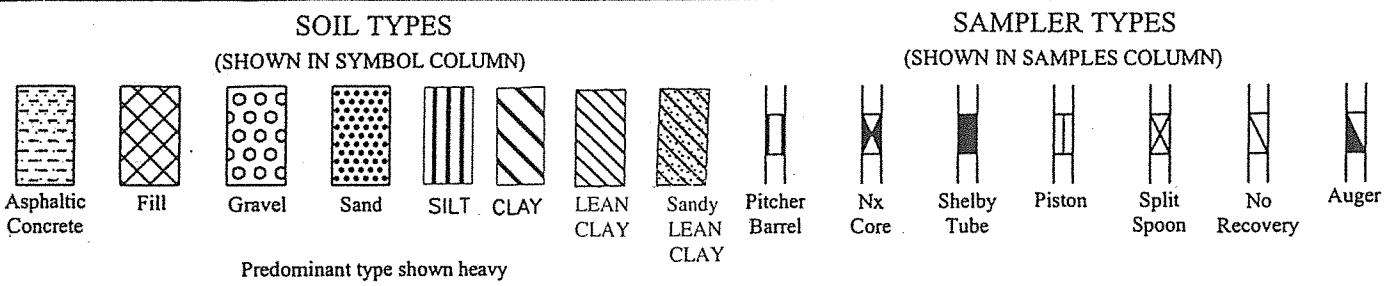
DEPTH TO WATER IN BORING :
▽: Free water encountered at 16.0 ft. during drilling.

Geotest Engineering, Inc.

FIGURE A-6

Job No. 1130020101

SYMBOLS AND TERMS USED ON BORING LOGS



TERMS DESCRIBING CONSISTENCY OR CONDITION

Basic Soil Type	Density or Consistency	Standard Penetration Resistance, (1) Blows/ft.	Unconfined Compressive Strength (q_u), (2) Tons/sq. ft.
Cohesionless	Very loose	Less than 4	Not applicable
	Loose	4 to <10	Not applicable
	Medium dense	10 to <30	Not applicable
	Dense	30 to <50	Not applicable
	Very dense	50 or greater	Not applicable
Cohesive	Very soft	Less than 2	Less than 0.25
	Soft	2 to <4	0.25 to <0.5
	Firm/Medium stiff	4 to <8	0.5 to <1.0
	Stiff	8 to <15	1.0 to <2.0
	Very stiff	15 to <30	2.0 to <4.0
	Hard	30 or greater	4 or greater

(1) Number of blows from 140-lb. weight falling 30-in. to drive 2-in. OD, 1-3/8-in. ID, split barrel sampler (ASTM D1586)

(2) q_u may also be approximated using a pocket penetrometer

TERMS CHARACTERIZING SOIL STRUCTURE

Parting: -paper thin in size Seam: -1/8" to 3" thick Layer: -greater than 3"

Slickensided	- having inclined planes of weakness that are slick and glossy in appearance.
Fissured	- containing shrinkage cracks, frequently filled with fine sand or silt; usually more or less vertical.
Laminated	- composed of thin layers of varying color and texture.
Interbedded	- composed of alternate layers of different soil types.
Calcareous	- containing appreciable quantities of calcium carbonate.
Well graded	- having wide range in grain sizes and substantial amounts of all intermediate particle sizes.
Poorly graded	- predominantly of one grain size, or having a range of sizes with some intermediate size missing.
Flocculated	- pertaining to cohesive soils that exhibit a loose knit or flakey structure.

APPENDIX B

LABORATORY REPORT WITH
QUALITY CONTROL INFORMATION

Analytical Report 484963

for

Geotest Engineering, Inc.

Project Manager: Mohan Ballagere

NSR-456

1130020101

03-JUN-14

Collected By: Client

4143 Greenbriar Dr., Stafford, TX 77477

Xenco-Houston (EPA Lab code: TX00122):
Texas (T104704215-14-16-TX), Arizona (AZ0765), Florida (E871002), Louisiana (03054)
New Jersey (TX007), North Carolina(681), Oklahoma (9218), Pennsylvania (68-03610)

Xenco-Atlanta (EPA Lab Code: GA00046):
Florida (E87429), North Carolina (483), South Carolina (98015), Kentucky (85), DoD (L10-135)
Louisiana (04176), USDA (P330-07-00105)

Xenco-Lakeland: Florida (E84098)
Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400-TX)
Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295-TX)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona(AZ0757)
Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)
Xenco Tucson (EPA Lab code:AZ000989): Arizona (AZ0758)

03-JUN-14

Project Manager: **Mohan Ballagere**
Geotest Engineering, Inc.
5600 Bintliff
Houston, TX 77036

Reference: XENCO Report No(s): **484963**
NSR-456
Project Address:

Mohan Ballagere:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 484963. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. The uncertainty of measurement associated with the results of analysis reported is available upon request. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 484963 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,

Debbie Simmons

Debbie Simmons
Project Manager

Recipient of the Prestigious Small Business Administration Award of Excellence in 1994.
Certified and approved by numerous States and Agencies.
A Small Business and Minority Status Company that delivers SERVICE and QUALITY

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

Sample Cross Reference 484963

Geotest Engineering, Inc., Houston, TX

NSR-456

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
EB-1 S#9	S	05-07-14 09:30	16 - 18 ft	484963-001
EB-2 S#6	S	05-07-14 10:00	10 - 12 ft	484963-002
EB-3 S#6	S	05-07-14 10:30	10 - 12 ft	484963-003
EB-4 S#9	S	05-07-14 11:30	16 - 18 ft	484963-004
EB-5 S#10	S	05-07-14 12:30	18 - 20 ft	484963-005
EB-6 S#4	S	05-07-14 13:30	6 - 8 ft	484963-006
EB-1	W	05-07-14 09:30		484963-007
EB-5	W	05-07-14 12:30		484963-008
Composite	S	05-07-14 00:00		484963-009
Trip Blank	W	05-07-14 00:00		Not Analyzed

CASE NARRATIVE

Client Name: Geotest Engineering, Inc.
Project Name: NSR-456

Project ID: *1130020101*
Work Order Number(s): *484963*

Report Date: *03-JUN-14*
Date Received: *05/08/2014*

This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory.

Sample receipt non conformances and comments:

Ambient temp. Cooling Process Began upon receipt in lab.

Report revised 6/3/14 reporting to TRRP limits

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-940647 VOAs by SW-846 8260B
Methyl Chloride, Methyl bromide recovered above QC limits in the laboratory control sample. Analyte was not detected in any of the associated samples and therefore the data was accepted. Samples affected are: 484963-009.

1,1,1-Trichloroethane, 1,1-Dichloropropene, 2,2-Dichloropropane, Hexachlorobutadiene, Isopropylbenzene, Sec-Butylbenzene, Tetrachloroethylene, p-Cymene (p-Isopropyltoluene) recovered below QC limits in the Matrix Spike. Samples affected are: 484963-009.
The Laboratory Control Sample for 2,2-Dichloropropane, Tetrachloroethylene, Sec-Butylbenzene, Isopropylbenzene, 1,1,1-Trichloroethane, Hexachlorobutadiene, p-Cymene (p-Isopropyltoluene), 1,1-Dichloropropene is within laboratory Control Limits

Batch: LBA-940670 BTEX-MTBE by SW 8260B
SW8260BTX
Batch 940670,
Toluene detected in the blank below the MQL but above the SDL; possible laboratory contamination indicating a potential high bias. Samples affected are: 484963-006.

Batch: LBA-940879 BTEX-MTBE by SW 8260B
Toluene detected in the blank below the MQL but above the SDL; possible laboratory contamination indicating a potential high bias. Samples affected are: 484963-007, -008.

Certificate of Analytical Results

484963

Geotest Engineering, Inc., Houston, TX

NSR-456

Sample Id: **EB-1 S#9** Matrix: Soil Sample Depth: 16 - 18 ft

Lab Sample Id: 484963-001 Date Collected: 05.07.14 09.30 Date Received: 05.08.14 18.37

Analytical Method: TPH by Texas1005 Prep Method: 1005

Analyst: FOV % Moist: 20.56 Tech: FOV

Seq Number: 940794 Date Prep: 05.12.14 14.38

Prep seq: 655283

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
C6-C12 Gasoline Range Hydrocarbons	PHC612	<2.97	62.9	2.97	mg/kg	05.13.14 05:34	U	1
C12 - C28 Diesel Range Hydrocarbons	PHCG1028	<2.04	62.9	2.04	mg/kg	05.13.14 05:34	U	1
C28-C35 Oil Range Hydrocarbons	PHCG2835	<0.853	62.9	0.853	mg/kg	05.13.14 05:34	U	1
Total TPH 1005	PHC635	<0.853		0.853	mg/kg	05.13.14 05:34	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
o-Terphenyl	107	70 - 130	%		
1-Chlorooctane	113	70 - 130	%		

Analytical Method: BTEX-MTBE by SW 8260B Prep Method: 5030B

Analyst: SAD % Moist: 20.56 Tech: SAD

Seq Number: 940548 Date Prep: 05.09.14 16.40

Prep seq: 655212

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
MTBE	1634-04-4	<0.000737	0.00626	0.000737	mg/kg	05.09.14 19:16	U	1
Benzene	71-43-2	<0.000241	0.00125	0.000241	mg/kg	05.09.14 19:16	U	1
Toluene	108-88-3	<0.000162	0.00125	0.000162	mg/kg	05.09.14 19:16	U	1
Ethylbenzene	100-41-4	<0.000120	0.00125	0.000120	mg/kg	05.09.14 19:16	U	1
m,p-Xylenes	179601-23-1	<0.000453	0.00250	0.000453	mg/kg	05.09.14 19:16	U	1
o-Xylene	95-47-6	<0.000287	0.00125	0.000287	mg/kg	05.09.14 19:16	U	1
Total Xylenes	1330-20-7	<0.000287		0.000287	mg/kg	05.09.14 19:16	U	
Total BTEX		<0.000120		0.000120	mg/kg	05.09.14 19:16	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
Dibromofluoromethane	101	74 - 126	%		
1,2-Dichloroethane-D4	105	80 - 120	%		
Toluene-D8	107	73 - 132	%		
4-Bromofluorobenzene	105	58 - 152	%		

Certificate of Analytical Results

484963

Geotest Engineering, Inc., Houston, TX

NSR-456

Sample Id: **EB-2 S#6** Matrix: Soil Sample Depth: 10 - 12 ft

Lab Sample Id: 484963-002 Date Collected: 05.07.14 10.00 Date Received: 05.08.14 18.37

Analytical Method: TPH by Texas1005 Prep Method: 1005

Analyst: FOV % Moist: 17.5 Tech: FOV

Seq Number: 940794 Date Prep: 05.12.14 14.41

Prep seq: 655283

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
C6-C12 Gasoline Range Hydrocarbons	PHC612	<2.84	60.2	2.84	mg/kg	05.13.14 05:53	U	1
C12 - C28 Diesel Range Hydrocarbons	PHCG1028	<1.95	60.2	1.95	mg/kg	05.13.14 05:53	U	1
C28-C35 Oil Range Hydrocarbons	PHCG2835	<0.816	60.2	0.816	mg/kg	05.13.14 05:53	U	1
Total TPH 1005	PHC635	<0.816		0.816	mg/kg	05.13.14 05:53	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
o-Terphenyl	104	70 - 130	%		
1-Chlorooctane	112	70 - 130	%		

Analytical Method: BTEX-MTBE by SW 8260B Prep Method: 5030B

Analyst: SAD % Moist: 17.5 Tech: SAD

Seq Number: 940548 Date Prep: 05.09.14 16.42

Prep seq: 655212

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
MTBE	1634-04-4	<0.000717	0.00608	0.000717	mg/kg	05.09.14 19:41	U	1
Benzene	71-43-2	<0.000234	0.00122	0.000234	mg/kg	05.09.14 19:41	U	1
Toluene	108-88-3	<0.000157	0.00122	0.000157	mg/kg	05.09.14 19:41	U	1
Ethylbenzene	100-41-4	<0.000116	0.00122	0.000116	mg/kg	05.09.14 19:41	U	1
m,p-Xylenes	179601-23-1	<0.000440	0.00243	0.000440	mg/kg	05.09.14 19:41	U	1
o-Xylene	95-47-6	<0.000279	0.00122	0.000279	mg/kg	05.09.14 19:41	U	1
Total Xylenes	1330-20-7	<0.000279		0.000279	mg/kg	05.09.14 19:41	U	
Total BTEX		<0.000116		0.000116	mg/kg	05.09.14 19:41	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
Dibromofluoromethane	113	74 - 126	%		
1,2-Dichloroethane-D4	114	80 - 120	%		
Toluene-D8	98	73 - 132	%		
4-Bromofluorobenzene	106	58 - 152	%		

Certificate of Analytical Results

484963

Geotest Engineering, Inc., Houston, TX

NSR-456

Sample Id: **EB-3 S#6** Matrix: Soil Sample Depth: 10 - 12 ft

Lab Sample Id: 484963-003 Date Collected: 05.07.14 10.30 Date Received: 05.08.14 18.37

Analytical Method: TPH by Texas1005 Prep Method: 1005

Analyst: FOV % Moist: 19.34 Tech: FOV

Seq Number: 940794 Date Prep: 05.12.14 14.44

Prep seq: 655283

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
C6-C12 Gasoline Range Hydrocarbons	PHC612	<2.92	61.7	2.92	mg/kg	05.13.14 06:12	U	1
C12 - C28 Diesel Range Hydrocarbons	PHCG1028	<2.00	61.7	2.00	mg/kg	05.13.14 06:12	U	1
C28-C35 Oil Range Hydrocarbons	PHCG2835	<0.837	61.7	0.837	mg/kg	05.13.14 06:12	U	1
Total TPH 1005	PHC635	<0.837		0.837	mg/kg	05.13.14 06:12	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
o-Terphenyl	106	70 - 130	%		
1-Chlorooctane	110	70 - 130	%		

Analytical Method: BTEX-MTBE by SW 8260B Prep Method: 5030B

Analyst: SAD % Moist: 19.34 Tech: SAD

Seq Number: 940548 Date Prep: 05.09.14 16.44

Prep seq: 655212

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
MTBE	1634-04-4	<0.000735	0.00624	0.000735	mg/kg	05.09.14 20:07	U	1
Benzene	71-43-2	<0.000240	0.00125	0.000240	mg/kg	05.09.14 20:07	U	1
Toluene	108-88-3	<0.000161	0.00125	0.000161	mg/kg	05.09.14 20:07	U	1
Ethylbenzene	100-41-4	<0.000119	0.00125	0.000119	mg/kg	05.09.14 20:07	U	1
m,p-Xylenes	179601-23-1	<0.000451	0.00249	0.000451	mg/kg	05.09.14 20:07	U	1
o-Xylene	95-47-6	<0.000286	0.00125	0.000286	mg/kg	05.09.14 20:07	U	1
Total Xylenes	1330-20-7	<0.000286		0.000286	mg/kg	05.09.14 20:07	U	
Total BTEX		<0.000119		0.000119	mg/kg	05.09.14 20:07	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
Dibromofluoromethane	103	74 - 126	%		
1,2-Dichloroethane-D4	104	80 - 120	%		
Toluene-D8	105	73 - 132	%		
4-Bromofluorobenzene	106	58 - 152	%		

Certificate of Analytical Results

484963

Geotest Engineering, Inc., Houston, TX

NSR-456

Sample Id: **EB-4 S#9** Matrix: Soil Sample Depth: 16 - 18 ft

Lab Sample Id: 484963-004 Date Collected: 05.07.14 11.30 Date Received: 05.08.14 18.37

Analytical Method: TPH by Texas1005 Prep Method: 1005

Analyst: FOV % Moist: 29.45 Tech: FOV

Seq Number: 940794 Date Prep: 05.12.14 14.47

Prep seq: 655283

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
C6-C12 Gasoline Range Hydrocarbons	PHC612	<3.34	70.7	3.34	mg/kg	05.13.14 15:59	U	1
C12 - C28 Diesel Range Hydrocarbons	PHCG1028	<2.29	70.7	2.29	mg/kg	05.13.14 15:59	U	1
C28-C35 Oil Range Hydrocarbons	PHCG2835	<0.958	70.7	0.958	mg/kg	05.13.14 15:59	U	1
Total TPH 1005	PHC635	<0.958		0.958	mg/kg	05.13.14 15:59	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
o-Terphenyl	97	70 - 130	%		
1-Chlorooctane	102	70 - 130	%		

Analytical Method: BTEX-MTBE by SW 8260B Prep Method: 5030B

Analyst: SAD % Moist: 29.45 Tech: SAD

Seq Number: 940780 Date Prep: 05.13.14 12.30

Prep seq: 655352

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
MTBE	1634-04-4	**0.00110**	0.00706	0.000832	mg/kg	05.13.14 12:58	J	1
Benzene	71-43-2	<0.000272	0.00141	0.000272	mg/kg	05.13.14 12:58	U	1
Toluene	108-88-3	**0.000664**	0.00141	0.000183	mg/kg	05.13.14 12:58	J	1
Ethylbenzene	100-41-4	<0.000135	0.00141	0.000135	mg/kg	05.13.14 12:58	U	1
m,p-Xylenes	179601-23-1	**0.000720**	0.00282	0.000511	mg/kg	05.13.14 12:58	J	1
o-Xylene	95-47-6	**0.000438**	0.00141	0.000323	mg/kg	05.13.14 12:58	J	1
Total Xylenes	1330-20-7	**0.00116**		0.000323	mg/kg	05.13.14 12:58	J	
Total BTEX		**0.00182**		0.000135	mg/kg	05.13.14 12:58		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
Dibromofluoromethane	110	74 - 126	%		
1,2-Dichloroethane-D4	116	80 - 120	%		
Toluene-D8	104	73 - 132	%		
4-Bromofluorobenzene	121	58 - 152	%		

Certificate of Analytical Results

484963

Geotest Engineering, Inc., Houston, TX

NSR-456

Sample Id: **EB-5 S#10** Matrix: Soil Sample Depth: 18 - 20 ft

Lab Sample Id: 484963-005 Date Collected: 05.07.14 12.30 Date Received: 05.08.14 18.37

Analytical Method: TPH by Texas1005 Prep Method: 1005

Analyst: FOV % Moist: 22.43 Tech: FOV

Seq Number: 940794 Date Prep: 05.12.14 14.50

Prep seq: 655283

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
C6-C12 Gasoline Range Hydrocarbons	PHC612	<3.02	63.9	3.02	mg/kg	05.13.14 06:31	U	1
C12 - C28 Diesel Range Hydrocarbons	PHCG1028	<2.07	63.9	2.07	mg/kg	05.13.14 06:31	U	1
C28-C35 Oil Range Hydrocarbons	PHCG2835	<0.867	63.9	0.867	mg/kg	05.13.14 06:31	U	1
Total TPH 1005	PHC635	<0.867		0.867	mg/kg	05.13.14 06:31	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
o-Terphenyl	103	70 - 130	%		
1-Chlorooctane	107	70 - 130	%		

Analytical Method: BTEX-MTBE by SW 8260B Prep Method: 5030B

Analyst: SAD % Moist: 22.43 Tech: SAD

Seq Number: 940780 Date Prep: 05.13.14 12.32

Prep seq: 655352

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
MTBE	1634-04-4	<0.000758	0.00643	0.000758	mg/kg	05.13.14 13:23	U	1
Benzene	71-43-2	<0.000248	0.00129	0.000248	mg/kg	05.13.14 13:23	U	1
Toluene	108-88-3	<0.000166	0.00129	0.000166	mg/kg	05.13.14 13:23	U	1
Ethylbenzene	100-41-4	<0.000123	0.00129	0.000123	mg/kg	05.13.14 13:23	U	1
m,p-Xylenes	179601-23-1	<0.000465	0.00257	0.000465	mg/kg	05.13.14 13:23	U	1
o-Xylene	95-47-6	<0.000295	0.00129	0.000295	mg/kg	05.13.14 13:23	U	1
Total Xylenes	1330-20-7	<0.000295		0.000295	mg/kg	05.13.14 13:23	U	
Total BTEX		<0.000123		0.000123	mg/kg	05.13.14 13:23	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
Dibromofluoromethane	109	74 - 126	%		
1,2-Dichloroethane-D4	104	80 - 120	%		
Toluene-D8	102	73 - 132	%		
4-Bromofluorobenzene	110	58 - 152	%		

Certificate of Analytical Results

484963

Geotest Engineering, Inc., Houston, TX

NSR-456

Sample Id: **EB-6 S#4** Matrix: Soil Sample Depth: 6 - 8 ft

Lab Sample Id: 484963-006 Date Collected: 05.07.14 13.30 Date Received: 05.08.14 18.37

Analytical Method: TPH by Texas1005 Prep Method: 1005

Analyst: FOV % Moist: 14.41 Tech: FOV

Seq Number: 940794 Date Prep: 05.12.14 14.53

Prep seq: 655283

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
C6-C12 Gasoline Range Hydrocarbons	PHC612	<2.74	58.0	2.74	mg/kg	05.13.14 06:50	U	1
C12 - C28 Diesel Range Hydrocarbons	PHCG1028	<1.88	58.0	1.88	mg/kg	05.13.14 06:50	U	1
C28-C35 Oil Range Hydrocarbons	PHCG2835	<0.786	58.0	0.786	mg/kg	05.13.14 06:50	U	1
Total TPH 1005	PHC635	<0.786		0.786	mg/kg	05.13.14 06:50	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
o-Terphenyl	103	70 - 130	%		
1-Chlorooctane	107	70 - 130	%		

Analytical Method: BTEX-MTBE by SW 8260B Prep Method: 5030B

Analyst: SAD % Moist: 14.41 Tech: SAD

Seq Number: 940670 Date Prep: 05.12.14 13.36

Prep seq: 655273

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
MTBE	1634-04-4	<0.000691	0.00587	0.000691	mg/kg	05.12.14 16:09	U	1
Benzene	71-43-2	<0.000226	0.00117	0.000226	mg/kg	05.12.14 16:09	U	1
Toluene	108-88-3	**0.000317**	0.00117	0.000152	mg/kg	05.12.14 16:09	BJ	1
Ethylbenzene	100-41-4	<0.000112	0.00117	0.000112	mg/kg	05.12.14 16:09	U	1
m,p-Xylenes	179601-23-1	<0.000424	0.00235	0.000424	mg/kg	05.12.14 16:09	U	1
o-Xylene	95-47-6	<0.000269	0.00117	0.000269	mg/kg	05.12.14 16:09	U	1
Total Xylenes	1330-20-7	<0.000269		0.000269	mg/kg	05.12.14 16:09	U	
Total BTEX		**0.000317**		0.000112	mg/kg	05.12.14 16:09	J	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
Dibromofluoromethane	109	74 - 126	%		
1,2-Dichloroethane-D4	97	80 - 120	%		
Toluene-D8	101	73 - 132	%		
4-Bromofluorobenzene	111	58 - 152	%		

Certificate of Analytical Results

484963

Geotest Engineering, Inc., Houston, TX

NSR-456

Sample Id: **EB-1** Matrix: Water Sample Depth:

Lab Sample Id: 484963-007 Date Collected: 05.07.14 09.30 Date Received: 05.08.14 18.37

Analytical Method: TPH by Texas1005 Prep Method: 1005

Analyst: FOV % Moist: Tech: FOV

Seq Number: 940857 Date Prep: 05.13.14 11.44

Prep seq: 655361

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
C6-C12 Gasoline Range Hydrocarbons	PHC612	<0.147	4.60	0.147	mg/L	05.13.14 19:48	U	1
C12 - C28 Diesel Range Hydrocarbons	PHCG1028	<0.151	4.60	0.151	mg/L	05.13.14 19:48	U	1
C28-C35 Oil Range Hydrocarbons	PHCG2835	<0.0930	4.60	0.0930	mg/L	05.13.14 19:48	U	1
Total TPH 1005	PHC635	<0.0930		0.0930	mg/L	05.13.14 19:48	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
o-Terphenyl	98	70 - 130	%		
1-Chlorooctane	106	70 - 130	%		

Analytical Method: BTEX-MTBE by SW 8260B Prep Method: 5030B

Analyst: SAD % Moist: Tech: SAD

Seq Number: 940879 Date Prep: 05.12.14 17.32

Prep seq: 655422

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
MTBE	1634-04-4	**0.000830**	0.00500	0.000508	mg/L	05.12.14 20:24	J	1
Benzene	71-43-2	**0.000340**	0.00100	0.000147	mg/L	05.12.14 20:24	J	1
Toluene	108-88-3	**0.000440**	0.00100	0.000153	mg/L	05.12.14 20:24	BJ	1
Ethylbenzene	100-41-4	**0.000120**	0.00100	0.0000806	mg/L	05.12.14 20:24	J	1
m,p-Xylenes	179601-23-1	**0.000370**	0.00200	0.000366	mg/L	05.12.14 20:24	J	1
o-Xylene	95-47-6	**0.000230**	0.00100	0.0000975	mg/L	05.12.14 20:24	J	1
Total Xylenes	1330-20-7	**0.000600**		0.0000975	mg/L	05.12.14 20:24	J	
Total BTEX		**0.00150**		0.0000806	mg/L	05.12.14 20:24		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
Dibromofluoromethane	100	75 - 131	%		
1,2-Dichloroethane-D4	88	63 - 144	%		
Toluene-D8	103	80 - 117	%		
4-Bromofluorobenzene	98	74 - 124	%		

Certificate of Analytical Results

484963

Geotest Engineering, Inc., Houston, TX

NSR-456

Sample Id: **EB-5** Matrix: Water Sample Depth:

Lab Sample Id: 484963-008 Date Collected: 05.07.14 12.30 Date Received: 05.08.14 18.37

Analytical Method: TPH by Texas1005 Prep Method: 1005

Analyst: FOV % Moist: Tech: FOV

Seq Number: 940857 Date Prep: 05.13.14 11.47

Prep seq: 655361

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
C6-C12 Gasoline Range Hydrocarbons	PHC612	<0.145	4.55	0.145	mg/L	05.13.14 20:07	U	1
C12 - C28 Diesel Range Hydrocarbons	PHCG1028	<0.149	4.55	0.149	mg/L	05.13.14 20:07	U	1
C28-C35 Oil Range Hydrocarbons	PHCG2835	<0.0920	4.55	0.0920	mg/L	05.13.14 20:07	U	1
Total TPH 1005	PHC635	<0.0920		0.0920	mg/L	05.13.14 20:07	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
o-Terphenyl	88	70 - 130	%		
1-Chlorooctane	98	70 - 130	%		

Analytical Method: BTEX-MTBE by SW 8260B Prep Method: 5030B

Analyst: SAD % Moist: Tech: SAD

Seq Number: 940879 Date Prep: 05.12.14 17.34

Prep seq: 655422

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
MTBE	1634-04-4	<0.000508	0.00500	0.000508	mg/L	05.12.14 20:48	U	1
Benzene	71-43-2	<0.000147	0.00100	0.000147	mg/L	05.12.14 20:48	U	1
Toluene	108-88-3	**0.000260**	0.00100	0.000153	mg/L	05.12.14 20:48	BJ	1
Ethylbenzene	100-41-4	<0.0000806	0.00100	0.0000806	mg/L	05.12.14 20:48	U	1
m,p-Xylenes	179601-23-1	<0.000366	0.00200	0.000366	mg/L	05.12.14 20:48	U	1
o-Xylene	95-47-6	<0.0000975	0.00100	0.0000975	mg/L	05.12.14 20:48	U	1
Total Xylenes	1330-20-7	<0.0000975		0.0000975	mg/L	05.12.14 20:48	U	
Total BTEX		**0.000260**		0.0000806	mg/L	05.12.14 20:48	J	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
Dibromofluoromethane	102	75 - 131	%		
1,2-Dichloroethane-D4	89	63 - 144	%		
Toluene-D8	106	80 - 117	%		
4-Bromofluorobenzene	92	74 - 124	%		

Certificate of Analytical Results

484963

Geotest Engineering, Inc., Houston, TX

NSR-456

Sample Id: **Composite**
Matrix: Soil
Sample Depth:

Lab Sample Id: 484963-009
Date Collected: 05.07.14 00.00
Date Received: 05.08.14 18.37

Analytical Method: TPH by Texas1005
Prep Method: 1005

Analyst: FOV
% Moist: 18.2
Tech: FOV

Seq Number: 940794
Date Prep: 05.12.14 14.56

Prep seq: 655283

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
C6-C12 Gasoline Range Hydrocarbons	PHC612	<2.88	60.9	2.88	mg/kg	05.13.14 16:57	U	1
C12 - C28 Diesel Range Hydrocarbons	PHCG1028	<1.97	60.9	1.97	mg/kg	05.13.14 16:57	U	1
C28-C35 Oil Range Hydrocarbons	PHCG2835	<0.825	60.9	0.825	mg/kg	05.13.14 16:57	U	1
Total TPH 1005	PHC635	<0.825		0.825	mg/kg	05.13.14 16:57	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
o-Terphenyl	98	70 - 130	%		
1-Chlorooctane	106	70 - 130	%		

Certificate of Analytical Results

484963

Geotest Engineering, Inc., Houston, TX

NSR-456

Sample Id: **Composite** Matrix: Soil Sample Depth:

Lab Sample Id: 484963-009 Date Collected: 05.07.14 00.00 Date Received: 05.08.14 18.37

Analytical Method: VOAs by SW-846 8260 Prep Method: 5030B

Analyst: MCH % Moist: 18.2 Tech: MCH

Seq Number: 940647 Date Prep: 05.10.14 17.00

Prep seq: 655267

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000194	0.00617	0.000194	mg/kg	05.10.14 18:01	U	1
Bromobenzene	108-86-1	<0.000541	0.00617	0.000541	mg/kg	05.10.14 18:01	U	1
Bromochloromethane	74-97-5	<0.000587	0.00617	0.000587	mg/kg	05.10.14 18:01	U	1
Bromodichloromethane	75-27-4	<0.000328	0.00617	0.000328	mg/kg	05.10.14 18:01	U	1
Bromoform	75-25-2	<0.000862	0.00617	0.000862	mg/kg	05.10.14 18:01	U	1
Methyl bromide	74-83-9	<0.00130	0.00617	0.00130	mg/kg	05.10.14 18:01	UH	1
tert-Butylbenzene	98-06-6	<0.000255	0.00617	0.000255	mg/kg	05.10.14 18:01	U	1
Sec-Butylbenzene	135-98-8	<0.000605	0.00617	0.000605	mg/kg	05.10.14 18:01	UX	1
n-Butylbenzene	104-51-8	<0.000580	0.00617	0.000580	mg/kg	05.10.14 18:01	U	1
Carbon Tetrachloride	56-23-5	<0.000288	0.00617	0.000288	mg/kg	05.10.14 18:01	U	1
Chlorobenzene	108-90-7	<0.000295	0.00617	0.000295	mg/kg	05.10.14 18:01	U	1
Chloroethane	75-00-3	<0.000677	0.0123	0.000677	mg/kg	05.10.14 18:01	U	1
Chloroform	67-66-3	<0.000361	0.00617	0.000361	mg/kg	05.10.14 18:01	U	1
Methyl Chloride	74-87-3	<0.000369	0.0123	0.000369	mg/kg	05.10.14 18:01	UH	1
2-Chlorotoluene	95-49-8	<0.000485	0.00617	0.000485	mg/kg	05.10.14 18:01	U	1
4-Chlorotoluene	106-43-4	<0.000542	0.00617	0.000542	mg/kg	05.10.14 18:01	U	1
p-Cymene (p-Isopropyltoluene)	99-87-6	<0.000519	0.00617	0.000519	mg/kg	05.10.14 18:01	UX	1
1,2-Dibromo-3-Chloropropane	96-12-8	<0.00192	0.00617	0.00192	mg/kg	05.10.14 18:01	U	1
Dibromochloromethane	124-48-1	<0.000584	0.00617	0.000584	mg/kg	05.10.14 18:01	U	1
1,2-Dibromoethane	106-93-4	<0.000523	0.00617	0.000523	mg/kg	05.10.14 18:01	U	1
Methylene bromide	74-95-3	<0.000435	0.00617	0.000435	mg/kg	05.10.14 18:01	U	1
1,2-Dichlorobenzene	95-50-1	<0.000532	0.00617	0.000532	mg/kg	05.10.14 18:01	U	1
1,3-Dichlorobenzene	541-73-1	<0.000459	0.00617	0.000459	mg/kg	05.10.14 18:01	U	1
1,4-Dichlorobenzene	106-46-7	<0.000293	0.00617	0.000293	mg/kg	05.10.14 18:01	U	1
Dichlorodifluoromethane	75-71-8	<0.000526	0.00617	0.000526	mg/kg	05.10.14 18:01	U	1
1,2-Dichloroethane	107-06-2	<0.000433	0.00617	0.000433	mg/kg	05.10.14 18:01	U	1
1,1-Dichloroethane	75-34-3	<0.000248	0.00617	0.000248	mg/kg	05.10.14 18:01	U	1
trans-1,2-dichloroethylene	156-60-5	<0.000361	0.00617	0.000361	mg/kg	05.10.14 18:01	U	1
cis-1,2-Dichloroethylene	156-59-2	<0.000420	0.00617	0.000420	mg/kg	05.10.14 18:01	U	1
1,1-Dichloroethene	75-35-4	<0.000293	0.00617	0.000293	mg/kg	05.10.14 18:01	U	1
2,2-Dichloropropane	594-20-7	<0.00146	0.00617	0.00146	mg/kg	05.10.14 18:01	UX	1
1,3-Dichloropropane	142-28-9	<0.000309	0.00617	0.000309	mg/kg	05.10.14 18:01	U	1
1,2-Dichloropropane	78-87-5	<0.000583	0.00617	0.000583	mg/kg	05.10.14 18:01	U	1
trans-1,3-dichloropropene	10061-02-6	<0.000375	0.00617	0.000375	mg/kg	05.10.14 18:01	U	1
1,1-Dichloropropene	563-58-6	<0.000522	0.00617	0.000522	mg/kg	05.10.14 18:01	UX	1
cis-1,3-Dichloropropene	10061-01-5	<0.000528	0.00617	0.000528	mg/kg	05.10.14 18:01	U	1
Ethylbenzene	100-41-4	<0.000531	0.00617	0.000531	mg/kg	05.10.14 18:01	U	1
Hexachlorobutadiene	87-68-3	<0.00107	0.00617	0.00107	mg/kg	05.10.14 18:01	UX	1
Isopropylbenzene	98-82-8	<0.000207	0.00617	0.000207	mg/kg	05.10.14 18:01	UX	1
Methylene Chloride	75-09-2	<0.000727	0.0247	0.000727	mg/kg	05.10.14 18:01	U	1
MTBE	1634-04-4	<0.000420	0.00617	0.000420	mg/kg	05.10.14 18:01	U	1
Naphthalene	91-20-3	<0.000335	0.0123	0.000335	mg/kg	05.10.14 18:01	U	1
n-Propylbenzene	103-65-1	<0.000221	0.00617	0.000221	mg/kg	05.10.14 18:01	U	1

Certificate of Analytical Results

484963

Geotest Engineering, Inc., Houston, TX

NSR-456

Sample Id: **Composite** Matrix: Soil Sample Depth:

Lab Sample Id: 484963-009 Date Collected: 05.07.14 00.00 Date Received: 05.08.14 18.37

Analytical Method: VOAs by SW-846 8260 Prep Method: 5030B

Analyst: MCH % Moist: 18.2 Tech: MCH

Seq Number: 940647 Date Prep: 05.10.14 17.00

Prep seq: 655267

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Styrene	100-42-5	<0.000185	0.00617	0.000185	mg/kg	05.10.14 18:01	U	1
1,1,1,2-Tetrachloroethane	630-20-6	<0.000502	0.00617	0.000502	mg/kg	05.10.14 18:01	U	1
1,1,2,2-Tetrachloroethane	79-34-5	<0.000566	0.00617	0.000566	mg/kg	05.10.14 18:01	U	1
Tetrachloroethylene	127-18-4	<0.000316	0.00617	0.000316	mg/kg	05.10.14 18:01	UX	1
Toluene	108-88-3	<0.000138	0.00617	0.000138	mg/kg	05.10.14 18:01	U	1
1,2,3-Trichlorobenzene	87-61-6	<0.000300	0.00617	0.000300	mg/kg	05.10.14 18:01	U	1
1,2,4-Trichlorobenzene	120-82-1	<0.000536	0.00617	0.000536	mg/kg	05.10.14 18:01	U	1
1,1,2-Trichloroethane	79-00-5	<0.000402	0.00617	0.000402	mg/kg	05.10.14 18:01	U	1
1,1,1-Trichloroethane	71-55-6	<0.000418	0.00617	0.000418	mg/kg	05.10.14 18:01	UX	1
Trichloroethylene	79-01-6	<0.000404	0.00617	0.000404	mg/kg	05.10.14 18:01	U	1
Trichlorofluoromethane	75-69-4	<0.000599	0.00617	0.000599	mg/kg	05.10.14 18:01	U	1
1,2,3-Trichloropropane	96-18-4	<0.000866	0.00617	0.000866	mg/kg	05.10.14 18:01	U	1
1,2,4-Trimethylbenzene	95-63-6	<0.000139	0.00617	0.000139	mg/kg	05.10.14 18:01	U	1
1,3,5-Trimethylbenzene	108-67-8	<0.000491	0.00617	0.000491	mg/kg	05.10.14 18:01	U	1
Vinyl Chloride	75-01-4	<0.00102	0.00247	0.00102	mg/kg	05.10.14 18:01	U	1
o-Xylene	95-47-6	<0.000344	0.00617	0.000344	mg/kg	05.10.14 18:01	U	1
m,p-Xylenes	179601-23-1	<0.000477	0.0123	0.000477	mg/kg	05.10.14 18:01	U	1

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
Dibromofluoromethane	102	53 - 142	%		
1,2-Dichloroethane-D4	100	56 - 150	%		
Toluene-D8	103	70 - 130	%		
4-Bromofluorobenzene	101	68 - 152	%		

Certificate of Analytical Results

484963

Geotest Engineering, Inc., Houston, TX

NSR-456

Sample Id: **655212-1-BLK** Matrix: Solid Sample Depth:

Lab Sample Id: 655212-1-BLK Date Collected: Date Received:

Analytical Method: BTEX-MTBE by SW 8260B Prep Method: 5030B

Analyst: SAD % Moist: Tech: SAD

Seq Number: 940548 Date Prep: 05.09.14 11.00

Prep seq: 655212

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
MTBE	1634-04-4	<0.000589	0.00500	0.000589	mg/kg	05.09.14 11:35	U	1
Benzene	71-43-2	<0.000192	0.00100	0.000192	mg/kg	05.09.14 11:35	U	1
Toluene	108-88-3	<0.000129	0.00100	0.000129	mg/kg	05.09.14 11:35	U	1
Ethylbenzene	100-41-4	<0.0000955	0.00100	0.0000955	mg/kg	05.09.14 11:35	U	1
m,p-Xylenes	179601-23-1	<0.000362	0.00200	0.000362	mg/kg	05.09.14 11:35	U	1
o-Xylene	95-47-6	<0.000229	0.00100	0.000229	mg/kg	05.09.14 11:35	U	1

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
Dibromofluoromethane	99	74 - 126	%		
1,2-Dichloroethane-D4	93	80 - 120	%		
Toluene-D8	101	73 - 132	%		
4-Bromofluorobenzene	104	58 - 152	%		

Certificate of Analytical Results

484963

Geotest Engineering, Inc., Houston, TX

NSR-456

Sample Id: **655267-1-BLK** Matrix: Solid Sample Depth:

Lab Sample Id: 655267-1-BLK Date Collected: Date Received:

Analytical Method: VOAs by SW-846 8260 Prep Method: 5030B

Analyst: MCH % Moist: Tech: MCH

Seq Number: 940647 Date Prep: 05.10.14 16.45

Prep seq: 655267

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000157	0.00500	0.000157	mg/kg	05.10.14 17:10	U	1
Bromobenzene	108-86-1	<0.000438	0.00500	0.000438	mg/kg	05.10.14 17:10	U	1
Bromochloromethane	74-97-5	<0.000475	0.00500	0.000475	mg/kg	05.10.14 17:10	U	1
Bromodichloromethane	75-27-4	<0.000265	0.00500	0.000265	mg/kg	05.10.14 17:10	U	1
Bromoform	75-25-2	<0.000698	0.00500	0.000698	mg/kg	05.10.14 17:10	U	1
Methyl bromide	74-83-9	<0.00106	0.00500	0.00106	mg/kg	05.10.14 17:10	U	1
tert-Butylbenzene	98-06-6	<0.000206	0.00500	0.000206	mg/kg	05.10.14 17:10	U	1
Sec-Butylbenzene	135-98-8	<0.000490	0.00500	0.000490	mg/kg	05.10.14 17:10	U	1
n-Butylbenzene	104-51-8	<0.000470	0.00500	0.000470	mg/kg	05.10.14 17:10	U	1
Carbon Tetrachloride	56-23-5	<0.000234	0.00500	0.000234	mg/kg	05.10.14 17:10	U	1
Chlorobenzene	108-90-7	<0.000239	0.00500	0.000239	mg/kg	05.10.14 17:10	U	1
Chloroethane	75-00-3	<0.000549	0.0100	0.000549	mg/kg	05.10.14 17:10	U	1
Chloroform	67-66-3	<0.000292	0.00500	0.000292	mg/kg	05.10.14 17:10	U	1
Methyl Chloride	74-87-3	<0.000299	0.0100	0.000299	mg/kg	05.10.14 17:10	U	1
2-Chlorotoluene	95-49-8	<0.000392	0.00500	0.000392	mg/kg	05.10.14 17:10	U	1
4-Chlorotoluene	106-43-4	<0.000439	0.00500	0.000439	mg/kg	05.10.14 17:10	U	1
p-Cymene (p-Isopropyltoluene)	99-87-6	<0.000420	0.00500	0.000420	mg/kg	05.10.14 17:10	U	1
1,2-Dibromo-3-Chloropropane	96-12-8	<0.00155	0.00500	0.00155	mg/kg	05.10.14 17:10	U	1
Dibromochloromethane	124-48-1	<0.000473	0.00500	0.000473	mg/kg	05.10.14 17:10	U	1
1,2-Dibromoethane	106-93-4	<0.000423	0.00500	0.000423	mg/kg	05.10.14 17:10	U	1
Methylene bromide	74-95-3	<0.000352	0.00500	0.000352	mg/kg	05.10.14 17:10	U	1
1,2-Dichlorobenzene	95-50-1	<0.000431	0.00500	0.000431	mg/kg	05.10.14 17:10	U	1
1,3-Dichlorobenzene	541-73-1	<0.000371	0.00500	0.000371	mg/kg	05.10.14 17:10	U	1
1,4-Dichlorobenzene	106-46-7	<0.000238	0.00500	0.000238	mg/kg	05.10.14 17:10	U	1
Dichlorodifluoromethane	75-71-8	<0.000426	0.00500	0.000426	mg/kg	05.10.14 17:10	U	1
1,2-Dichloroethane	107-06-2	<0.000351	0.00500	0.000351	mg/kg	05.10.14 17:10	U	1
1,1-Dichloroethane	75-34-3	<0.000201	0.00500	0.000201	mg/kg	05.10.14 17:10	U	1
trans-1,2-dichloroethylene	156-60-5	<0.000292	0.00500	0.000292	mg/kg	05.10.14 17:10	U	1
cis-1,2-Dichloroethylene	156-59-2	<0.000340	0.00500	0.000340	mg/kg	05.10.14 17:10	U	1
1,1-Dichloroethene	75-35-4	<0.000237	0.00500	0.000237	mg/kg	05.10.14 17:10	U	1
2,2-Dichloropropane	594-20-7	<0.00118	0.00500	0.00118	mg/kg	05.10.14 17:10	U	1
1,3-Dichloropropane	142-28-9	<0.000250	0.00500	0.000250	mg/kg	05.10.14 17:10	U	1
1,2-Dichloropropane	78-87-5	<0.000472	0.00500	0.000472	mg/kg	05.10.14 17:10	U	1
trans-1,3-dichloropropene	10061-02-6	<0.000303	0.00500	0.000303	mg/kg	05.10.14 17:10	U	1
1,1-Dichloropropene	563-58-6	<0.000423	0.00500	0.000423	mg/kg	05.10.14 17:10	U	1
cis-1,3-Dichloropropene	10061-01-5	<0.000428	0.00500	0.000428	mg/kg	05.10.14 17:10	U	1
Ethylbenzene	100-41-4	<0.000430	0.00500	0.000430	mg/kg	05.10.14 17:10	U	1
Hexachlorobutadiene	87-68-3	<0.000863	0.00500	0.000863	mg/kg	05.10.14 17:10	U	1
Isopropylbenzene	98-82-8	<0.000167	0.00500	0.000167	mg/kg	05.10.14 17:10	U	1
Methylene Chloride	75-09-2	<0.000588	0.0200	0.000588	mg/kg	05.10.14 17:10	U	1
MTBE	1634-04-4	<0.000340	0.00500	0.000340	mg/kg	05.10.14 17:10	U	1
Naphthalene	91-20-3	<0.000271	0.0100	0.000271	mg/kg	05.10.14 17:10	U	1
n-Propylbenzene	103-65-1	<0.000179	0.00500	0.000179	mg/kg	05.10.14 17:10	U	1

Certificate of Analytical Results

484963

Geotest Engineering, Inc., Houston, TX

NSR-456

Sample Id: **655267-1-BLK** Matrix: Solid Sample Depth:

Lab Sample Id: 655267-1-BLK Date Collected: Date Received:

Analytical Method: VOAs by SW-846 8260 Prep Method: 5030B

Analyst: MCH % Moist: Tech: MCH

Seq Number: 940647 Date Prep: 05.10.14 16.45

Prep seq: 655267

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Styrene	100-42-5	<0.000150	0.00500	0.000150	mg/kg	05.10.14 17:10	U	1
1,1,1,2-Tetrachloroethane	630-20-6	<0.000407	0.00500	0.000407	mg/kg	05.10.14 17:10	U	1
1,1,2,2-Tetrachloroethane	79-34-5	<0.000459	0.00500	0.000459	mg/kg	05.10.14 17:10	U	1
Tetrachloroethylene	127-18-4	<0.000256	0.00500	0.000256	mg/kg	05.10.14 17:10	U	1
Toluene	108-88-3	<0.000112	0.00500	0.000112	mg/kg	05.10.14 17:10	U	1
1,2,3-Trichlorobenzene	87-61-6	<0.000243	0.00500	0.000243	mg/kg	05.10.14 17:10	U	1
1,2,4-Trichlorobenzene	120-82-1	<0.000434	0.00500	0.000434	mg/kg	05.10.14 17:10	U	1
1,1,2-Trichloroethane	79-00-5	<0.000326	0.00500	0.000326	mg/kg	05.10.14 17:10	U	1
1,1,1-Trichloroethane	71-55-6	<0.000339	0.00500	0.000339	mg/kg	05.10.14 17:10	U	1
Trichloroethylene	79-01-6	<0.000327	0.00500	0.000327	mg/kg	05.10.14 17:10	U	1
Trichlorofluoromethane	75-69-4	<0.000485	0.00500	0.000485	mg/kg	05.10.14 17:10	U	1
1,2,3-Trichloropropane	96-18-4	<0.000701	0.00500	0.000701	mg/kg	05.10.14 17:10	U	1
1,2,4-Trimethylbenzene	95-63-6	<0.000113	0.00500	0.000113	mg/kg	05.10.14 17:10	U	1
1,3,5-Trimethylbenzene	108-67-8	<0.000397	0.00500	0.000397	mg/kg	05.10.14 17:10	U	1
Vinyl Chloride	75-01-4	<0.000827	0.00200	0.000827	mg/kg	05.10.14 17:10	U	1
o-Xylene	95-47-6	<0.000279	0.00500	0.000279	mg/kg	05.10.14 17:10	U	1
m,p-Xylenes	179601-23-1	<0.000386	0.0100	0.000386	mg/kg	05.10.14 17:10	U	1

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
Dibromofluoromethane	103	53 - 142	%		
1,2-Dichloroethane-D4	102	56 - 150	%		
Toluene-D8	102	70 - 130	%		
4-Bromofluorobenzene	99	68 - 152	%		

Certificate of Analytical Results

484963

Geotest Engineering, Inc., Houston, TX

NSR-456

Sample Id: **655273-1-BLK** Matrix: Solid Sample Depth:

Lab Sample Id: 655273-1-BLK Date Collected: Date Received:

Analytical Method: BTEX-MTBE by SW 8260B Prep Method: 5030B

Analyst: SAD % Moist: Tech: SAD

Seq Number: 940670 Date Prep: 05.12.14 11.30

Prep seq: 655273

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
MTBE	1634-04-4	<0.000589	0.00500	0.000589	mg/kg	05.12.14 12:21	U	1
Benzene	71-43-2	<0.000192	0.00100	0.000192	mg/kg	05.12.14 12:21	U	1
Toluene	108-88-3	**0.000390**	0.00100	0.000129	mg/kg	05.12.14 12:21	J	1
Ethylbenzene	100-41-4	<0.0000955	0.00100	0.0000955	mg/kg	05.12.14 12:21	U	1
m,p-Xylenes	179601-23-1	<0.000362	0.00200	0.000362	mg/kg	05.12.14 12:21	U	1
o-Xylene	95-47-6	<0.000229	0.00100	0.000229	mg/kg	05.12.14 12:21	U	1

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
Dibromofluoromethane	105	74 - 126	%		
1,2-Dichloroethane-D4	109	80 - 120	%		
Toluene-D8	99	73 - 132	%		
4-Bromofluorobenzene	102	58 - 152	%		

Sample Id: **655283-1-BLK** Matrix: Solid Sample Depth:

Lab Sample Id: 655283-1-BLK Date Collected: Date Received:

Analytical Method: TPH by Texas1005 Prep Method: 1005

Analyst: FOV % Moist: Tech: FOV

Seq Number: 940794 Date Prep: 05.12.14 14.20

Prep seq: 655283

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
C6-C12 Gasoline Range Hydrocarbons	PHC612	<2.36	50.0	2.36	mg/kg	05.13.14 03:39	U	1
C12 - C28 Diesel Range Hydrocarbons	PHCG1028	<1.62	50.0	1.62	mg/kg	05.13.14 03:39	U	1
C28-C35 Oil Range Hydrocarbons	PHCG2835	<0.678	50.0	0.678	mg/kg	05.13.14 03:39	U	1

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
o-Terphenyl	104	70 - 130	%		
1-Chlorooctane	112	70 - 130	%		

Certificate of Analytical Results

484963

Geotest Engineering, Inc., Houston, TX

NSR-456

Sample Id: **655352-1-BLK** Matrix: Solid Sample Depth:

Lab Sample Id: 655352-1-BLK Date Collected: Date Received:

Analytical Method: BTEX-MTBE by SW 8260B Prep Method: 5030B

Analyst: SAD % Moist: Tech: SAD

Seq Number: 940780 Date Prep: 05.13.14 11.00

Prep seq: 655352

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
MTBE	1634-04-4	<0.000589	0.00500	0.000589	mg/kg	05.13.14 12:32	U	1
Benzene	71-43-2	<0.000192	0.00100	0.000192	mg/kg	05.13.14 12:32	U	1
Toluene	108-88-3	<0.000129	0.00100	0.000129	mg/kg	05.13.14 12:32	U	1
Ethylbenzene	100-41-4	<0.0000955	0.00100	0.0000955	mg/kg	05.13.14 12:32	U	1
m,p-Xylenes	179601-23-1	<0.000362	0.00200	0.000362	mg/kg	05.13.14 12:32	U	1
o-Xylene	95-47-6	<0.000229	0.00100	0.000229	mg/kg	05.13.14 12:32	U	1

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
Dibromofluoromethane	102	74 - 126	%		
1,2-Dichloroethane-D4	110	80 - 120	%		
Toluene-D8	100	73 - 132	%		
4-Bromofluorobenzene	113	58 - 152	%		

Sample Id: **655361-1-BLK** Matrix: Water Sample Depth:

Lab Sample Id: 655361-1-BLK Date Collected: Date Received:

Analytical Method: TPH by Texas1005 Prep Method: 1005

Analyst: FOV % Moist: Tech: FOV

Seq Number: 940857 Date Prep: 05.13.14 11.20

Prep seq: 655361

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
C6-C12 Gasoline Range Hydrocarbons	PHC612	<0.160	5.00	0.160	mg/L	05.13.14 17:16	U	1
C12 - C28 Diesel Range Hydrocarbons	PHCG1028	<0.164	5.00	0.164	mg/L	05.13.14 17:16	U	1
C28-C35 Oil Range Hydrocarbons	PHCG2835	<0.101	5.00	0.101	mg/L	05.13.14 17:16	U	1

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
o-Terphenyl	80	70 - 130	%		
1-Chlorooctane	85	70 - 130	%		

Certificate of Analytical Results

484963

Geotest Engineering, Inc., Houston, TX

NSR-456

Sample Id: **655422-1-BLK** Matrix: Water Sample Depth:

Lab Sample Id: 655422-1-BLK Date Collected: Date Received:

Analytical Method: BTEX-MTBE by SW 8260B Prep Method: 5030B

Analyst: SAD % Moist: Tech: SAD

Seq Number: 940879 Date Prep: 05.12.14 14.14

Prep seq: 655422

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
MTBE	1634-04-4	<0.000508	0.00500	0.000508	mg/L	05.12.14 14:30	U	1
Benzene	71-43-2	<0.000147	0.00100	0.000147	mg/L	05.12.14 14:30	U	1
Toluene	108-88-3	**0.000260**	0.00100	0.000153	mg/L	05.12.14 14:30	J	1
Ethylbenzene	100-41-4	<0.0000806	0.00100	0.0000806	mg/L	05.12.14 14:30	U	1
m,p-Xylenes	179601-23-1	<0.000366	0.00200	0.000366	mg/L	05.12.14 14:30	U	1
o-Xylene	95-47-6	<0.0000975	0.00100	0.0000975	mg/L	05.12.14 14:30	U	1

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
Dibromofluoromethane	100	75 - 131	%		
1,2-Dichloroethane-D4	90	63 - 144	%		
Toluene-D8	91	80 - 117	%		
4-Bromofluorobenzene	93	74 - 124	%		

Flagging Criteria

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

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

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

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

F RPD exceeded lab control limits.

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

U Analyte was not detected.

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

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

K Sample analyzed outside of recommended hold time.

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

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

+ NELAC certification not offered for this compound.

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

Form 2 - Surrogate Recoveries

Project Name: NSR-456

Work Orders : 484963, **Project ID:** 1130020101

Lab Batch #: 940548 **Sample:** 655212-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 05/09/14 09:48

SURROGATE RECOVERY STUDY

BTEX-MTBE by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0521	0.0500	104	74-126	
1,2-Dichloroethane-D4	0.0479	0.0500	96	80-120	
Toluene-D8	0.0541	0.0500	108	73-132	
4-Bromofluorobenzene	0.0521	0.0500	104	58-152	

Lab Batch #: 940548 **Sample:** 655212-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 05/09/14 11:35

SURROGATE RECOVERY STUDY

BTEX-MTBE by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0497	0.0500	99	74-126	
1,2-Dichloroethane-D4	0.0466	0.0500	93	80-120	
Toluene-D8	0.0504	0.0500	101	73-132	
4-Bromofluorobenzene	0.0521	0.0500	104	58-152	

Lab Batch #: 940548 **Sample:** 484956-007 S / MS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 05/09/14 15:01

SURROGATE RECOVERY STUDY

BTEX-MTBE by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0509	0.0500	102	74-126	
1,2-Dichloroethane-D4	0.0447	0.0500	89	80-120	
Toluene-D8	0.0567	0.0500	113	73-132	
4-Bromofluorobenzene	0.0481	0.0500	96	58-152	

Lab Batch #: 940548 **Sample:** 484956-007 SD / MSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 05/09/14 15:27

SURROGATE RECOVERY STUDY

BTEX-MTBE by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0499	0.0500	100	74-126	
1,2-Dichloroethane-D4	0.0479	0.0500	96	80-120	
Toluene-D8	0.0612	0.0500	122	73-132	
4-Bromofluorobenzene	0.0584	0.0500	117	58-152	

* 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: NSR-456

Work Orders : 484963, **Project ID:** 1130020101

Lab Batch #: 940670 **Sample:** 655273-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 05/12/14 10:39

SURROGATE RECOVERY STUDY

BTEX-MTBE by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0511	0.0500	102	74-126	
1,2-Dichloroethane-D4	0.0469	0.0500	94	80-120	
Toluene-D8	0.0531	0.0500	106	73-132	
4-Bromofluorobenzene	0.0542	0.0500	108	58-152	

Lab Batch #: 940670 **Sample:** 655273-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 05/12/14 12:21

SURROGATE RECOVERY STUDY

BTEX-MTBE by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0527	0.0500	105	74-126	
1,2-Dichloroethane-D4	0.0547	0.0500	109	80-120	
Toluene-D8	0.0495	0.0500	99	73-132	
4-Bromofluorobenzene	0.0508	0.0500	102	58-152	

Lab Batch #: 940670 **Sample:** 485054-001 S / MS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 05/12/14 13:39

SURROGATE RECOVERY STUDY

BTEX-MTBE by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0481	0.0500	96	74-126	
1,2-Dichloroethane-D4	0.0476	0.0500	95	80-120	
Toluene-D8	0.0574	0.0500	115	73-132	
4-Bromofluorobenzene	0.0609	0.0500	122	58-152	

Lab Batch #: 940670 **Sample:** 485054-001 SD / MSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 05/12/14 14:04

SURROGATE RECOVERY STUDY

BTEX-MTBE by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0463	0.0500	93	74-126	
1,2-Dichloroethane-D4	0.0460	0.0500	92	80-120	
Toluene-D8	0.0550	0.0500	110	73-132	
4-Bromofluorobenzene	0.0612	0.0500	122	58-152	

* 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: NSR-456

Work Orders : 484963, **Project ID:** 1130020101

Lab Batch #: 940780 **Sample:** 655352-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 05/13/14 11:16

SURROGATE RECOVERY STUDY

BTEX-MTBE by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0528	0.0500	106	74-126	
1,2-Dichloroethane-D4	0.0567	0.0500	113	80-120	
Toluene-D8	0.0550	0.0500	110	73-132	
4-Bromofluorobenzene	0.0543	0.0500	109	58-152	

Lab Batch #: 940780 **Sample:** 655352-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 05/13/14 12:32

SURROGATE RECOVERY STUDY

BTEX-MTBE by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0508	0.0500	102	74-126	
1,2-Dichloroethane-D4	0.0548	0.0500	110	80-120	
Toluene-D8	0.0501	0.0500	100	73-132	
4-Bromofluorobenzene	0.0563	0.0500	113	58-152	

Lab Batch #: 940780 **Sample:** 484963-004 S / MS **Batch:** 1 **Matrix:** Soil

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

SURROGATE RECOVERY STUDY

BTEX-MTBE by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0546	0.0500	109	74-126	
1,2-Dichloroethane-D4	0.0571	0.0500	114	80-120	
Toluene-D8	0.0497	0.0500	99	73-132	
4-Bromofluorobenzene	0.0541	0.0500	108	58-152	

Lab Batch #: 940780 **Sample:** 484963-004 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/13/14 14:40

SURROGATE RECOVERY STUDY

BTEX-MTBE by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0547	0.0500	109	74-126	
1,2-Dichloroethane-D4	0.0539	0.0500	108	80-120	
Toluene-D8	0.0536	0.0500	107	73-132	
4-Bromofluorobenzene	0.0548	0.0500	110	58-152	

* 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: NSR-456

Work Orders : 484963, **Project ID:** 1130020101

Lab Batch #: 940879 **Sample:** 655422-1-BKS / BKS **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 05/12/14 11:46

SURROGATE RECOVERY STUDY

BTEX-MTBE by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0513	0.0500	103	75-131	
1,2-Dichloroethane-D4	0.0454	0.0500	91	63-144	
Toluene-D8	0.0491	0.0500	98	80-117	
4-Bromofluorobenzene	0.0496	0.0500	99	74-124	

Lab Batch #: 940879 **Sample:** 655422-1-BLK / BLK **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 05/12/14 14:30

SURROGATE RECOVERY STUDY

BTEX-MTBE by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0501	0.0500	100	75-131	
1,2-Dichloroethane-D4	0.0448	0.0500	90	63-144	
Toluene-D8	0.0457	0.0500	91	80-117	
4-Bromofluorobenzene	0.0465	0.0500	93	74-124	

Lab Batch #: 940879 **Sample:** 484880-016 S / MS **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 05/12/14 18:19

SURROGATE RECOVERY STUDY

BTEX-MTBE by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0486	0.0500	97	75-131	
1,2-Dichloroethane-D4	0.0444	0.0500	89	63-144	
Toluene-D8	0.0504	0.0500	101	80-117	
4-Bromofluorobenzene	0.0518	0.0500	104	74-124	

Lab Batch #: 940879 **Sample:** 484880-016 SD / MSD **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 05/12/14 18:44

SURROGATE RECOVERY STUDY

BTEX-MTBE by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0493	0.0500	99	75-131	
1,2-Dichloroethane-D4	0.0462	0.0500	92	63-144	
Toluene-D8	0.0545	0.0500	109	80-117	
4-Bromofluorobenzene	0.0470	0.0500	94	74-124	

* 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: NSR-456

Work Orders : 484963, **Project ID:** 1130020101

Lab Batch #: 940794 **Sample:** 655283-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 05/13/14 03:39

SURROGATE RECOVERY STUDY

TPH by Texas1005 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
o-Terphenyl	52.0	50.0	104	70-130	
1-Chlorooctane	112	100	112	70-130	

Lab Batch #: 940794 **Sample:** 655283-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 05/13/14 03:59

SURROGATE RECOVERY STUDY

TPH by Texas1005 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
o-Terphenyl	55.3	50.0	111	70-130	
1-Chlorooctane	113	100	113	70-130	

Lab Batch #: 940794 **Sample:** 655283-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 05/13/14 04:18

SURROGATE RECOVERY STUDY

TPH by Texas1005 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
o-Terphenyl	57.4	50.0	115	70-130	
1-Chlorooctane	118	100	118	70-130	

Lab Batch #: 940794 **Sample:** 484869-006 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/13/14 04:56

SURROGATE RECOVERY STUDY

TPH by Texas1005 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
o-Terphenyl	57.0	49.8	114	70-130	
1-Chlorooctane	118	99.5	119	70-130	

Lab Batch #: 940794 **Sample:** 484869-006 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/13/14 05:15

SURROGATE RECOVERY STUDY

TPH by Texas1005 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
o-Terphenyl	56.1	49.8	113	70-130	
1-Chlorooctane	117	99.5	118	70-130	

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

Form 2 - Surrogate Recoveries

Project Name: NSR-456

Work Orders : 484963, **Project ID:** 1130020101

Lab Batch #: 940857 **Sample:** 655361-1-BLK / BLK **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 05/13/14 17:16

SURROGATE RECOVERY STUDY

TPH by Texas1005 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
o-Terphenyl	4.02	5.00	80	70-130	
1-Chlorooctane	8.53	10.0	85	70-130	

Lab Batch #: 940857 **Sample:** 655361-1-BSD / BSD **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 05/13/14 17:54

SURROGATE RECOVERY STUDY

TPH by Texas1005 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
o-Terphenyl	4.36	5.00	87	70-130	
1-Chlorooctane	9.54	10.0	95	70-130	

Lab Batch #: 940857 **Sample:** 655361-1-BKS / BKS **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 05/14/14 09:50

SURROGATE RECOVERY STUDY

TPH by Texas1005 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
o-Terphenyl	4.71	5.00	94	70-130	
1-Chlorooctane	10.4	10.0	104	70-130	

Lab Batch #: 940647 **Sample:** 655267-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 05/10/14 15:02

SURROGATE RECOVERY STUDY

VOAs by SW-846 8260 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0495	0.0500	99	53-142	
1,2-Dichloroethane-D4	0.0522	0.0500	104	56-150	
Toluene-D8	0.0494	0.0500	99	70-130	
4-Bromofluorobenzene	0.0489	0.0500	98	68-152	

* 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: NSR-456

Work Orders : 484963, **Project ID:** 1130020101

Lab Batch #: 940647 **Sample:** 655267-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 05/10/14 17:10

SURROGATE RECOVERY STUDY

VOAs by SW-846 8260 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0515	0.0500	103	53-142	
1,2-Dichloroethane-D4	0.0508	0.0500	102	56-150	
Toluene-D8	0.0509	0.0500	102	70-130	
4-Bromofluorobenzene	0.0493	0.0500	99	68-152	

Lab Batch #: 940647 **Sample:** 484963-009 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/10/14 19:44

SURROGATE RECOVERY STUDY

VOAs by SW-846 8260 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0505	0.0500	101	53-142	
1,2-Dichloroethane-D4	0.0524	0.0500	105	56-150	
Toluene-D8	0.0500	0.0500	100	70-130	
4-Bromofluorobenzene	0.0506	0.0500	101	68-152	

Lab Batch #: 940647 **Sample:** 484963-009 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/10/14 20:10

SURROGATE RECOVERY STUDY

VOAs by SW-846 8260 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0516	0.0500	103	53-142	
1,2-Dichloroethane-D4	0.0517	0.0500	103	56-150	
Toluene-D8	0.0493	0.0500	99	70-130	
4-Bromofluorobenzene	0.0522	0.0500	104	68-152	

* 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.

Blank Spike Recovery

Project Name: NSR-456

Work Order #: 484963 **Project ID:** 1130020101

Lab Batch #: 940548 **Sample:** 655212-1-BKS **Matrix:** Solid

Date Analyzed: 05/09/2014 **Date Prepared:** 05/09/2014 **Analyst:** SAD

Reporting Units: mg/kg **Batch #:** 1 **BLANK /BLANK SPIKE RECOVERY STUDY**

BTEX-MTBE by SW 8260B Analytes	Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
MTBE	<0.000589	0.500	0.588	118	68-138	
Benzene	<0.000192	0.100	0.0895	90	62-132	
Toluene	<0.000129	0.100	0.101	101	66-124	
Ethylbenzene	<0.0000955	0.100	0.104	104	71-134	
m,p-Xylenes	<0.000362	0.200	0.213	107	69-128	
o-Xylene	<0.000229	0.100	0.104	104	72-131	

Lab Batch #: 940670 **Sample:** 655273-1-BKS **Matrix:** Solid

Date Analyzed: 05/12/2014 **Date Prepared:** 05/12/2014 **Analyst:** SAD

Reporting Units: mg/kg **Batch #:** 1 **BLANK /BLANK SPIKE RECOVERY STUDY**

BTEX-MTBE by SW 8260B Analytes	Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
MTBE	<0.000589	0.500	0.525	105	68-138	
Benzene	<0.000192	0.100	0.107	107	62-132	
Toluene	0.000390	0.100	0.114	114	66-124	
Ethylbenzene	<0.0000955	0.100	0.114	114	71-134	
m,p-Xylenes	<0.000362	0.200	0.236	118	69-128	
o-Xylene	<0.000229	0.100	0.114	114	72-131	

Lab Batch #: 940780 **Sample:** 655352-1-BKS **Matrix:** Solid

Date Analyzed: 05/13/2014 **Date Prepared:** 05/13/2014 **Analyst:** SAD

Reporting Units: mg/kg **Batch #:** 1 **BLANK /BLANK SPIKE RECOVERY STUDY**

BTEX-MTBE by SW 8260B Analytes	Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
MTBE	<0.000589	0.500	0.650	130	68-138	
Benzene	<0.000192	0.100	0.109	109	62-132	
Toluene	<0.000129	0.100	0.108	108	66-124	
Ethylbenzene	<0.0000955	0.100	0.112	112	71-134	
m,p-Xylenes	<0.000362	0.200	0.223	112	69-128	
o-Xylene	<0.000229	0.100	0.109	109	72-131	

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

BRL - Below Reporting Limit

Blank Spike Recovery

Project Name: NSR-456

Work Order #: 484963 **Project ID:** 1130020101

Lab Batch #: 940879 **Sample:** 655422-1-BKS **Matrix:** Water

Date Analyzed: 05/12/2014 **Date Prepared:** 05/12/2014 **Analyst:** SAD

Reporting Units: mg/L **Batch #:** 1 **BLANK /BLANK SPIKE RECOVERY STUDY**

BTEX-MTBE by SW 8260B Analytes	Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
MTBE	<0.000508	0.500	0.492	98	65-135	
Benzene	<0.000147	0.100	0.0917	92	66-142	
Toluene	0.000260	0.100	0.0866	87	59-139	
Ethylbenzene	<0.0000806	0.100	0.0938	94	75-125	
m,p-Xylenes	<0.000366	0.200	0.204	102	75-125	
o-Xylene	<0.0000975	0.100	0.0972	97	75-125	

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

BRL - Below Reporting Limit

Blank Spike Recovery

Project Name: NSR-456

Work Order #: 484963 **Project ID:** 1130020101

Lab Batch #: 940647 **Sample:** 655267-1-BKS **Matrix:** Solid

Date Analyzed: 05/10/2014 **Date Prepared:** 05/10/2014 **Analyst:** MCH

Reporting Units: mg/kg **Batch #:** 1 **BLANK /BLANK SPIKE RECOVERY STUDY**

VOAs by SW-846 8260 Analytes	Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
Benzene	<0.000157	0.0500	0.0480	96	71-119	
Bromobenzene	<0.000438	0.0500	0.0445	89	84-123	
Bromochloromethane	<0.000475	0.0500	0.0525	105	71-120	
Bromodichloromethane	<0.000265	0.0500	0.0505	101	78-126	
Bromoform	<0.000698	0.0500	0.0551	110	63-136	
Methyl bromide	<0.00106	0.0500	0.0604	121	57-118	H
tert-Butylbenzene	<0.000206	0.0500	0.0450	90	83-132	
Sec-Butylbenzene	<0.000490	0.0500	0.0457	91	84-131	
n-Butylbenzene	<0.000470	0.0500	0.0482	96	82-127	
Carbon Tetrachloride	<0.000234	0.0500	0.0469	94	63-135	
Chlorobenzene	<0.000239	0.0500	0.0471	94	83-121	
Chloroethane	<0.000549	0.0500	0.0519	104	57-122	
Chloroform	<0.000292	0.0500	0.0485	97	74-118	
Methyl Chloride	<0.000299	0.0500	0.0571	114	58-110	H
2-Chlorotoluene	<0.000392	0.0500	0.0454	91	83-129	
4-Chlorotoluene	<0.000439	0.0500	0.0454	91	83-125	
p-Cymene (p-Isopropyltoluene)	<0.000420	0.0500	0.0443	89	84-130	
1,2-Dibromo-3-Chloropropane	<0.00155	0.0500	0.0497	99	58-133	
Dibromochloromethane	<0.000473	0.0500	0.0480	96	77-130	
1,2-Dibromoethane	<0.000423	0.0500	0.0493	99	80-127	
Methylene bromide	<0.000352	0.0500	0.0520	104	73-126	
1,2-Dichlorobenzene	<0.000431	0.0500	0.0478	96	84-121	
1,3-Dichlorobenzene	<0.000371	0.0500	0.0456	91	84-124	
1,4-Dichlorobenzene	<0.000238	0.0500	0.0455	91	82-120	
Dichlorodifluoromethane	<0.000426	0.0500	0.0517	103	54-122	
1,2-Dichloroethane	<0.000351	0.0500	0.0517	103	70-123	
1,1-Dichloroethane	<0.000201	0.0500	0.0509	102	73-124	
trans-1,2-dichloroethylene	<0.000292	0.0500	0.0504	101	63-110	
cis-1,2-Dichloroethylene	<0.000340	0.0500	0.0491	98	72-131	
1,1-Dichloroethene	<0.000237	0.0500	0.0495	99	68-119	
2,2-Dichloropropane	<0.00118	0.0500	0.0454	91	67-137	
1,3-Dichloropropane	<0.000250	0.0500	0.0515	103	82-131	
1,2-Dichloropropane	<0.000472	0.0500	0.0504	101	75-122	

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

BRL - Below Reporting Limit

Blank Spike Recovery

Project Name: NSR-456

Work Order #: 484963 **Project ID:** 1130020101

Lab Batch #: 940647 **Sample:** 655267-1-BKS **Matrix:** Solid

Date Analyzed: 05/10/2014 **Date Prepared:** 05/10/2014 **Analyst:** MCH

Reporting Units: mg/kg **Batch #:** 1 **BLANK /BLANK SPIKE RECOVERY STUDY**

VOAs by SW-846 8260 Analytes	Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
trans-1,3-dichloropropene	<0.000303	0.0500	0.0490	98	73-125	
1,1-Dichloropropene	<0.000423	0.0500	0.0469	94	72-118	
cis-1,3-Dichloropropene	<0.000428	0.0500	0.0531	106	74-135	
Ethylbenzene	<0.000430	0.0500	0.0458	92	80-123	
Hexachlorobutadiene	<0.000863	0.0500	0.0441	88	77-130	
Isopropylbenzene	<0.000167	0.0500	0.0427	85	55-155	
Methylene Chloride	<0.000588	0.0500	0.0482	96	57-134	
MTBE	<0.000340	0.0500	0.0491	98	64-148	
Naphthalene	<0.000271	0.0500	0.0508	102	53-162	
n-Propylbenzene	<0.000179	0.0500	0.0479	96	84-131	
Styrene	<0.000150	0.0500	0.0510	102	80-126	
1,1,1,2-Tetrachloroethane	<0.000407	0.0500	0.0485	97	81-127	
1,1,2,2-Tetrachloroethane	<0.000459	0.0500	0.0498	100	75-133	
Tetrachloroethylene	<0.000256	0.0500	0.0463	93	79-124	
Toluene	<0.000112	0.0500	0.0441	88	74-122	
1,2,3-Trichlorobenzene	<0.000243	0.0500	0.0489	98	75-131	
1,2,4-Trichlorobenzene	<0.000434	0.0500	0.0457	91	79-128	
1,1,2-Trichloroethane	<0.000326	0.0500	0.0513	103	75-131	
1,1,1-Trichloroethane	<0.000339	0.0500	0.0459	92	71-124	
Trichloroethylene	<0.000327	0.0500	0.0504	101	78-119	
Trichlorofluoromethane	<0.000485	0.0500	0.0489	98	71-148	
1,2,3-Trichloropropane	<0.000701	0.0500	0.0507	101	75-131	
1,2,4-Trimethylbenzene	<0.000113	0.0500	0.0479	96	60-159	
1,3,5-Trimethylbenzene	<0.000397	0.0500	0.0464	93	61-160	
Vinyl Chloride	<0.000827	0.0500	0.0481	96	60-123	
o-Xylene	<0.000279	0.0500	0.0484	97	79-125	
m,p-Xylenes	<0.000386	0.100	0.0944	94	78-127	

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

BRL - Below Reporting Limit

BS / BSD Recoveries

Project Name: NSR-456

Work Order #: 484963 **Project ID:** 1130020101

Analyst: FOV **Date Prepared:** 05/12/2014 **Date Analyzed:** 05/13/2014

Lab Batch ID: 940794 **Sample:** 655283-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH by Texas1005 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C12 Gasoline Range Hydrocarbons	<2.36	1000	977	98	1000	1030	103	5	70-130	30	
C12 - C28 Diesel Range Hydrocarbons	<1.62	1000	897	90	1000	928	93	3	70-130	30	

Analyst: FOV **Date Prepared:** 05/13/2014 **Date Analyzed:** 05/14/2014

Lab Batch ID: 940857 **Sample:** 655361-1-BKS **Batch #:** 1 **Matrix:** Water

Units: mg/L

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH by Texas1005 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C12 Gasoline Range Hydrocarbons	<0.160	100	82.3	82	100	77.3	77	6	70-130	25	
C12 - C28 Diesel Range Hydrocarbons	<0.164	100	78.8	79	100	70.7	71	11	70-130	25	

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

Form 3 - MS / MSD Recoveries

Project Name: NSR-456

Work Order # : 484963 **Project ID:** 1130020101

Lab Batch ID: 940548 **QC- Sample ID:** 484956-007 S **Batch #:** 1 **Matrix:** Solid

Date Analyzed: 05/09/2014 **Date Prepared:** 05/09/2014 **Analyst:** SAD

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

BTEX-MTBE by SW 8260B 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
MTBE	<0.000590	0.501	0.590	118	0.498	0.501	101	16	68-138	25	
Benzene	<0.000193	0.100	0.0802	80	0.0996	0.0753	76	6	62-132	25	
Toluene	<0.000130	0.100	0.0838	84	0.0996	0.0920	92	9	66-124	25	
Ethylbenzene	<0.0000957	0.100	0.0937	94	0.0996	0.0874	88	7	71-134	25	
m,p-Xylenes	<0.000362	0.200	0.185	93	0.199	0.172	86	7	69-128	25	
o-Xylene	<0.000230	0.100	0.0944	94	0.0996	0.0912	92	3	72-131	25	

Lab Batch ID: 940670 **QC- Sample ID:** 485054-001 S **Batch #:** 1 **Matrix:** Solid

Date Analyzed: 05/12/2014 **Date Prepared:** 05/12/2014 **Analyst:** SAD

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

BTEX-MTBE by SW 8260B 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
MTBE	<0.0298	25.3	25.9	102	25.3	25.1	99	3	68-138	25	
Benzene	2.33	5.05	7.75	107	5.05	7.91	110	2	62-132	25	
Toluene	5.44	5.05	11.8	126	5.05	11.3	116	4	66-124	25	X
Ethylbenzene	0.394	5.05	6.09	113	5.05	6.08	113	0	71-134	25	
m,p-Xylenes	3.38	10.1	15.3	118	10.1	15.0	115	2	69-128	25	
o-Xylene	1.29	5.05	6.83	110	5.05	6.61	105	3	72-131	25	

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

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

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

Form 3 - MS / MSD Recoveries

Project Name: NSR-456

Work Order # : 484963 **Project ID:** 1130020101

Lab Batch ID: 940780 **QC- Sample ID:** 484963-004 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 05/13/2014 **Date Prepared:** 05/13/2014 **Analyst:** SAD

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

BTEX-MTBE by SW 8260B 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
MTBE	0.00110	0.702	0.917	130	0.706	0.940	133	2	68-138	25	
Benzene	<0.000270	0.140	0.147	105	0.141	0.155	110	5	62-132	25	
Toluene	0.000664	0.140	0.135	96	0.141	0.151	107	11	66-124	25	
Ethylbenzene	<0.000134	0.140	0.137	98	0.141	0.150	106	9	71-134	25	
m,p-Xylenes	0.000720	0.281	0.272	97	0.282	0.301	106	10	69-128	25	
o-Xylene	0.000438	0.140	0.139	99	0.141	0.145	103	4	72-131	25	

Lab Batch ID: 940879 **QC- Sample ID:** 484880-016 S **Batch #:** 1 **Matrix:** Water

Date Analyzed: 05/12/2014 **Date Prepared:** 05/12/2014 **Analyst:** SAD

Reporting Units: mg/L

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

BTEX-MTBE by SW 8260B 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
MTBE	0.000810	0.500	0.514	103	0.500	0.506	101	2	65-135	20	
Benzene	0.000570	0.100	0.0912	91	0.100	0.110	109	19	66-142	20	
Toluene	0.000510	0.100	0.0890	88	0.100	0.103	102	15	59-139	20	
Ethylbenzene	0.00116	0.100	0.0996	98	0.100	0.101	100	1	75-125	20	
m,p-Xylenes	0.00261	0.200	0.212	105	0.200	0.207	102	2	75-125	20	
o-Xylene	0.000380	0.100	0.100	100	0.100	0.101	101	1	75-125	20	

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

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

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

Form 3 - MS / MSD Recoveries

Project Name: NSR-456

Work Order # : 484963 **Project ID:** 1130020101

Lab Batch ID: 940794 **QC- Sample ID:** 484869-006 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 05/13/2014 **Date Prepared:** 05/12/2014 **Analyst:** FOV

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TPH by Texas1005 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	<3.49	1480	1510	102	1480	1480	100	2	70-130	30	
C12 - C28 Diesel Range Hydrocarbons	<2.39	1480	1390	94	1480	1350	91	3	70-130	30	

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

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

Relative Percent Difference RPD = 200*|(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, NC = Non Calculable - Sample amount is > 4 times the amount spiked.

Form 3 - MS / MSD Recoveries

Project Name: NSR-456

Work Order # : 484963 **Project ID:** 1130020101

Lab Batch ID: 940647 **QC- Sample ID:** 484963-009 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 05/10/2014 **Date Prepared:** 05/10/2014 **Analyst:** MCH

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

VOAs by SW-846 8260 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	<0.000193	0.0616	0.0464	75	0.0612	0.0528	86	13	66-142	25	
Bromobenzene	<0.000540	0.0616	0.0511	83	0.0612	0.0537	88	5	75-125	25	
Bromochloromethane	<0.000585	0.0616	0.0551	89	0.0612	0.0601	98	9	60-140	25	
Bromodichloromethane	<0.000327	0.0616	0.0524	85	0.0612	0.0575	94	9	75-125	25	
Bromoform	<0.000861	0.0616	0.0598	97	0.0612	0.0593	97	1	75-125	25	
Methyl bromide	<0.00130	0.0616	0.0634	103	0.0612	0.0683	112	7	60-140	25	
tert-Butylbenzene	<0.000254	0.0616	0.0475	77	0.0612	0.0521	85	9	75-125	25	
Sec-Butylbenzene	<0.000604	0.0616	0.0458	74	0.0612	0.0504	82	10	75-125	25	X
n-Butylbenzene	<0.000579	0.0616	0.0484	79	0.0612	0.0512	84	6	75-125	25	
Carbon Tetrachloride	<0.000288	0.0616	0.0451	73	0.0612	0.0507	83	12	62-125	25	
Chlorobenzene	<0.000295	0.0616	0.0481	78	0.0612	0.0527	86	9	60-133	25	
Chloroethane	<0.000676	0.0616	0.0514	83	0.0612	0.0570	93	10	60-140	25	
Chloroform	<0.000360	0.0616	0.0509	83	0.0612	0.0565	92	10	74-125	25	
Methyl Chloride	<0.000368	0.0616	0.0619	100	0.0612	0.0751	123	19	60-140	25	
2-Chlorotoluene	<0.000484	0.0616	0.0484	79	0.0612	0.0534	87	10	73-125	25	
4-Chlorotoluene	<0.000541	0.0616	0.0477	77	0.0612	0.0507	83	6	74-125	25	
p-Cymene (p-Isopropyltoluene)	<0.000518	0.0616	0.0451	73	0.0612	0.0483	79	7	75-125	25	X
1,2-Dibromo-3-Chloropropane	<0.00191	0.0616	0.0548	89	0.0612	0.0581	95	6	59-125	25	
Dibromochloromethane	<0.000583	0.0616	0.0536	87	0.0612	0.0562	92	5	73-125	25	
1,2-Dibromoethane	<0.000522	0.0616	0.0547	89	0.0612	0.0578	94	6	73-125	25	
Methylene bromide	<0.000434	0.0616	0.0522	85	0.0612	0.0585	96	11	69-127	25	
1,2-Dichlorobenzene	<0.000531	0.0616	0.0507	82	0.0612	0.0534	87	5	75-125	25	
1,3-Dichlorobenzene	<0.000458	0.0616	0.0497	81	0.0612	0.0522	85	5	75-125	25	

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

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

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

Form 3 - MS / MSD Recoveries

Project Name: NSR-456

Work Order # : 484963 **Project ID:** 1130020101

Lab Batch ID: 940647 **QC- Sample ID:** 484963-009 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 05/10/2014 **Date Prepared:** 05/10/2014 **Analyst:** MCH

Reporting Units: mg/kg

VOAs by SW-846 8260 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
1,4-Dichlorobenzene	<0.000293	0.0616	0.0496	81	0.0612	0.0508	83	2	75-125	25	
Dichlorodifluoromethane	<0.000524	0.0616	0.0530	86	0.0612	0.0576	94	8	65-135	25	
1,2-Dichloroethane	<0.000432	0.0616	0.0522	85	0.0612	0.0572	93	9	68-127	25	
1,1-Dichloroethane	<0.000248	0.0616	0.0506	82	0.0612	0.0583	95	14	72-125	25	
trans-1,2-dichloroethylene	<0.000360	0.0616	0.0489	79	0.0612	0.0546	89	11	75-125	25	
cis-1,2-Dichloroethylene	<0.000419	0.0616	0.0502	81	0.0612	0.0564	92	12	75-125	25	
1,1-Dichloroethene	<0.000292	0.0616	0.0490	80	0.0612	0.0548	90	11	59-172	25	
2,2-Dichloropropane	<0.00146	0.0616	0.0446	72	0.0612	0.0487	80	9	75-125	25	X
1,3-Dichloropropane	<0.000308	0.0616	0.0551	89	0.0612	0.0599	98	8	75-125	25	
1,2-Dichloropropane	<0.000582	0.0616	0.0509	83	0.0612	0.0567	93	11	74-125	25	
trans-1,3-dichloropropene	<0.000374	0.0616	0.0517	84	0.0612	0.0550	90	6	66-125	25	
1,1-Dichloropropene	<0.000521	0.0616	0.0453	74	0.0612	0.0503	82	10	75-125	25	X
cis-1,3-Dichloropropene	<0.000527	0.0616	0.0550	89	0.0612	0.0605	99	10	74-125	25	
Ethylbenzene	<0.000530	0.0616	0.0462	75	0.0612	0.0507	83	9	75-125	25	
Hexachlorobutadiene	<0.00106	0.0616	0.0445	72	0.0612	0.0469	77	5	75-125	25	X
Isopropylbenzene	<0.000206	0.0616	0.0421	68	0.0612	0.0466	76	10	75-125	25	X
Methylene Chloride	<0.000725	0.0616	0.0505	82	0.0612	0.0562	92	11	75-125	25	
MTBE	<0.000419	0.0616	0.0550	89	0.0612	0.0581	95	5	60-140	25	
Naphthalene	<0.000334	0.0616	0.0593	96	0.0612	0.0587	96	1	70-130	25	
n-Propylbenzene	<0.000221	0.0616	0.0492	80	0.0612	0.0538	88	9	75-125	25	
Styrene	<0.000185	0.0616	0.0520	84	0.0612	0.0565	92	8	75-125	25	
1,1,1,2-Tetrachloroethane	<0.000501	0.0616	0.0515	84	0.0612	0.0558	91	8	72-125	25	
1,1,2,2-Tetrachloroethane	<0.000565	0.0616	0.0550	89	0.0612	0.0562	92	2	74-125	25	
Tetrachloroethylene	<0.000315	0.0616	0.0434	70	0.0612	0.0497	81	14	71-125	25	X

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

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

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

Form 3 - MS / MSD Recoveries

Project Name: NSR-456

Work Order # : 484963 **Project ID:** 1130020101

Lab Batch ID: 940647 **QC- Sample ID:** 484963-009 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 05/10/2014 **Date Prepared:** 05/10/2014 **Analyst:** MCH

Reporting Units: mg/kg

VOAs by SW-846 8260

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
Toluene	<0.000138	0.0616	0.0438	71	0.0612	0.0491	80	11	59-139	25	
1,2,3-Trichlorobenzene	<0.000299	0.0616	0.0531	86	0.0612	0.0535	87	1	75-137	25	
1,2,4-Trichlorobenzene	<0.000535	0.0616	0.0524	85	0.0612	0.0514	84	2	75-135	25	
1,1,2-Trichloroethane	<0.000401	0.0616	0.0572	93	0.0612	0.0613	100	7	75-127	25	
1,1,1-Trichloroethane	<0.000417	0.0616	0.0444	72	0.0612	0.0498	81	11	75-125	25	X
Trichloroethylene	<0.000403	0.0616	0.0493	80	0.0612	0.0551	90	11	62-137	25	
Trichlorofluoromethane	<0.000598	0.0616	0.0506	82	0.0612	0.0565	92	11	67-125	25	
1,2,3-Trichloropropane	<0.000864	0.0616	0.0561	91	0.0612	0.0568	93	1	75-125	25	
1,2,4-Trimethylbenzene	<0.000139	0.0616	0.0502	81	0.0612	0.0544	89	8	75-125	25	
1,3,5-Trimethylbenzene	<0.000490	0.0616	0.0482	78	0.0612	0.0525	86	9	70-130	25	
Vinyl Chloride	<0.00102	0.0616	0.0508	82	0.0612	0.0583	95	14	60-140	25	
o-Xylene	<0.000343	0.0616	0.0492	80	0.0612	0.0538	88	9	75-125	25	
m,p-Xylenes	<0.000476	0.123	0.0934	76	0.122	0.105	86	12	75-125	25	

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

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

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

Sample Duplicate Recovery

Project Name: NSR-456

Work Order #: 484963

Lab Batch #: 940689 **Project ID:** 1130020101
Date Analyzed: 05/12/2014 17:23 **Date Prepared:** 05/12/2014 **Analyst:** DHE
QC- Sample ID: 484963-001 D **Batch #:** 1 **Matrix:** Soil
Reporting Units: %

SAMPLE / SAMPLE DUPLICATE RECOVERY

Percent Moisture Analyte	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Percent Moisture	20.6	20.1	2	20	

Lab Batch #: 940689
Date Analyzed: 05/12/2014 17:23 **Date Prepared:** 05/12/2014 **Analyst:** DHE
QC- Sample ID: 485101-001 D **Batch #:** 1 **Matrix:** Soil
Reporting Units: %

SAMPLE / SAMPLE DUPLICATE RECOVERY

Percent Moisture Analyte	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Percent Moisture	30.2	30.4	1	20	

Lab Batch #: 940830
Date Analyzed: 05/14/2014 10:04 **Date Prepared:** 05/14/2014 **Analyst:** DHE
QC- Sample ID: 484905-017 D **Batch #:** 1 **Matrix:** Soil
Reporting Units: %

SAMPLE / SAMPLE DUPLICATE RECOVERY

Percent Moisture Analyte	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Percent Moisture	29.0	27.4	6	20	

Lab Batch #: 940830
Date Analyzed: 05/14/2014 10:04 **Date Prepared:** 05/14/2014 **Analyst:** DHE
QC- Sample ID: 484905-027 D **Batch #:** 1 **Matrix:** Soil
Reporting Units: %

SAMPLE / SAMPLE DUPLICATE RECOVERY

Percent Moisture Analyte	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Percent Moisture	28.3	26.9	5	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

☑ 4143 Greenbriar Drive, Stafford, TX 77477 **281-240-4200**
☐ 5332, Blackberry Drive, San Antonio, TX 78238 **210-509-3334**
☐ 9701 Harry Hines Blvd., Dallas, TX 75220 **214-902-0300**
☐ 12600 West I-20 East, Odessa, TX 79765 **432-563-1800**

Serial #: 324250 Page of

Company-City: GEOTEST ENGINEERING INC. **Phone:** 713 266 0588

Lab Only: 484963

Project Name-Location: NSR-456 ☐ Previously done at XENCO **Project ID:** 113002010 1

TAT: ASAP 5h 12h 24h 48h 3d 5d 7d 10d 21d Standard TAT is project specific.
It is typically 5-7 Working Days for level II and 10+ Working days for level III and IV data.

Proj. State: (TX) AL, FL, GA, LA, MS, NC, NJ, PA, SC, TN, UT Other **Proj. Manager (PM):** MOHAN BALLAGERE.

E-mail Results to ☐ PM and nkolli@geotesteng.com **Fax No:**

Invoice to ☑ Accounting ☐ Inc. Invoice with Final Report ☐ Invoice must have a P.O.
Bill to:

Quote/Pricing: **P.O. No:** ☐ Call for P.O.

Reg Program: UST DRY-CLEAN Land-Fill Waste-Disp NPDES DW **TRRP**
QAPP Per-Contract CLP AGCEE NAVY DOE DOD USACE OTHER:

Special DLs (GW DW QAPP MDLs RLs See Lab PM Included Call PM)

Sampler Name T. Murray. **Signature**

Remarks

	Sample ID	Sampling Date	Time	Depth ft' in" m	Matrix	Composite	Grab	# Containers	Container Size	Container Type	Preservatives	VOA: Full-List BTEX-MTBE EtOH Oxyg VOHs VOAs	VOA: PP TCL DW Appdx-1 Appdx-2 CALL Other:	PAHs SIM 8310 8270	TX-1005 DRO GRO MA EPH MA VPH	SVOCs: Full-List DW BN&AE TCLP PP Appdx-2 CALL	OC Pesticides PCBs Herbicides OP Pesticides	Metals: RCRA-8 RCRA-4 Pb 13PP 23TAL Appdx 1 Appdx2	SPLP - TCLP (Metals VOCs SVOCs Pest. Herb. PCBs)	EDB / DBCP	TPH	VOCs	TATASAP 5h 12h 24h 48h 3d 5d 7d 10d 21d	Addn: PAH above mg/L W, mg/Kg S Highest Hit	Hold Samples (Surcharges will apply and are pre-approved)	Sample Clean-ups are pre-approved as needed	Addn: Date Rcv. by: From:
1	EB-1 S#9	5/7/14	9:30AM	16-18	S		/	1	16	G		/									/							
2	EB-2 S#6	5/7/14	10:00AM	10-12	S		/	1	16	G		/									/							
3	EB-3 S#6	5/7/14	10:30AM	10-12	S		/	1	16	G		/									/							
4	EB-4 S#9	5/7/14	11:30AM	16-18	S		/	1	16	G		/									/							
5	EB-5 S#10	5/7/14	12:30pm	18-20	S		/	1	16	G		/									/							
6	EB-6 S#4	5/7/14	1:30pm	6-8	S		/	1	16	G		/									/							
7	EB-1	5/7/14	9:30AM		W		/	2	8	C		/									/							
8	EB-5	5/7/14	12:30pm		W		/	2	8	C		/									/							
9	Composite	5/7/14			S	/			32	C											/	/						
10																												

Relinquished by (Initials and Sign)	Date & Time	Relinquished to (Initials and Sign)	Date & Time
1) T Murray	5/7/14 18:00	2) Mile K	5/07/14 18:00
3)	05/07/14 18:05	4)	
5)		6) T Murray	5/7/14 18:20

Total Containers per COC: Ambient Cooler Temp: 20.6 °C

Otherwise agreed on writing. Reports are the Intellectual Property of XENCO until paid. Samples will be held 30 days after final report is e-mailed unless hereby requested. Rush Charges and Collection Fees are pre-approved if needed.

Preservatives: Various (**V**), HCl pH<2 (**H**), H2SO4 pH<2 (**S**), HNO3 pH<2 (**N**), Asbc Acid&NaOH (**A**), ZnAc&NaOH (**Z**), (Cool, <4C) (**C**), None (**NA**),See Label (**L**), Other (**O**) _____ **Cont. Type:** Glass Amb (**A**), Glass Clear (**C**), Plastic (**P**), Various (**V**)
Cont. Size: 4oz (**4**), 8oz (**8**), 32oz (**32**), 40ml VOA (**40**), 1L (**1**), 500ml (**5**), Tedlar Bag (**B**), Various (**V**), Other _____

Committed to Excellence in Service and Quality Local Transport www.xenco.com

Matrix: Air (**A**), Product (**P**), Solid (**S**), Water (**W**), Liquid (**L**)

Notice: Signature of this document and relinquishment of these samples constitutes a valid purchase order from client company to Xenco Laboratories and its affiliates, subcontractors and assigns under Xenco's standard terms and conditions of service unless previously negotiated under a fully executed client contract.

Final 1.002

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: Geotest Engineering, Inc.

Date/ Time Received: 05/08/2014 06:37:26 PM

Work Order #: 484963

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

Temperature Measuring device used :

Sample Receipt Checklist		Comments
#1 *Temperature of cooler(s)?	20.6	
#2 *Shipping container in good condition?	**Yes**	
#3 *Samples received on ice?	**No**	Ambient. Cooling Process Began upon receipt in lab.
#4 *Custody Seals intact on shipping container/ cooler?	**No**	
#5 Custody Seals intact on sample bottles?	**No**	
#6 *Custody Seals Signed and dated?	**No**	
#7 *Chain of Custody present?	**Yes**	
#8 Sample instructions complete on Chain of Custody?	**Yes**	
#9 Any missing/extra samples?	**No**	
#10 Chain of Custody signed when relinquished/ received?	**Yes**	
#11 Chain of Custody agrees with sample label(s)?	**Yes**	
#12 Container label(s) legible and intact?	**Yes**	
#13 Sample matrix/ properties agree with Chain of Custody?	**Yes**	
#14 Samples in proper container/ bottle?	**Yes**	
#15 Samples properly preserved?	**Yes**	
#16 Sample container(s) intact?	**Yes**	
#17 Sufficient sample amount for indicated test(s)?	**Yes**	
#18 All samples received within hold time?	**Yes**	
#19 Subcontract of sample(s)?	**No**	
#20 VOC samples have zero headspace (less than 1/4 inch bubble)?	**Yes**	
#21 <2 for all samples preserved with HNO3,HCL, H2SO4?	**Yes**	
#22 >10 for all samples preserved with NaAsO2+NaOH, ZnAc+NaOH?	**N/A**	

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

Analyst:	PH Device/Lot#:

Checklist completed by: Mike Kimmel — Date: 05/08/2014

Checklist reviewed by: Debbie Simmons — Date: 05/12/2014

APPENDIX C

PHOTOGRAPHS OF DRILLING ACTIVITIES

Job No.: 1130020101

Job No.: 1130020101

APPENDIX D

QUALIFICATIONS OF ENVIRONMENTAL
PROFESSIONAL PARTICIPATING
IN PHASE II ESA

Mohan Ballagere, P.E.

Vice President

EDUCATION

M.S. in Civil Engineering (Geotechnical), 1992, South Dakota School of Mines & Technology, Rapid City, South Dakota

B.S. in Civil Engineering, 1984, University of Mysore, India

PROFESSIONAL REGISTRATION

Texas 2001 Civil Engineering

RELEVANT PROJECT EXPERIENCE

Mr. Ballagere is a Vice President at Geotest Engineering, Inc. He has over 20 years of experience in the civil, geotechnical field and environmental assessment and has worked on various projects involving bridges, water, wastewater, new and overlay pavements, port facilities, private and commercial buildings, Phase I & II Environmental Site Assessments, site reconnaissance, fault studies and ground stabilization. His responsibilities include overseeing field exploration for environmental assessment, reviewing analytical testing, preparation of environmental proposals, performing environmental assessment and reviewing environmental reports pertaining to Phase I & II Environmental Site Assessments and findings and conclusions for environmental impact study projects related to bridges, roads, water, wastewater and storm water. Some of the relevant environmental assessment projects are:

- Phase I ESA Chimney Rock Lift Station Rehabilitation – Houston, Texas
- Phase I and II ESA Tasfield Force Main – Houston, Texas
- Phase I and II ESA Water Line Replacement in the Parkhurst Area – Houston, Texas
- Phase I ESA Buckingham Lift Station – Houston, Texas
- Phase I ESA A. Kuykendall League 29.46 acres – Houston, Texas
- New Ground Water Storage Tanks at District 175 & 184 – Houston, Texas
- Phase II ESA Long Point Rd. at Wirt Rd. Intersection – Houston, Texas
- Phase I ESA San Felipe Rd. Improvements – Houston, Texas
- Phase I and II ESA Sharpstown Area Drainage Improvements – Houston, Texas
- Phase I and II ESA Bellaire/Fondren Intersection Improvements – Houston, Texas
- Phase I ESA Pasadena Lift Station Improvements Pansy, Crenshaw and El Cary – Pasadena, Texas
- Phase I and II Reconstruction of Lyons Avenue from US 59 to Waco – Houston, Texas
- Phase I ESA 12" Water Line along Kingsland Blvd. from Baker Rd. to Harris Co. 346 Water Plant – Houston, Texas
- Phase I ESA Tasfield Community Project – Harris County, Texas
- Phase I ESA S. Gessner - Cravens Project – Houston, Texas
- Ph. I ESA - 16827 Old Richmond Road – Houston, Texas
- Ph. I ESA Historic Holman Street Reconstruction Project – Houston, Texas
- Ph. II ESA Long Point Rd. from 400' East of Hollister to 150 ft. west of Pech Rd. – Houston, Texas

Naresh Kolli, P.E.
Assistant Project Manager

EDUCATION

- **Master of Engineering** in Civil Engineering (Geotechnical Engineering)
  McNeese State University, Lake Charles, LA, July 2005.
- **Bachelor of Engineering** in Civil Engineering
  Kakatiya University, India, June 2002.

PROFESSIONAL REGISTRATION

Texas 2012 Civil Engineering

RELEVANT PROJECT EXPERIENCE:

Mr. Naresh Kolli, is an Assistant Project Manager at Geotest Engineering, Inc. He has over 8 years of experience in the civil, geotechnical and environmental field and has worked on various projects involving high rise office buildings to single story commercial buildings, warehouses, schools and government projects, Phase I & II Environmental Site Assessments, site reconnaissance and geological and rock profile studies. His responsibilities include coordination of drilling and sampling of soil borings and supervision of laboratory testing, performing engineering analyses and preparation of geotechnical as well as Phase I and II Environmental Site Assessment reports.

- Phase II ESA – Reconstruction of Long Point Road – Houston, Texas
- Phase I ESA – South Point Park and Ride – Houston, Texas
- Phase I ESA – 11730 Sam Houston Parkway, Houston, Texas
- Phase I ESA – Historic Holman Street Reconstruction Project – Houston, Texas.
- Phase I ESA – 18" Waterline Loop Alignment – Pasadena, Texas
- Phase I ESA – 5107 Griggs Road – Houston, Texas
- Phase I ESA – Yale Street Detention Basin – Houston, Texas
- Phase I ESA – Astoria Boulevard – Houston, Texas
- Phase I ESA – Fourth ward Street reconstruction – Houston, Texas
- Phase I and II – 5216 Almeda Road – Houston, Texas
- Phase I ESA – Waterline Replacements Timbergrove Area – Houston, Texas
- Phase I ESA – Waterline Replacements Glenwood Forest Area – Houston, Texas
- Phase I and Phase II ESA – Waterline Replacements Fulton North Area – Houston, Texas
- Phase I ESA – Pavement & Drainage Improvements along Witter Street – Pasadena, Texas
- Phase I ESA – Craigmont Estates Detention Pond – City of Baytown, Texas
- Phase I ESA – Beltway 8 & Feeder Road Drainage Improvements – Pasadena, Texas
- Phase I ESA – Pump & Lift Station Renewal & Replacements; Fairway Lift Station – Houston, Texas
- Phase I ESA – Pump & Lift Station Renewal & Replacements; Grenshaw Lift Station – Houston, Texas
- Phase I ESA – 18" Sanitary Sewer at George Bush IAH
- Phase I ESA – Pump & Lift Station Renewal & Replacement – Post Oak #1 Lift Station – Houston, Texas