U.S. Army

Final
Preliminary Assessment and Site Investigation Report for Heating Oil Spill Site Investigation at Building 419 Fort Stewart, Georgia

IMA

August 2012

Submitted to:
Directorate of Public Works
Environmental Division
Fort Stewart, Georgia 31314-4927

Submitted by:
U.S. Army Corps of Engineers
Savannah District
100 West Oglethorpe Avenue
Savannah, Georgia 31401-3604

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1006 Floyd Culler Court
Oak Ridge, Tennessee 37830-8022
under
Delivery Order No. W912HN-10-D-0001
Delivery Order No. 0007

DOCUMENT 2

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Acronyms and Abbreviations

AMSL	above mean sea level
bgs	below ground surface
BTEX	benzene, toluene, ethylbenzene, xylenes
DPT	direct push technology
equiv.	equivalent
EFR	enhanced fluid recovery
EPA	Environmental Protection Agency
ft	foot/feet
GA USTMP	Georgia Underground Storage Tank Management Program
gal	gallon(s)
hr	Hour
mg/kg	milligrams per kilogram
NA	not available
NP	not present
NRC	no regulatory criteria
PAH	petroleum aromatic hydrocarbons
PID	photoionization detector
SES	SpecPro Environmental Services LLC
TOC	top of casing
UST	underground storage tank

EXECUTIVE SUMMARY

SpecPro Environmental Services LLC (SES) under contract with the U.S. Army Corps of Engineers, Savannah District, has completed free product investigation and removal actions at Building 419 at Fort Stewart, Georgia. Under this scope of work, SES installed 21 soil borings and six groundwater monitor wells to delineate free product at the site and then performed enhanced fluid recovery (EFR) to remove as much free product as possible during a monthly eight-hour event for three consecutive months.

Fort Stewart Building 419 site is near the intersection of Hero Road and Steele Avenue in the PX complex. The site is mostly covered with asphalt and has a small grassy area on the western side where the heating oil tank used to be. According to information obtained from the fuel delivery inventory, 4,500 gallons of heating oil were released into the ground behind Building 419 and Steele Avenue on the west side of the loading dock.

According to Fort Stewart personnel, once the release was discovered, an emergency spill response effort was conducted to remove the underground storage tank (UST) and potentially contaminated soil. Documents were not provided about the discovery or the recovery efforts at this site.

In March 2011, twenty soil borings were installed using a direct push technology drilling rig at the site. One soil boring was installed in the vicinity of suspected release source area with other borings installed outwardly from that point. The soil borings were installed upgradient and downgradient of the suspected release area. The soil borings were sampled continuously, described and classified by a geologist, and field screened using a photoionization detector. Six of the soil boring locations were selected to be groundwater monitor well locations. These locations were selected based upon the contaminant source area to delineate the extent of possible groundwater contamination from the source area. The new groundwater monitor wells were allowed to equilibrate with the localized groundwater conditions. Free product was measured and recorded to estimate the extent and mass of the free product in the subsurface on June 12, July 17, and August 6, 2011.

Three eight-hour EFR events took place between June 2011 and August 2011. Ninety equivalent gallons of free product and 7,667 gallons of contaminated groundwater were removed from the site during the three separate events. At the end of each EFR event, the extracted groundwater and free product was transported off site for treatment and disposal.

SES recommends completing a Corrective Action Plan-Part A for the UST release with installation of three to five soil boring locations and groundwater monitor wells for contamination and free product delineation. After the free phase product is delineated, a pilot study consisting of surfactant injection and multiphase extraction is recommended to address the free phase product on the site.

1. INTRODUCTION

SpecPro Environmental Services LLC (SES), under contract with the U.S. Army Corps of Engineers, Savannah District, has completed free product delineation and removal actions at Building 419 at Fort Stewart, Georgia. This work was accomplished in accordance with *Final Work Plan for Heating Oil Site Investigation at Building 419, Fort Stewart, Georgia* (SES, March 2011).

Fort Stewart Building 419 is near the intersection of Hero Road and Steele Avenue in the PX complex. The site is mostly covered with asphalt and has a small grassy area on the western side where the heating oil tank used to be. According to information obtained from the fuel delivery inventory, approximately 4,500 gallons of heating oil were released into the ground behind Building 419 and Steele Avenue on the west side of the loading dock. See Figure 1 for the site location.

The objective of this scope of work was to perform free product investigations and removal actions at the Building 419 site at Fort Stewart, Georgia. Specific tasks performed under the scope included

- Installing 20 soil borings using direct push technology (DPT) with field screening using a photoionization detector (PID);
- Installing groundwater monitor wells at the six locations with the highest PID readings from intervals just above the groundwater table;
- Performing an eight-hour enhanced fluid recovery (EFR) event monthly for three months; and
- Profiling, manifesting, and disposing of all recovered liquids at an off-site facility upon extraction.

2. FIELD ACTIVITIES

Field activities conducted during this project consisted of providing technical support during installation of soil borings and groundwater monitor wells and supervising three monthly EFR events.

2.1 INSTALLATION OF SOIL BORINGS

On March 29, 2011, fieldwork began to install the 20 soil borings. The boring locations were selected based on the location of Building 419, the removed underground storage tank (UST), utilities throughout the project site, and the assumption that the groundwater flow would move to the northeast under Steele Avenue to the box culvert and open ditch. A DPT rig was used to install 20 soil borings to 15 feet below

ground surface (bgs). One additional boring was installed but not sampled because of refusal of the drill rig during installation of the groundwater well.

The soil was collected continuously throughout the borings, described and classified by a geologist, and field screened using a PID to detect the presence of petroleum hydrocarbons. Soil boring logs and locations are in Appendix A and Figure 2. All soil cuttings were placed in 55-gallon drums for off-site disposal. Nonhazardous waste manifests for nonregulated, nonhazardous soil containing petroleum hydrocarbons can be found in Appendix B.

2.2 SOIL BORING SAMPLE RESULTS

Soil sampling was performed in the area of the heating oil tank removal to investigate the extent of the heating oil release. Twenty soil borings were pushed to a depth of 15 feet with a Geoprobe using DPT. Samples were collected from a new 4-foot cellulite acetate butyrate liner using decontaminated stainless steel spoons at each sample location [Environmental Protection Agency (EPA), November 2007]. Each 4-foot liner was then screened with a PID. Two soil samples were collected from each boring with the highest readings. In conditions where readings were not detected, a soil sample was collected from 0 to 3 feet and one at the soil/ groundwater interface. The soils collected for analysis were placed into prelabeled, laboratory-supplied containers. Each sample container was placed into a prechilled cooler and filled with ice. All sample designations were recorded onto a chain-of-custody form and shipped overnight in the coolers to Empirical Laboratories of Nashville, Tennessee, a Georgia-approved laboratory. Each sample was analyzed for benzene, toluene, ethylbenzene, and xylenes (BTEX); petroleum aromatic hydrocarbons (PAHs); and total petroleum hydrocarbons. Procedures for collecting samples followed EPA protocols. DataChek of Caswell Beach, North Carolina, validated the analytical data. All down-hole drilling equipment was decontaminated with a steam cleaner before drilling, between borings, and after drilling. The soil borings that were not used for groundwater wells were abandoned using bentonite pellets after the sampling was completed. The soil boring results can be found in Tables 1 through 3 and Figures 3 through 6.

The BTEX and PAH concentrations in soil borings SB-10, SB-11, SB-13, SB-14, SB-15, SB-16, SB-17 and SB-18 exceeded Georgia Underground Storage Tank Management Program (GA USTMP) Table A, Soil Threshold Levels.

2.3 INSTALLATION OF GROUNDWATER MONITOR WELLS

On April 6 and 7, 2011, groundwater monitor wells were installed and developed in accordance with EPA Region 4 guidance using hollow stem augers and a peristaltic pump. Six groundwater monitor wells were installed at six previous boring locations based on soil screenings with a PID and known free product in the recovery wells. These soil borings were SB-03, SB-06, SB-10, SB-15, SB-19, and SB-21. The wells were installed to a depth of 15 feet bgs, and they have a screened interval from 5 feet to 15 feet bgs. The screen and sand filter pack of each monitor well brackets the water table to accommodate fluctuations in the aquifer and enable detection of free product if it is present. A bentonite seal was installed above the filter pack, and the remainder of the annular space was filled with cement grout. The monitor wells were completed at the surface with flush mounted surface protection. Figure 7 shows the locations of the groundwater monitor wells. Groundwater monitor well construction data can be found in Table 4, and monitor well logs can be found in Appendix C.

Monitor well development took place 24 hours after the cement grout was placed in the annular space. Monitor well development was performed using a combination of surging and pumping. During development, the development water was monitored for temperature, pH, conductivity, and turbidity. Development of the monitor wells continued until these parameters stabilized and the water was visibly free of sediment. All development water was containerized and sampled.

The monitor wells were allowed to equilibrate to the localized groundwater conditions during a two-week period. Free product levels were measured and recorded to estimate the extent and mass of free product in the subsurface on April 27, 2011. Figure 8 shows the potentiometric surface map, and Table 5 lists the groundwater elevations.

2.4 GROUNDWATER SAMPLING RESULTS

Groundwater sampling was performed on April12, 2011, in accordance with EPA Region 4 Procedure, Groundwater Sampling, SESDPROC-301 R1 using a peristaltic pump with disposable Teflon tubing. Groundwater samples analyzed for organic compounds were obtained using the peristaltic pump and vacuum jug method. Groundwater was purged from each well until the well parameters (temperature, conductivity, pH, oxidation reduction potential, dissolved oxygen, and turbidity) stabilized. Groundwater parameters were measured with a YSI 6820 Multi-Parameter Sonde Groundwater Monitor. All sample designations were recorded onto a chain-of-custody form and shipped overnight in coolers to Empirical

Laboratories of Nashville, Tennessee, a Georgia-approved laboratory. Each sample was analyzed for BTEX and PAHs. Procedures for collecting samples followed EPA protocols. DataChek of Caswell Beach, North Carolina, validated the analytical data. The results can be found in Tables 5 and 6 and Figure 9.

All results from groundwater sampling were below Georgia In-Stream Water Quality Standards. Ethylbenzene and xylenes (total) groundwater sample results from monitor well MW-04 exceeded minimum quantitation and reporting levels.

2.5 Soil Enhanced Fluid Recovery and Removal of Free Product

Three monthly enhanced fluid recovery (EFR) events were performed at the site between June 2011 and August 2011.

EcoVac Services provided a multiphase extraction system capable of providing up to 20 inches Hg vacuum and up to 20 gallons per minute influent flow rate. Basic operation of the extraction system consisted of lowering the tubing (stinger) inside the groundwater monitor well(s) at the site. The top of the monitor well casing was sealed, and a vacuum was applied to the well. To control mounding the groundwater, auxiliary air was introduced inside the well casing via an air valve. This auxiliary air traveled down the inside of the well casing and outside the stinger then lifted the liquids inside the well casing up the inside of the stinger piping. The process, which works much like an air lift pump, removed the liquids from the well, prevented a mounding effect, and created a depression of the groundwater surface promoting the flow of subsurface liquids toward the well. The evacuated liquids and air were transferred to an air/liquid separator. The air exhaust was directed into a vapor phase carbon treatment canister before being discharged into the atmosphere. The liquids were transferred to the truck's onboard storage tank.

SES and EcoVac mobilized to the site on June 12, 2011, for the first EFR event. Groundwater and free product levels were measured and recorded prior to system startup, and one groundwater monitor well and four recovery wells contained free product. Groundwater monitor well MW-04 contained 0.42 feet of free product. Recovery wells RW-01, RW-04, RW-05, and RW-06 contained 0.25, 4.50, 3.79, and 1.02 feet of free product respectively. The event was performed during a seven-hour period at five extraction points. The initial 4.25 hours were at RW-01, RW-04, RW-5, and RW-06, and MW-04 was added to the extraction array for the final 2.75 hours of the event. A calculated total of 96 pounds of petroleum

hydrocarbons and 2,573 gallons of total liquids were removed during this event. Following the extraction, all monitor and recovery wells were measured for free product, and no measurable amounts were observed.

Groundwater and free product levels were measured and recorded on July 15, 2011, with MW-04, RW-01, RW-04, RW-05, and RW-06 containing 0.50, sheen, 2.25, 2.6, and 0.48 feet of free product respectively.

The second monthly EFR event took place on July 17, 2011. Groundwater and free product levels were measured and recorded prior to system startup, and one groundwater monitor well and four recovery wells contained free product. Groundwater monitor well MW-04 contained 0.46 feet of free product. Recovery wells RW-01, RW-04, RW-05, and RW-06 contained 0.05, 2.26, 2.59, and 0.47 feet of free product respectively. The event was performed during a seven-hour period at five extraction points. The initial three hours were at RW-01, RW-04, RW-5, and RW-06, and MW-04 was added to the extraction array for the final four hours of the event. A calculated total of 199 pounds of petroleum hydrocarbons and 2,600 gallons of total liquids were removed during this event. Following the extraction, all monitor and recovery wells were measured for free product, and no measurable amounts were observed.

SES and EcoVac mobilized to the site on August 6, 2011, for the third and final monthly EFR event. Groundwater and free product levels were measured and recorded prior to system startup, and one groundwater monitor well and three recovery wells contained free product. MW-04 contained 0.35 feet of free product. RW-04, RW-05, and RW-06 contained 1.40, 1.05, and 0.47 feet of free product respectively. The event was performed during eight hours at four extraction points: MW-04, RW-04, RW-05, and RW-06. A calculated total of 316 pounds of petroleum hydrocarbons and 2,494 total gallons of liquid were removed during this event. Following the extraction, all monitor and recovery wells were measured for free product, and no measurable amounts were observed.

The groundwater elevations of each EFR event can be found in Table 7 and Figures 10 through 15.

The monthly reports generated by EcoVac for each EFR event can be found in Appendix D. EFR free product removal results can be found in Table 7.

All recovered liquid was transported to the EQ Augusta's treatment facility in Augusta, Georgia, for disposal. Nonhazardous waste manifests from each event can be found in Appendix D.

3. CONCLUSIONS AND RECOMMENDATIONS

The EFR system removed a total of 611 pounds of petroleum hydrocarbons vapor. Total liquid removed was 7,667 gallons with 90 gallons of total product removed during 22 hours of operation.

SES recommends completing a Corrective Action Plan-Part A for the UST release with installation of three to five soil boring locations and groundwater monitor wells for contamination and free product delineation. After the free phase product is delineated, a pilot study consisting of surfactant injection and multiphase extraction is recommended to address the free phase product on the site.

4. REFERENCES

Environmental Protection Agency Region 4, February 2008. *Field Branches Quality System and Technical Procedures*.

SpecPro Environmental Services LLC, March 2011. *Final Work Plan for Heating Oil Site Investigation at Building 419 Fort Stewart, Georgia.*

Figures

R:\E0207\E0209.0007\graphics\FTS Site Map Bldg 419.dwg(11/05/10)

E0209.0007

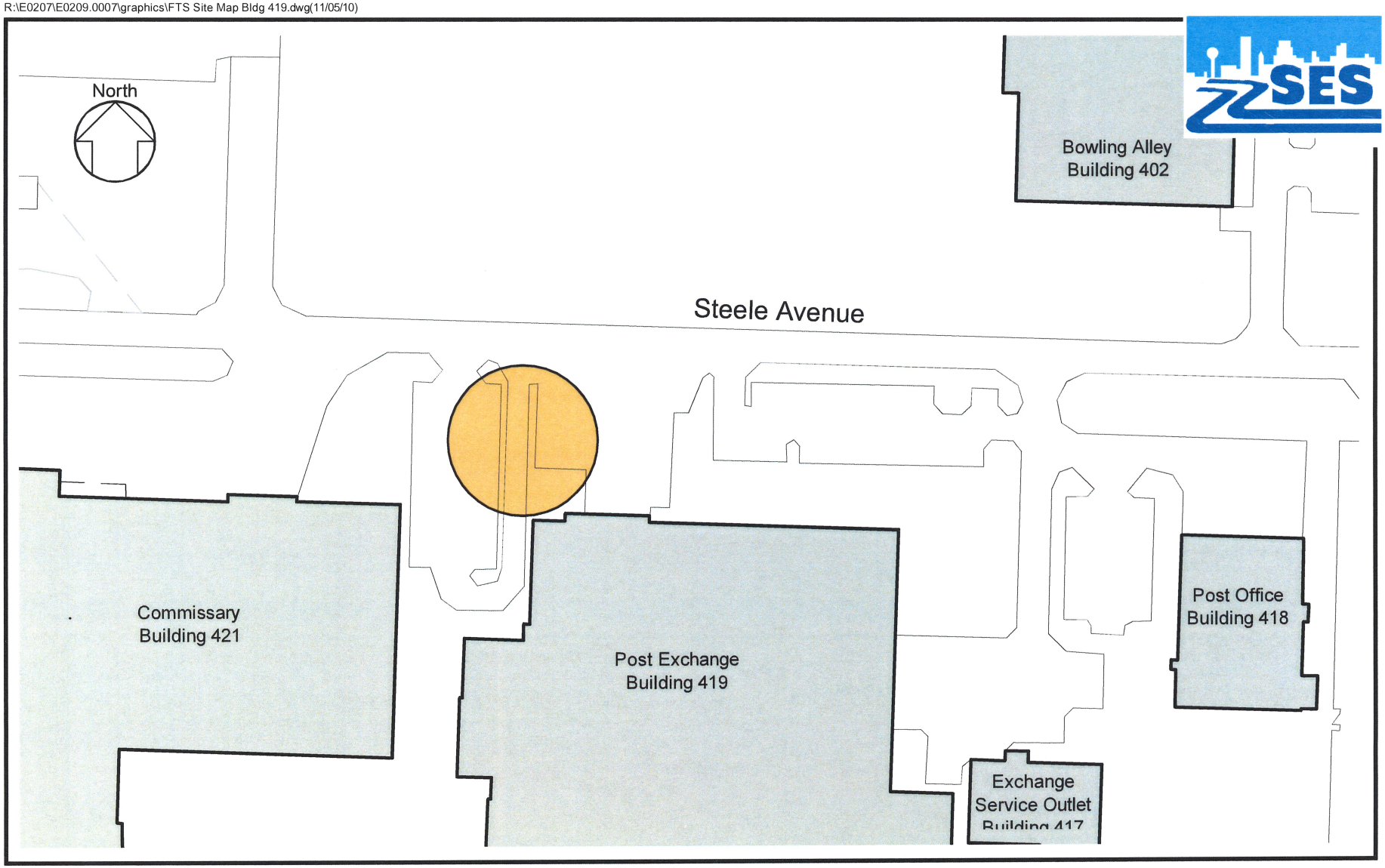
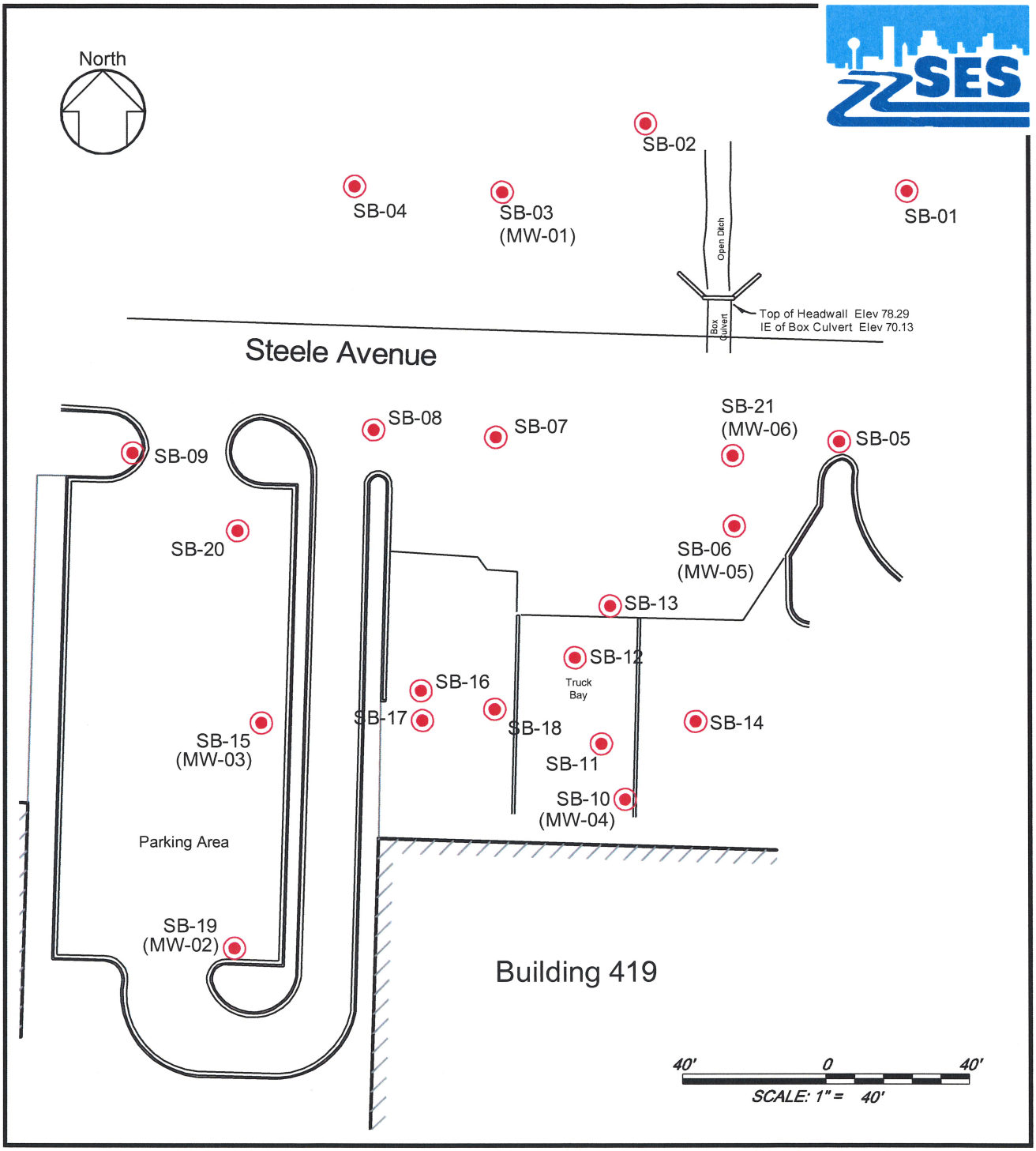


Figure 1 Site Map

F-1

10/27/11



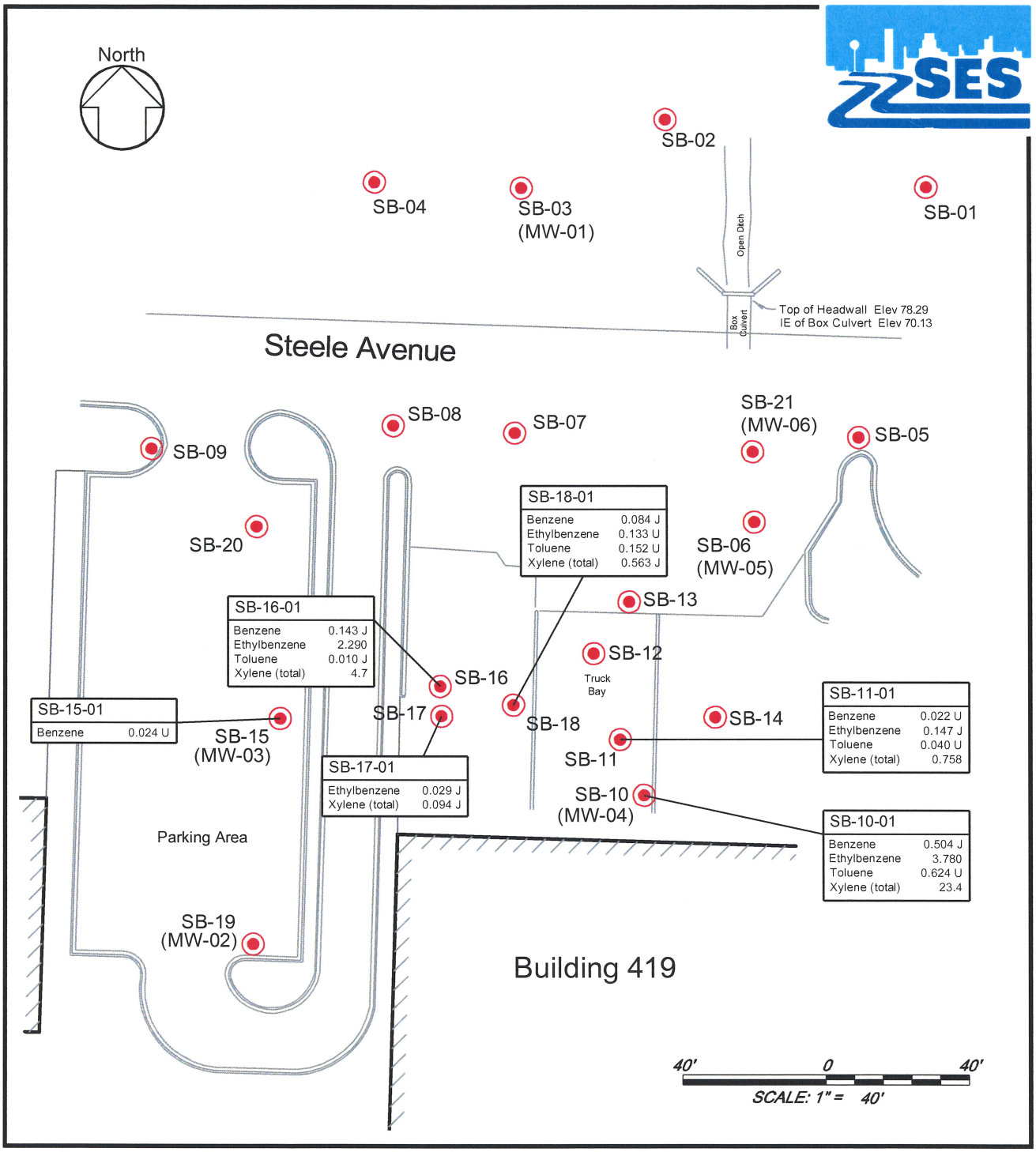
Legend

Boring Location

Job Title: Heating Oil Spill Site Investigation at Building 419 Fort Stewart, Georgia

Figure 2 March 2011 Soil Boring Locations

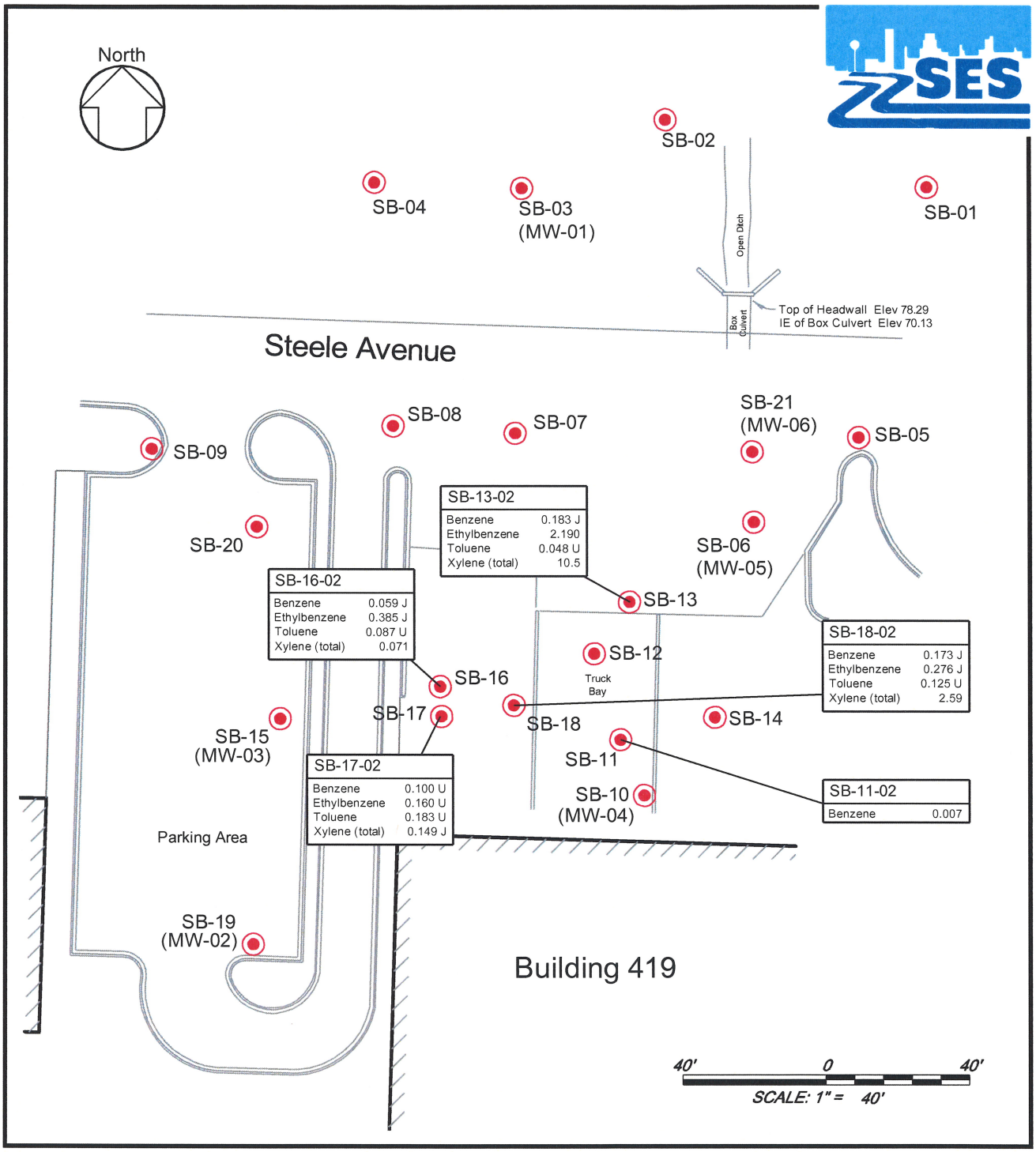
R:\E209\E209.0007\graphics\Fig 2-1 March 2011 boring locations Bldg 419 FTS.dwg(09/02/11)



Legend	
Boring Location	Job Title: Heating Oil Spill Site Investigation at Building 419 Fort Stewart, Georgia

Figure 3 Shallow Soil Boring Sample Results - BTEX March 2011

R:\E209\E209.0007\graphics\Fig 2-1 March 2011 boring locations Bldg 419 FTS.dwg(09/02/11)



Legend

Boring Location

Job Title: Heating Oil Spill Site Investigation at Building 419 Fort Stewart, Georgia

Figure 4 Deep Soil Boring Sample Results - BTEX March 2011

R:\E209\E209.0007\graphics\Fig 2-1 March 2011 boring locations Bldg 419 FTS.dwg(09/02/11)

North

SB-02

SB-04

SB-03
(MW-01)

SB-01

Open Ditch

Box Culvert

Top of Headwall Elev 78.29
IE of Box Culvert Elev 70.13

Steele Avenue

SB-09

SB-08

SB-07

SB-21
(MW-06)

SB-05

SB-20

SB-06
(MW-05)

SB-13

SB-18-01

1-Methylnaphthalene	2.680
2-Methylnaphthalene	3.970
Naphthalene	2.11 J
Phenanthrene	0.738 J

SB-13-01

Fluoranthene	0.981
Pyrene	2.69

SB-12

Truck Bay

SB-16-01

Fluorene	1.620 J
1-Methylnaphthalene	9.88 J
2-Methylnaphthalene	15.5 J
Naphthalene	4.91 J
Phenanthrene	4.120 J
Pyrene	1.02 J

SB-16

SB-17

SB-18

SB-14

SB-14-01

Fluoranthene	1.59
Indeno(1,2,3-cd)pyrene	1.430 J
Pyrene	5.85

SB-15
(MW-03)

SB-17-01

Fluorene	0.759 J
1-Methylnaphthalene	2.130
2-Methylnaphthalene	3.03
Naphthalene	0.928 J
Phenanthrene	0.876 J
Pyrene	0.874 J

SB-11

SB-10
(MW-04)

SB-10-01

Fluoranthene	53.9 U
Fluorene	25.9 U
Indeno(1,2,3-cd)pyrene	45.9 U
1-Methylnaphthalene	99.8 U
2-Methylnaphthalene	34.9 U
Naphthalene	31.9 U
Phenanthrene	23.0 U
Pyrene	39.9 U

Parking Area

Building 421

SB-19
(MW-02)

Building 419

Legend:

Boring Location

30' 0 30'

SCALE: 1" = 30'

SpecPro Environmental Services LLC
1006 Floyd Culler Court
Oak Ridge, Tennessee 37830

SES

Job Title: Heating Oil Spill Site
Investigation at Building 419
Fort Stewart, Georgia

Figure 5 Shallow Soil Boring Sample Results - PAH March 2011

R:\E209\E209.0007\graphics\Fig 4 PAH Bldg 419 FTS.dwg(09/02/11)

North

SB-04

SB-03
(MW-01)

SB-02

Open Ditch

Box Culvert

Top of Headwall Elev 78.29
IE of Box Culvert Elev 70.13

SB-01

Steele Avenue

SB-09

SB-08

SB-07

SB-21
(MW-06)

SB-05

SB-20

SB-06
(MW-05)

SB-13

SB-13-02

1-Methylnaphthalene	5.46 J
2-Methylnaphthalene	8.40 J
Naphthalene	2.69 J
Phenanthrene	1.64 J
Pyrene	0.838 J

SB-12

Truck Bay

SB-16

SB-17

SB-18

SB-14

SB-15
(MW-03)

SB-17-02

1-Methylnaphthalene	1.430
2-Methylnaphthalene	2.420
Naphthalene	1.030

SB-11

SB-10
(MW-04)

Parking Area

SB-16-02

Fluorene	1.650 J
1-Methylnaphthalene	9.24 J
2-Methylnaphthalene	14.6 J
Naphthalene	4.16 J
Phenanthrene	3.88 J
Pyrene	0.877 J

Building 421

SB-19
(MW-02)

Building 419

Legend:

Boring Location

30' 0 30'

SCALE: 1" = 30'

SpecPro Environmental Services LLC
1006 Floyd Culler Court
Oak Ridge, Tennessee 37830

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Investigation at Building 419
Fort Stewart, Georgia

Figure 6 Deep Soil Boring Sample Results - PAH March 2011

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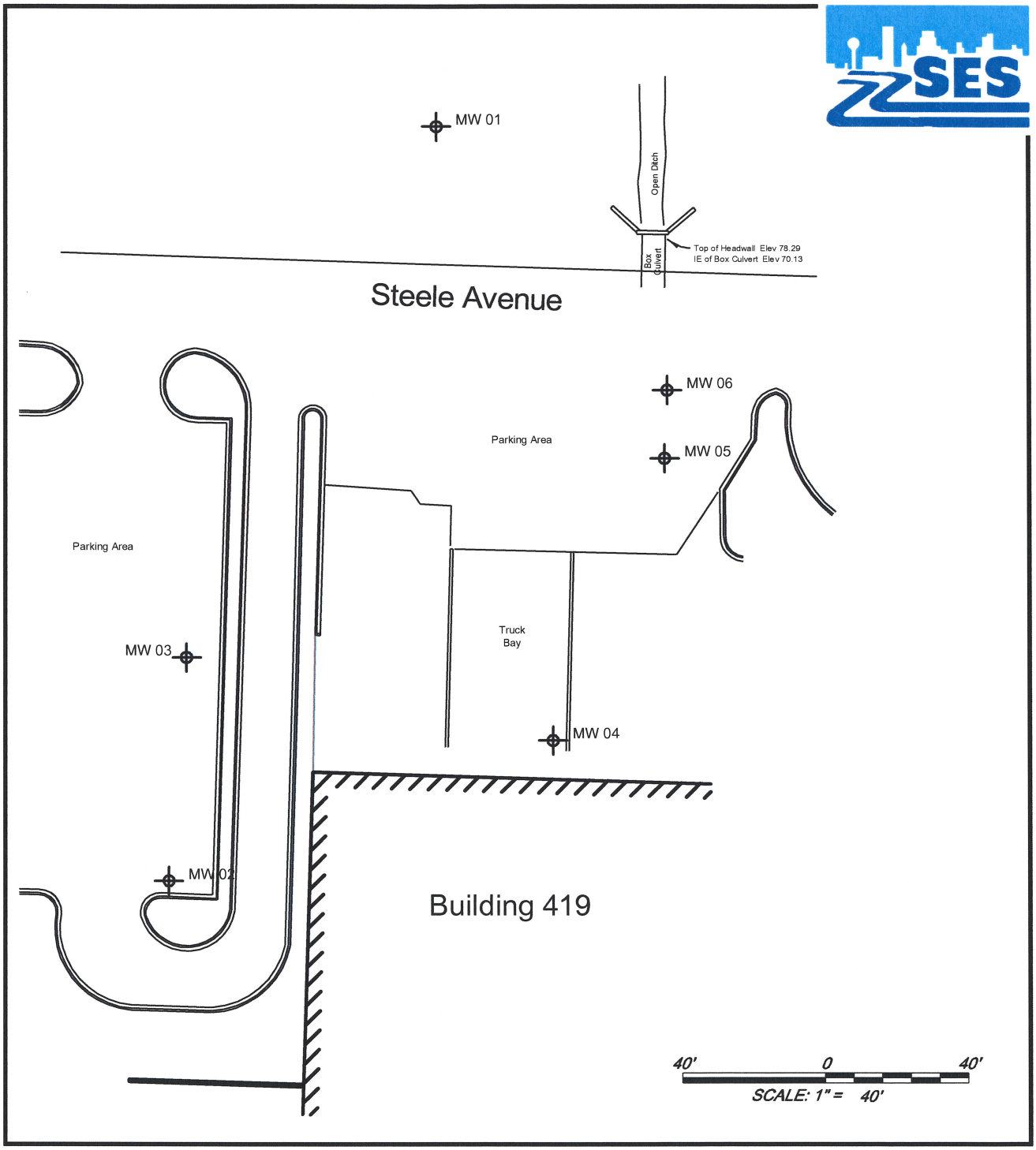


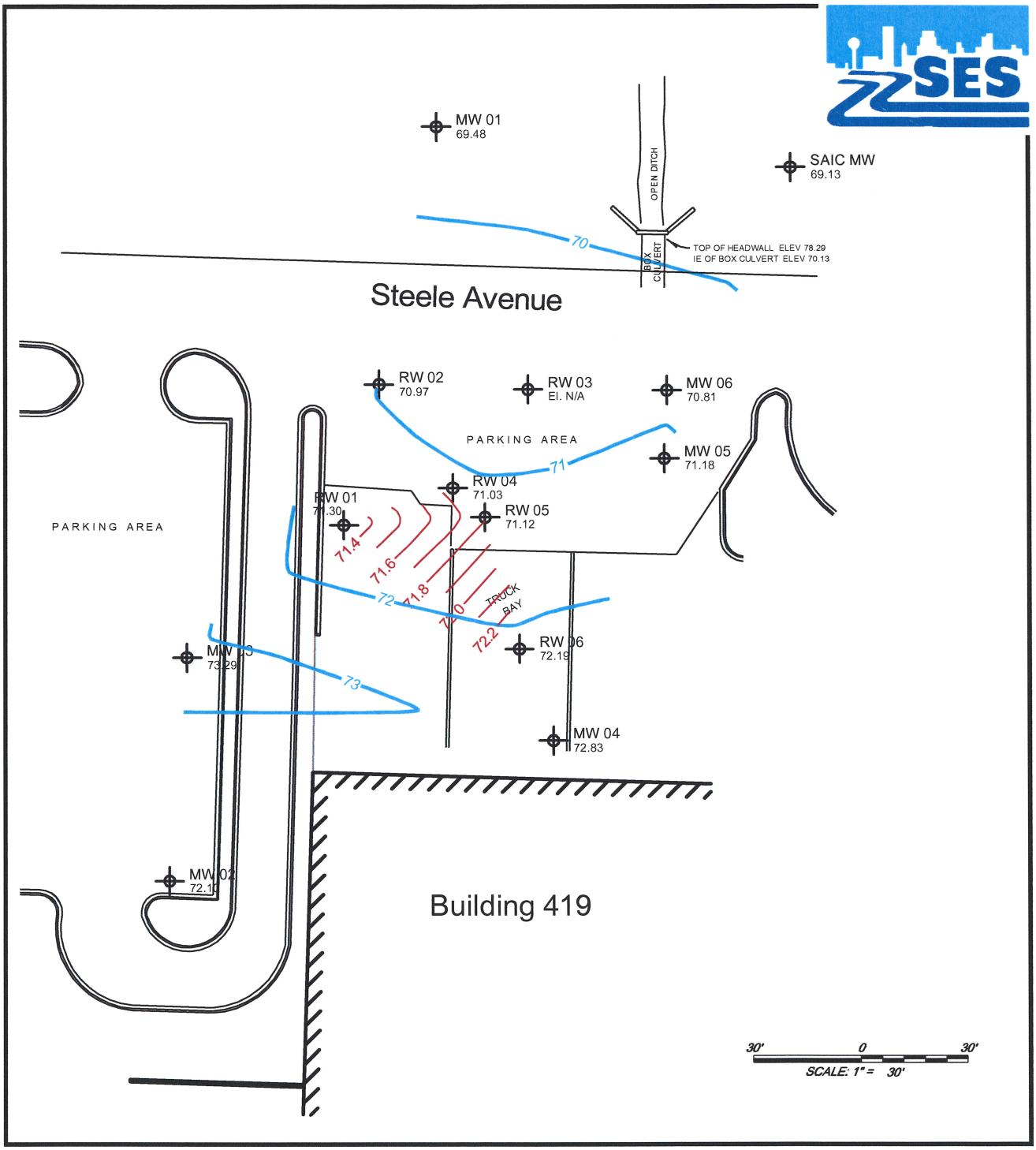
Legend

MW 05 Monitor Well

Job Title: Heating Oil Spill Site Investigation at Building 419 Fort Stewart, Georgia

Figure 7 April 2011 Groundwater Monitor Well Locations

R:\E209\E209.0007\graphics\Fig 2-3 2011 MW Locations Bldg 419 FT.dwg(09/02/11)

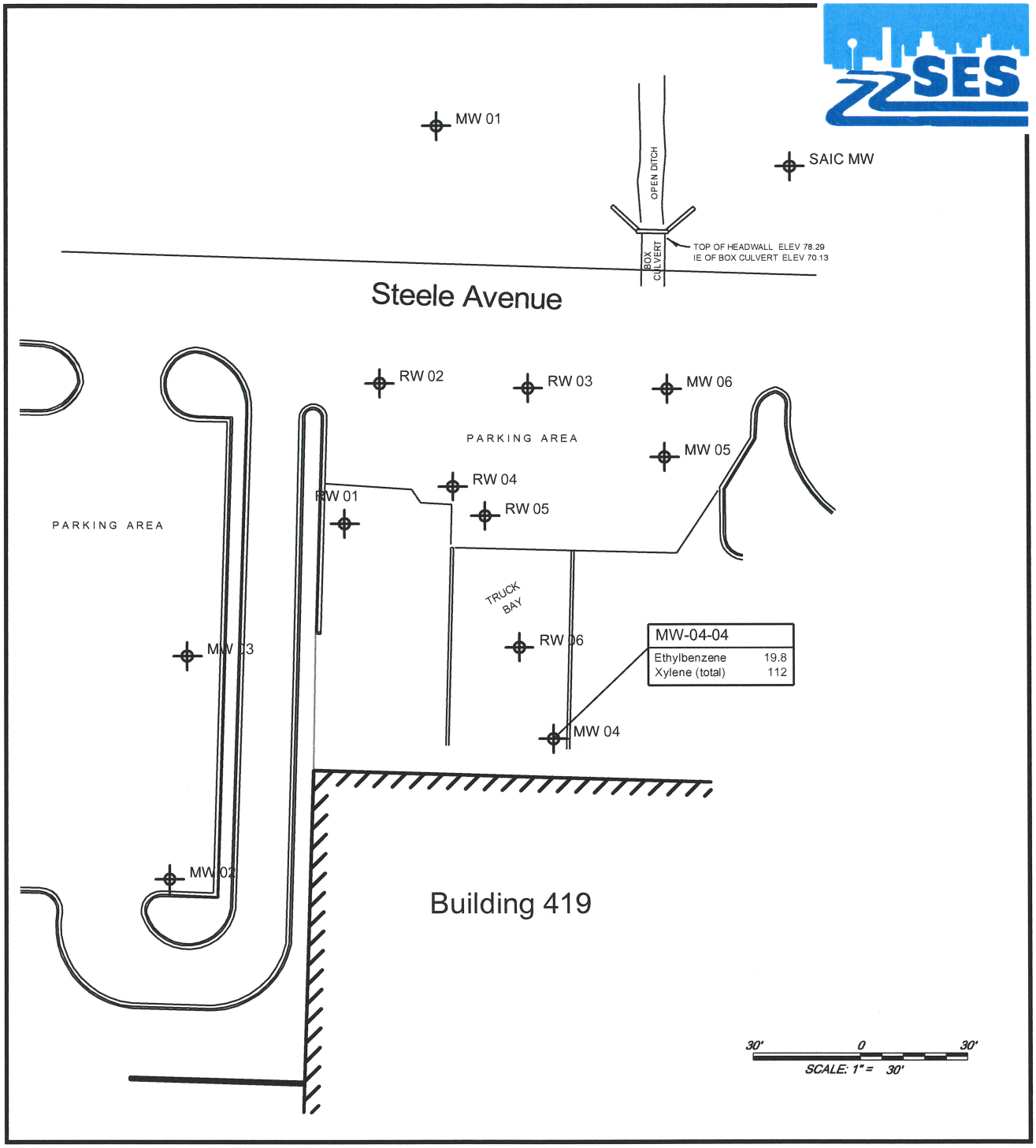


Legend	
MW 05 71.18	Monitor Well Groundwater Elevation
	Groundwater Contour
	Top of Free Product

Job Title: Heating Oil Spill Site Investigation at Building 419 Fort Stewart, Georgia

Figure 8 April 2011 Potentiometric Surface Map

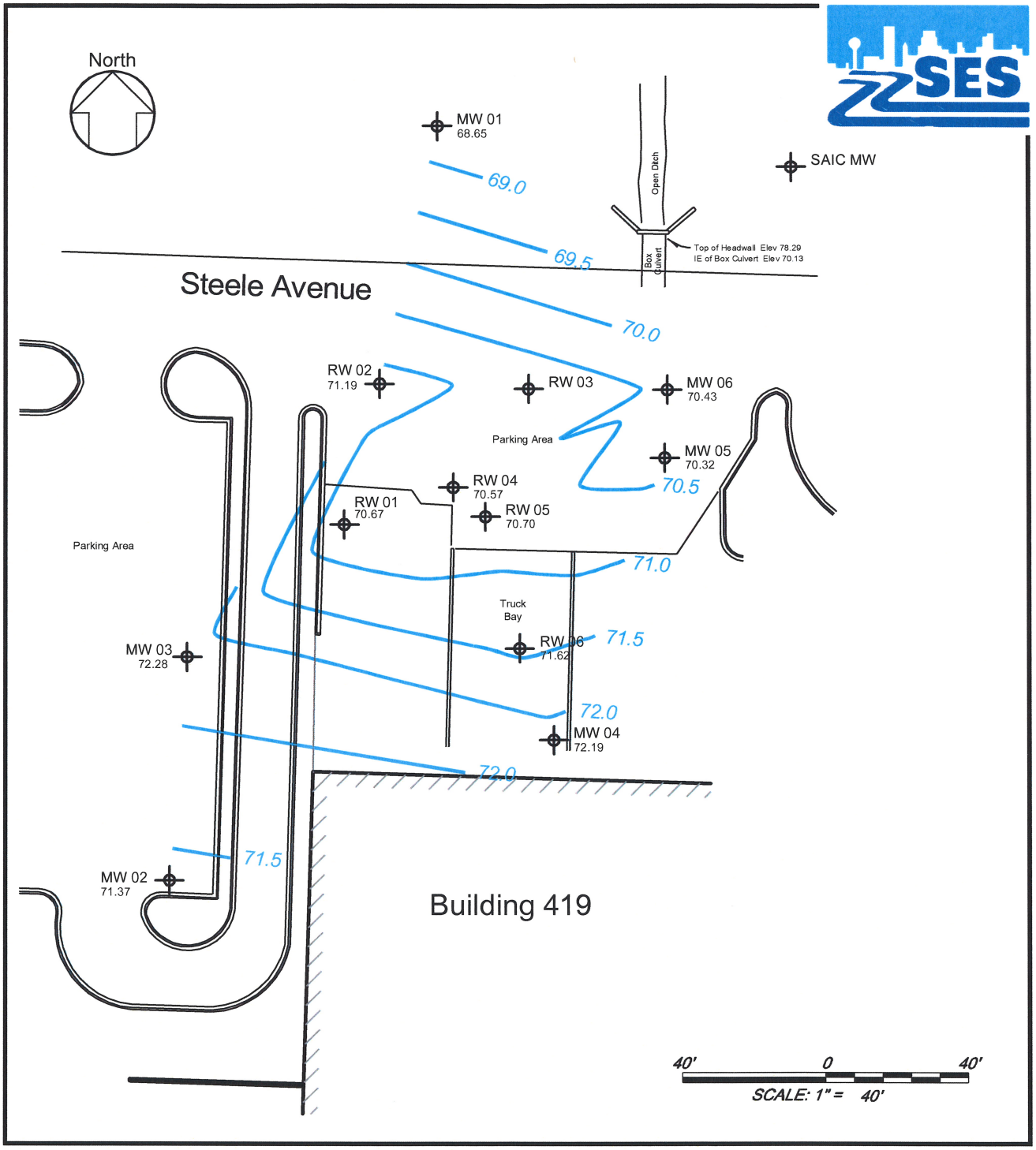
R:\E0209\E0209.0007\graphics\Site Map Bldg 419 FTS.dwg(5/19/11)



Legend	
MW 05 Monitor Well Sample Collected April 12, 2011	Job Title: Heating Oil Spill Site Investigation at Building 419 Fort Stewart, Georgia

Figure 9 Groundwater Sampling Results - BTEX April 2011

R:\E0209\E0209.0007\graphics\Figure 9 Bldg 419 FTS.dwg(10/27/11)

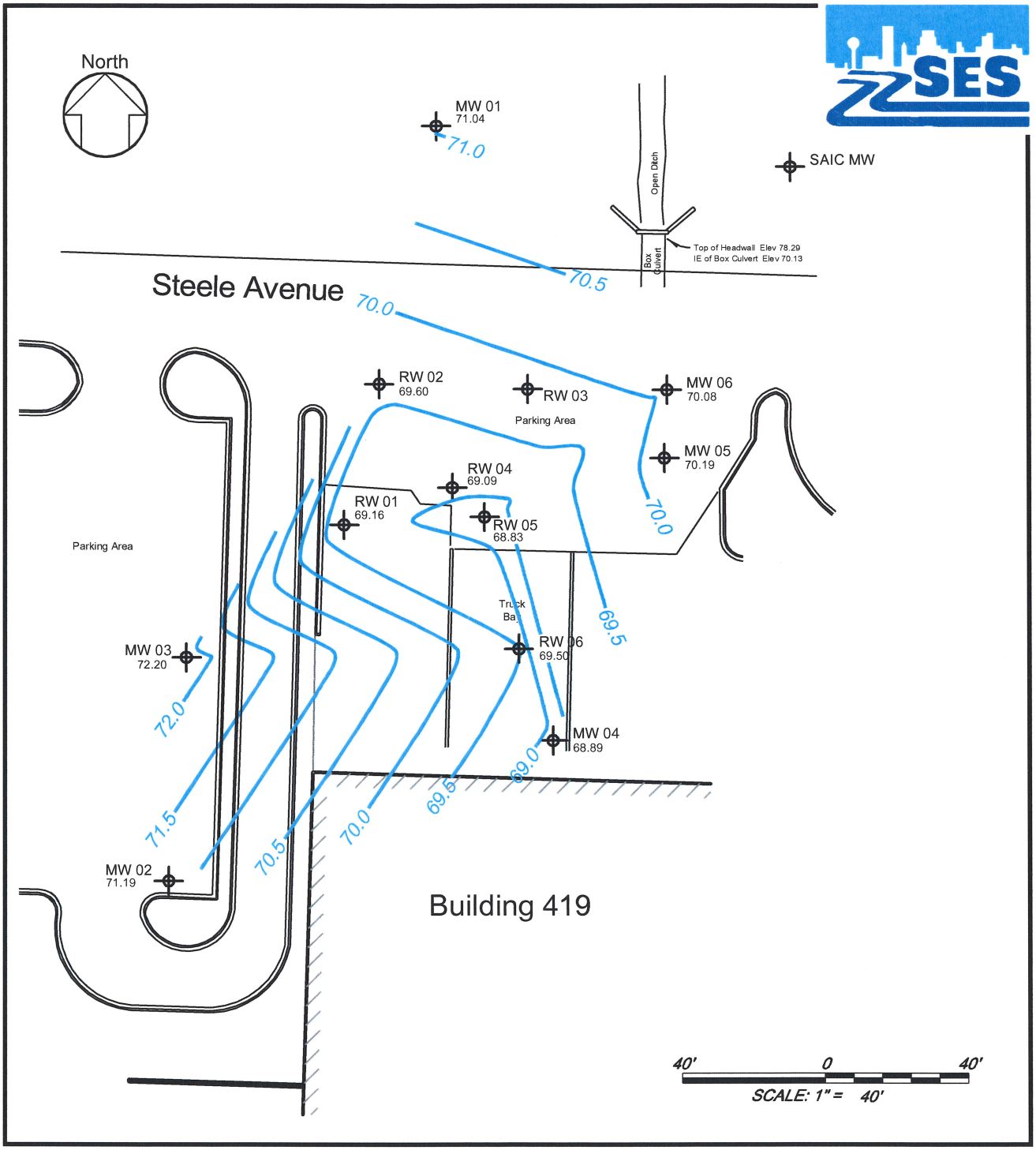


Legend	
MW 05	Monitor Well
	Groundwater Contour

Job Title: Heating Oil Spill Site Investigation at Building 419 Fort Stewart, Georgia

Figure 10 Potentiometric Map Pre-EFR Event 1 - June 12, 2011

R:\E209\E209.0007\graphics\Fig 2-9 2011 Pre-EFR 6-12-2011 Bldg 419 FT.dwg(09/02/11)



Legend

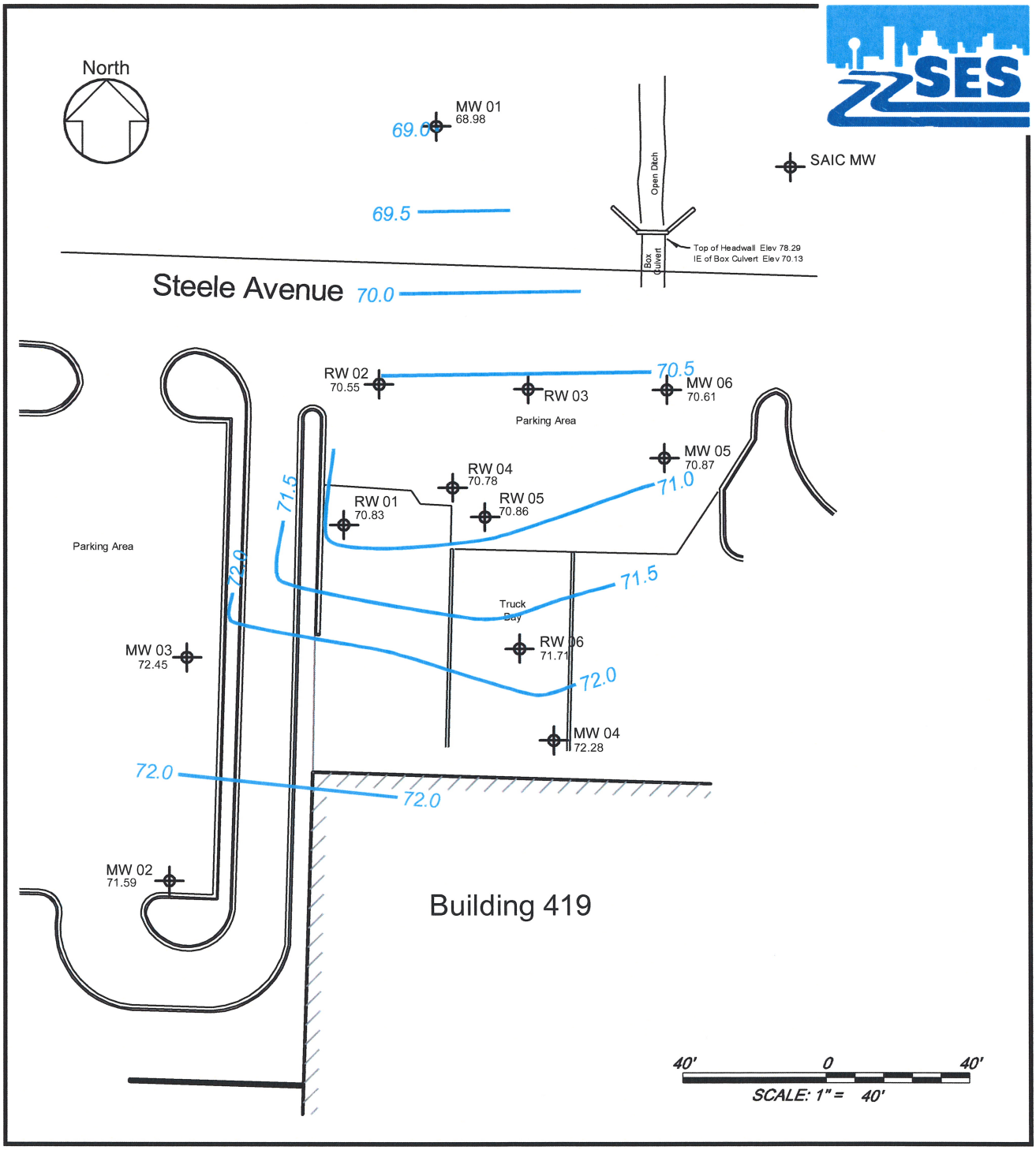
MW 05 Monitor Well

Groundwater Contour

Job Title: Heating Oil Spill Site Investigation at Building 419 Fort Stewart, Georgia

Figure 11 Potentiometric Map Post-EFR Event 1 - June 12, 2011

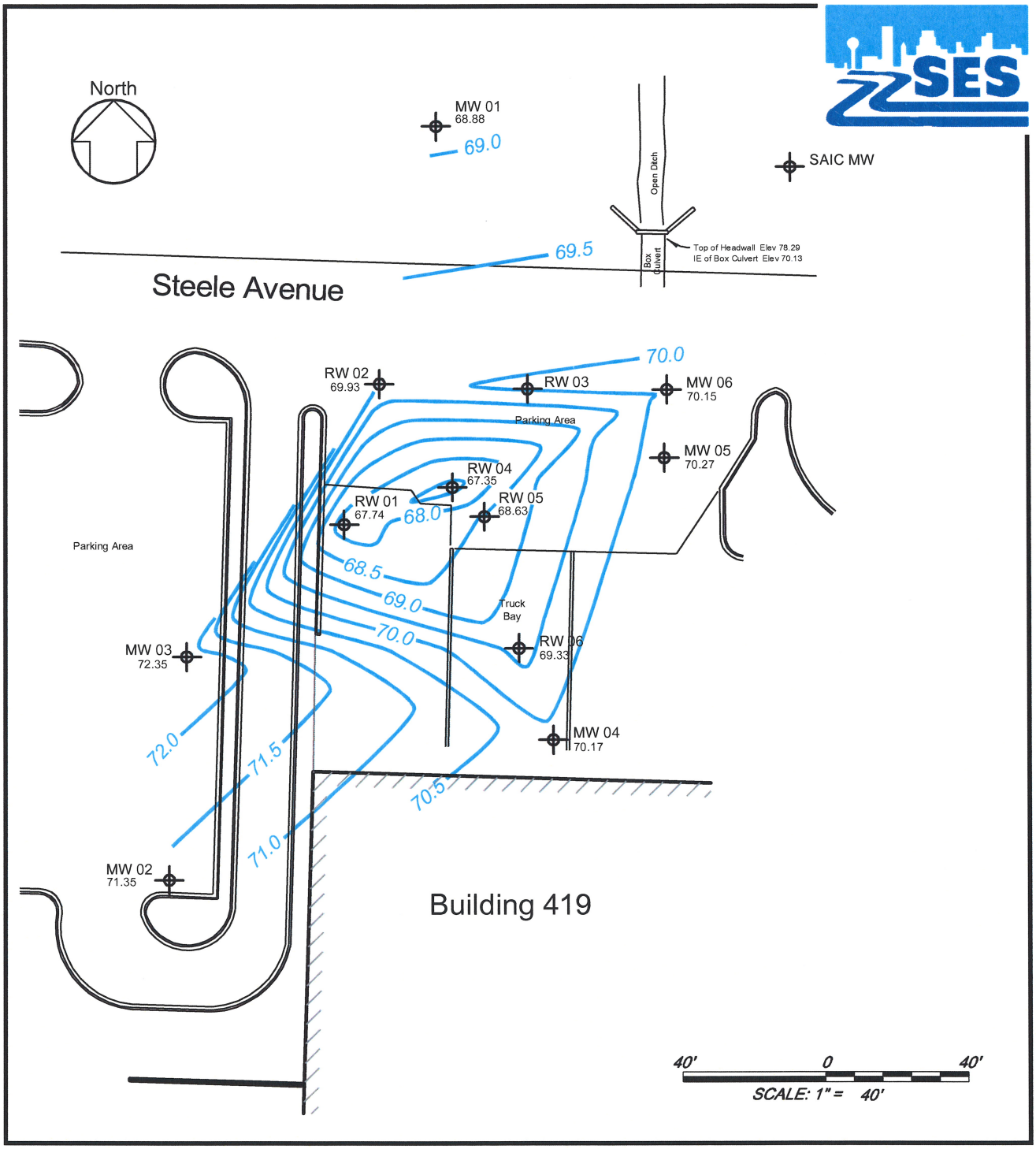
R:\E209\E209.0007\graphics\Fig 2-10 2011 Post-EFR 6-12-2011 Bldg 419 FT.dwg(09/02/11)



Legend	
MW 05 Monitor Well	Job Title: Heating Oil Spill Site Investigation at Building 419 Fort Stewart, Georgia
Groundwater Contour	

Figure 12 Potentiometric Map Pre-EFR Event 2 - July 17, 2011

R:\E209\E209.0007\graphics\Fig 2-12 2011 Pre-EFR 7-17-2011 Bldg 419 FTS.dwg(09/02/11)



Legend

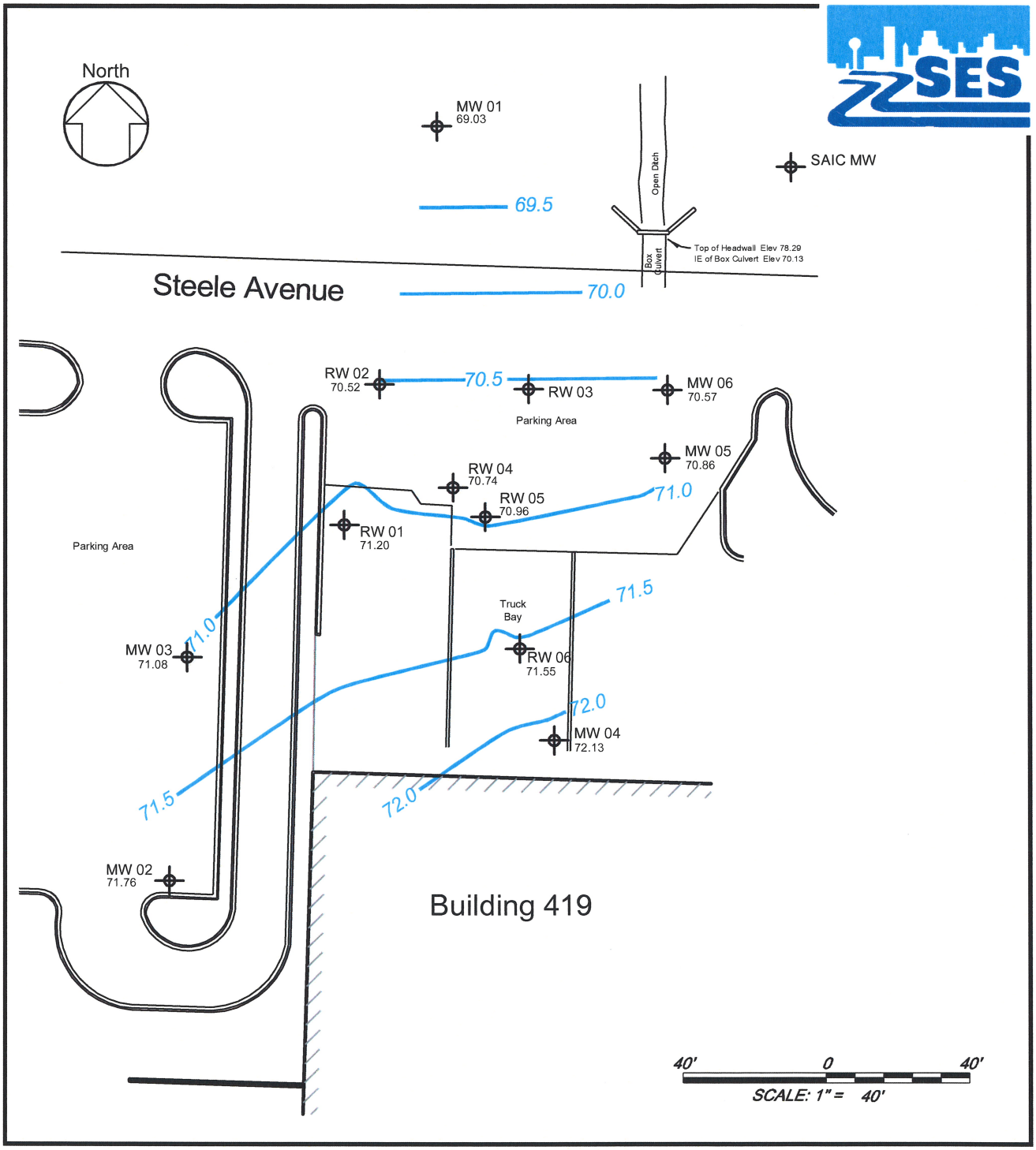
MW 05 Monitor Well

Groundwater Contour

Job Title: Heating Oil Spill Site Investigation at Building 419 Fort Stewart, Georgia

Figure 13 Potentiometric Map Post-EFR Event 2 - July 17, 2011

R:\E209\E209.0007\graphics\Fig 2-13 2011 Post-EFR 7-17-2011 Bldg 419 FTS.dwg(09/02/11)



Legend

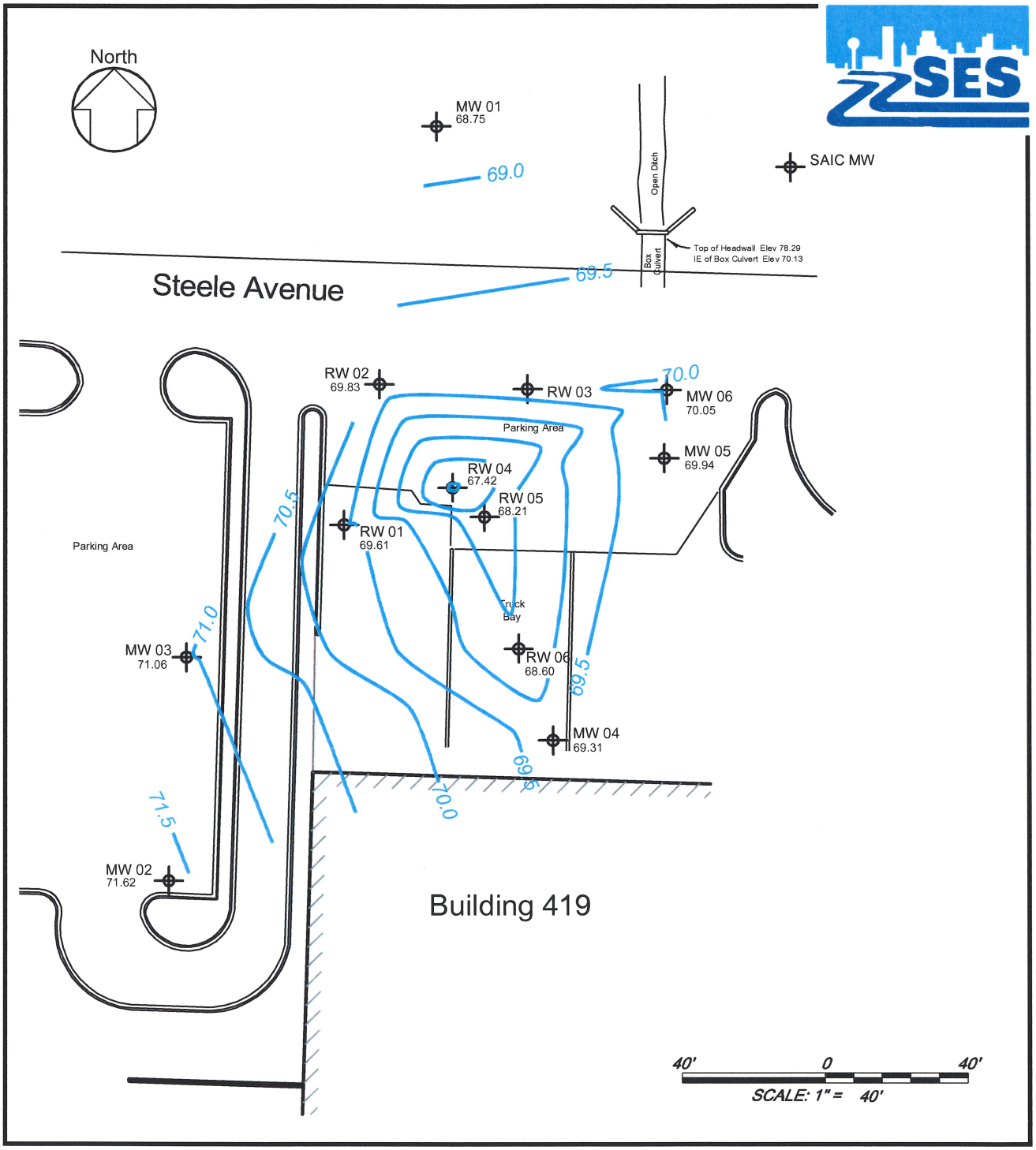
MW 05 Monitor Well

Groundwater Contour

Job Title: Heating Oil Spill Site Investigation at Building 419 Fort Stewart, Georgia

Figure 14 Potentiometric Map Pre-EFR Event 3 - August 6, 2011

R:\E209\E209.0007\graphics\Fig 2-15 2011 Pre-EFR 8-6-2011 Bldg 419 FTS.dwg(09/02/11)



Legend

MW 05 Monitor Well

Groundwater Contour

Job Title: Heating Oil Spill Site Investigation at Building 419 Fort Stewart, Georgia

Figure 15 Potentiometric Map Post-EFR Event 3 - August 6, 2011

R:\E209\E209.0007\graphics\Fig 2-16 2011 Post-EFR 8-6-2011 Bldg 419 FTS.dwg(09/02/11)

Tables

Table 1 Soil Sampling Results for BTEX

Analytical Method:						8260B	8260B	8260B	8260B
				Contaminant (mg/kg):		Benzene	Ethylbenzene	Toluene	Xylene (total)
Boring ID	Sample ID	Sample Type	Date Collected	Sample Depth (ft/bgs)	PID Reading				
SB-01	SB-01-01	REG	3/29/11	1'-3'	0	0.001 U	0.001 U	0.001 U	0.001 U
SB-01	SB-01-02	REG	3/29/11	8'-9'	0	0.001 U	0.001 U	0.001 U	0.001 U
SB-02	SB-02-01	REG	3/29/11	1'-3'	0	0.001 U	0.001 U	0.001 U	0.001 U
SB-02	SB-02-02	REG	3/29/11	8'-9'	0	0.001 U	0.001 U	0.001 U	0.001 U
SB-03	SB-03-01	REG	3/29/11	1'-3'	0	0.001 U	0.001 U	0.001 U	0.001 U
SB-03	SB-03-019	DUP	3/29/11	1'-3'	0	0.001 U	0.001 U	0.001 U	0.001 U
SB-03	SB-03-02	REG	3/29/11	6'-7'	0	0.001 U	0.001 U	0.001 U	0.001 U
SB-04	SB-04-01	REG	3/29/11	1'-3'	0	0.001 UJ	0.001 UJ	0.001 UJ	0.001 UJ
SB-04	SB-04-02	REG	3/29/11	6'-7'	0	0.001 U	0.001 U	0.001 U	0.001 U
SB-05	SB-05-01	REG	3/29/11	1'-3'	0	0.001 U	0.001 U	0.001 U	0.001 U
SB-05	SB-05-02	REG	3/29/11	6'-6.5'	0	0.001 U	0.001 U	0.001 U	0.001 U
SB-06	SB-06-01	REG	3/29/11	1'-3'	0	0.001 U	0.001 U	0.001 U	0.001 U
SB-06	SB-06-02	REG	3/29/11	7'	0	0.001 U	0.001 U	0.001 U	0.001 U
SB-07	SB-07-01	REG	3/29/11	1'-3'	0	0.001 UJ	0.001 UJ	0.001 UJ	0.001 UJ
SB-07	SB-07-02	REG	3/29/11	7'	0	0.001 U	0.001 U	0.001 U	0.001 U
SB-08	SB-08-01	REG	3/29/11	1'-3'	0	0.001 U	0.001 U	0.001 U	0.001 U
SB-08	SB-08-02	REG	3/29/11	7'	0	0.001 U	0.001 U	0.001 U	0.001 U
SB-09	SB-09-01	REG	3/29/11	6'-7'	0	0.001 U	0.001 U	0.003 J	0.001 U
SB-09	SB-09-02	REG	3/29/11	10'-11'	0	0.001 U	0.001 U	0.001 U	0.001 U
SB-10	SB-10-01	REG	3/29/11	6'-7'	5.7	**0.504 J**	**3.780**	**0.624 U**	**23.4**
SB-10	SB-10-02	REG	3/29/11	8'-9'	0	0.001 U	0.001 U	0.001 U	0.001 U
SB-11	SB-11-01	REG	3/29/11	5'	10.5	**0.022 U**	**0.147 J**	**0.040 U**	**0.758**
SB-11	SB-11-02	REG	3/29/11	9.5'	0	**0.007**	0.003 J	0.001 U	0.017
SB-12	SB-12-01	REG	3/29/11	5'	10.5	0.001 U	0.001 U	0.001 U	0.001 U
SB-12	SB-12-02	REG	3/29/11	8'	0	0.001 U	0.001 U	0.001 U	0.001 U
SB-13	SB-13-01	REG	3/30/11	1'-3'	0	0.001 U	0.001 U	0.001 U	0.001 U
SB-13	SB-13-02	REG	3/30/11	8.5'	0	**0.183 J**	**2.190**	**0.048 U**	**10.5**
SB-14	SB-14-01	REG	3/30/11	3'	0	0.001 U	0.001 J	0.001 U	0.001 U
SB-14	SB-14-02	REG	3/30/11	7'	0	0.001 U	0.003 UJ	0.003 UJ	0.002 UJ
SB-15	SB-15-01	REG	3/30/11	3'-4'	0	**0.024 U**	0.001 U	0.044 U	0.036 U
SB-15	SB-15-02	REG	3/30/11	7'	0	0.001 U	0.001 U	0.001 U	0.001 U
SB-16	SB-16-01	REG	3/30/11	7'-7.5	30	**0.143 J**	**2.290**	**0.010 J**	**4.7**
SB-16	SB-16-02	REG	3/30/11	8'-8.5'	0	**0.059 J**	**0.385 J**	**0.087 U**	**0.071**
SB-17	SB-17-01	REG	3/30/11	8'	0	0.002 J	**0.029 J**	0.001 UJ	**0.094 J**
SB-17	SB-17-02	REG	3/30/11	10'	15.5	**0.100 U**	**0.160 U**	**0.183 U**	**0.149 J**
SB-18	SB-18-01	REG	3/30/11	6'-7'	40	**0.084 J**	**0.133 U**	**0.152 U**	**0.563 J**
SB-18	SB-18-02	REG	3/30/11	10'	27	**0.173 J**	**0.276 J**	**0.125 U**	**2.59**
SB-19	SB-19-01	REG	3/30/11	4'	40	0.001 U	0.001 U	0.001 U	0.001 U
SB-19	SB-19-02	REG	3/30/11	8'	45	0.001 UJ	0.001 UJ	0.001 UJ	0.001 UJ
SB-20	SB-20-01	REG	3/30/11	4'	45	0.001 U	0.001 U	0.001 U	0.001 U
SB-20	SB-20-019	DUP	3/30/11	4'	40	0.001 UJ	0.001 UJ	0.001 UJ	0.001 UJ
SB-20	SB-20-02	REG	3/30/11	8.5'	60	0.001 U	0.001 UJ	0.001 UJ	0.001 U
GA USTMP TABLE A SOIL THRESHOLD LEVELS (mg/kg)						*0.005*	*0.4*	*0.37*	*20*
Minimum Quantitation & Reporting Limit (mg/kg)						**0.005**	**0.005**	**0.005**	**0.005**

U = The compound was not detected at the method detection limit reported.
Bold = The value is above the minimum quantitation limit.
J = The value for the compound is an estimated value.
bgs = below ground surface
BTEX = benzene, toluene, ethylbenzene, and xylene (total)
ft = feet
GA USTMP = Georgia Underground Storage Tank Management Program
mg/kg = milligrams per kilogram
PID = photoionization detector

Table 2 Soil Sampling Results for Diesel Range Organics

				Analytical Method:		8260B
				Contaminant (mg/kg):		Diesel Range Organics (C10-C28)
Boring ID	Sample ID	Sample Type	Date Collected	Sample Depth (ft/bgs)	PID Reading	
SB-01	SB-01-01	REG	3/29/11	1'-3'	0	7.28U
SB-01	SB-01-02	REG	3/29/11	8'-9'	0	7.68U
SB-02	SB-02-01	REG	3/29/11	1'-3'	0	**19.3**
SB-02	SB-02-02	REG	3/29/11	8'-9'	0	8.91U
SB-03	SB-03-01	REG	3/29/11	1'-3'	0	7.47U
SB-03	SB-03-019	DUP	3/29/11	1'-3'	0	7.68U
SB-03	SB-03-02	REG	3/29/11	6'-7'	0	7.67U
SB-04	SB-04-01	REG	3/29/11	1'-3'	0	**39.5**
SB-04	SB-04-02	REG	3/29/11	6'-7'	0	7.61U
SB-05	SB-05-01	REG	3/29/11	1'-3'	0	7.31U
SB-05	SB-05-02	REG	3/29/11	6'-6.5'	0	9.33
SB-06	SB-06-01	REG	3/29/11	1'-3'	0	7.22U
SB-06	SB-06-02	REG	3/29/11	7'	0	7.84
SB-07	SB-07-01	REG	3/29/11	1'-3'	0	**11.2**
SB-07	SB-07-02	REG	3/29/11	7'	0	7.79U
SB-08	SB-08-01	REG	3/29/11	1'-3'	0	7.59U
SB-08	SB-08-02	REG	3/29/11	7'	0	7.62U
SB-09	SB-09-01	REG	3/29/11	6'-7'	0	**10.3**
SB-09	SB-09-02	REG	3/29/11	10'-11'	0	8.14U
SB-10	SB-10-01	REG	3/29/11	6'-7'	5.7	**22100**
SB-10	SB-10-02	REG	3/29/11	8'-9'	0	**16.2**
SB-11	SB-11-01	REG	3/29/11	5'	10.5	**918J**
SB-11	SB-11-02	REG	3/29/11	9.5'	0	7.75U
SB-12	SB-12-01	REG	3/29/11	5'	10.5	**29.3**
SB-12	SB-12-02	REG	3/29/11	8'	0	**39.6**
SB-13	SB-13-01	REG	3/30/11	1'-3'	0	**53**
SB-13	SB-13-02	REG	3/30/11	8.5'	0	**13900**
SB-14	SB-14-01	REG	3/30/11	3'	0	**39**
SB-14	SB-14-02	REG	3/30/11	7'	0	**47.9**
SB-15	SB-15-01	REG	3/30/11	3'-4'	0	**13.7**
SB-15	SB-15-02	REG	3/30/11	7'	0	**13.5**
SB-16	SB-16-01	REG	3/30/11	7'-7.5	30	**8070**
SB-16	SB-16-02	REG	3/30/11	8'-8.5'	0	**8310**
SB-17	SB-17-01	REG	3/30/11	8'	0	**3590**
SB-17	SB-17-02	REG	3/30/11	10'	15.5	**163**
SB-18	SB-18-01	REG	3/30/11	6'-7'	40	**3890**
SB-18	SB-18-02	REG	3/30/11	10'	27	**296**
SB-19	SB-19-01	REG	3/30/11	4'	40	7.16U
SB-19	SB-19-02	REG	3/30/11	8'	45	**20.2**
SB-20	SB-20-01	REG	3/30/11	4'	45	**16.6**
SB-20	SB-20-019	DUP	3/30/11	4'	40	**17.3**
SB-20	SB-20-02	REG	3/30/11	8.5'	60	8.43
Minimum Quantitation & Reporting Limit (mg/kg)						10

U Indicates the compound was not detected at the method detection limit reported.
J Indicates the value for the compound is an estimated value.
Bold indicates the value was above the reporting limit.
bgs = below ground surface ft = feet
mg/kg = milligrams per kilogram PID = photoionization detector

Table 3 Soil Sampling Results for Petroleum Aromatic Hydrocarbons

			Analytical Method:		8270C	8270C	8270C	8270C	8270C	8270C	8270C	8270C	8270C	8270C	8270C	8270C	8270C	8270C	8270C	8270C	8270C
			Contaminant (mg/kg):		Acenaphthene	Acenapthylene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene	1-Methylnaphthalene	2-Methylnaphthalene	Naphthalene	Phenanthrene	Pyrene
Boring ID	Sample ID	Sample Type	Date Collected	Sample Depth (ft/bgs)	PID Reading																	
SB-01	SB-01-01	REG	3/29/11	1'-3'	0	0.029 U	0.022 U	0.030 U	0.040 U	0.025 U	0.035 U	0.077 U	0.043 U	0.034 U	0.066 U	0.059 U	0.029 U	0.050 U	0.109 U	0.038 U	0.035 U	0.025 U	0.044 UJ
SB-01	SB-01-02	REG	3/29/11	8'-9'	0	0.030 U	0.023 U	0.031 U	0.042 U	0.027 U	0.037 U	0.081 U	0.045 U	0.036 U	0.069 U	0.062 U	0.030 U	0.053 U	0.115 U	0.040 U	0.037 U	0.027 U	0.046 UJ
SB-02	SB-02-01	REG	3/29/11	1'-3'	0	0.027 U	0.021 U	0.028 U	0.038 U	0.024 U	0.033 U	0.073 U	0.041 U	0.032 U	0.063 U	0.056 U	0.027 U	0.048 U	0.104 U	0.037 U	0.033 U	0.024 U	0.042 J
SB-02	SB-02-02	REG	3/29/11	8'-9'	0	0.035 U	0.027 U	0.036 U	0.048 U	0.031 U	0.043 U	0.094 U	0.052 U	0.042 U	0.080 U	0.072 U	0.035 U	0.062 U	0.134 U	0.047 U	0.043	0.031 U	0.054 UJ
SB-03	SB-03-01	REG	3/29/11	1'-3'	0	0.030 U	0.023 U	0.031 U	0.042 U	0.027 U	0.037 U	0.081 U	0.045 U	0.036 U	0.069 U	0.062 U	0.030 U	0.053 U	0.115 U	0.040 U	0.037 U	0.027 U	0.046 UJ
SB-03	SB-03-019	DUP	3/29/11	1'-3'	0	0.030 U	0.023 U	0.031 U	0.041 U	0.027 U	0.037 U	0.080 U	0.045 U	0.036 U	0.069 U	0.062 U	0.030 U	0.053 U	0.012 U	0.040 U	0.037 U	0.026 U	0.046 UJ
SB-03	SB-03-02	REG	3/29/11	6'-7'	0	0.030 U	0.023 U	0.031 U	0.041 U	0.026 U	0.037 U	0.080 U	0.044 U	0.035 U	0.068 U	0.062 U	0.030 U	0.052 U	0.011 U	0.040 U	0.036 U	0.026 U	0.046 UJ
SB-04	SB-04-01	REG	3/29/11	1'-3'	0	0.030 U	0.023 U	0.030 U	0.041 U	0.026 U	0.037 U	0.080 U	0.044 U	0.035 U	0.068 U	0.061 U	0.029 U	0.052 U	0.113 U	0.040 U	0.036 U	0.026 U	0.045 UJ
SB-04	SB-04-02	REG	3/29/11	6'-7'	0	0.030 U	0.023 U	0.032 U	0.042 U	0.027 U	0.037 U	0.082 U	0.045 U	0.036 U	0.070 U	0.063 U	0.030 U	0.054 U	0.117 U	0.041 U	0.037 U	0.027 U	0.047 UJ
SB-05	SB-05-01	REG	3/29/11	1'-3'	0	0.028 U	0.022 U	0.029 U	0.039 U	0.118 J	0.140 J	0.106 J	0.054 J	0.092 J	0.065 U	0.058 U	0.028 U	0.050 U	0.108 U	0.038 U	0.034 U	0.025 U	0.096 UJ
SB-05	SB-05-02	REG	3/29/11	6'-6.5'	0	0.030 U	0.023 U	0.031 U	0.041 U	0.026 U	0.037 U	0.080 U	0.045 U	0.036 U	0.069 U	0.062 U	0.030 U	0.053 U	0.114 U	0.040 U	0.037 U	0.026 U	0.046 U
SB-06	SB-06-01	REG	3/29/11	1'-3'	0	0.028 U	0.022 U	0.029 U	0.039 U	0.025 U	0.035 U	0.075 U	0.042 U	0.033 U	0.065 U	0.058 U	0.028 U	0.050 U	0.108 U	0.038 U	0.035 U	0.025 U	0.043 UJ
SB-06	SB-06-02	REG	3/29/11	7'	0	0.031 U	0.024 U	0.032 U	0.043 U	0.028 U	0.038 U	0.084 U	0.047 U	0.037 U	0.072 U	0.065 U	0.031 U	0.055 U	0.120 U	0.042 U	0.038 U	0.028 U	0.048 UJ
SB-07	SB-07-01	REG	3/29/11	1'-3'	0	0.032 U	0.025 U	0.033 U	0.044 U	0.028 U	0.040 U	0.086 U	0.048 U	0.038 U	0.074 U	0.067 U	0.032 U	0.057 U	0.123 U	0.043 U	0.04	0.028 U	0.050 UJ
SB-07	SB-07-02	REG	3/29/11	7'	0	0.030 U	0.023 U	0.031 U	0.041 U	0.026 U	0.036 U	0.079 U	0.044 U	0.035 U	0.068 U	0.061 U	0.029 U	0.052 U	0.113 U	0.040 U	0.036 U	0.026 U	0.045 U
SB-08	SB-08-01	REG	3/29/11	1'-3'	0	0.030 U	0.023 U	0.031 U	0.041 U	0.026 U	0.037 U	0.080 U	0.045 U	0.035 U	0.068 U	0.062 U	0.030 U	0.053 U	0.114 U	0.040 U	0.037 U	0.026 U	0.046 UJ
SB-08	SB-08-02	REG	3/29/11	7'	0	0.030 U	0.023 U	0.031 U	0.042 U	0.027 U	0.037 U	0.081 U	0.045 U	0.036 U	0.069 U	0.062 U	0.030 U	0.053 U	0.115 U	0.040 U	0.037 U	0.037 U	0.046 UJ
SB-09	SB-09-01	REG	3/29/11	6'-7'	0	0.028 U	0.022 U	0.029 U	0.107 J	0.102 J	0.207 J	0.076 U	0.080 J	0.128 J	0.065 U	0.113 J	0.028 U	0.050 U	0.108 U	0.038 U	0.035 U	0.025 U	0.297 J
SB-09	SB-09-02	REG	3/29/11	10'-11'	0	0.031 U	0.024 U	0.032 U	0.043 U	0.027 U	0.038 U	0.083 U	0.046 U	0.037 U	0.071 U	0.064 U	0.031 U	0.055 U	0.118 U	0.042 U	0.038 U	0.027 U	0.047 UJ
SB-10	SB-10-01	REG	3/29/11	6'-7'	5.7	**25.90 U**	**20.0 U**	**26.9 U**	**35.9 U**	**23.0 U**	**31.9 U**	**69.9 U**	**38.90 U**	**30.9 U**	**59.9 U**	**53.9 U**	**25.9 U**	**45.9 U**	**99.8 U**	**34.9 U**	**31.9 U**	**23.0 U**	**39.9 U**
SB-10	SB-10-02	REG	3/29/11	8'-9'	0	0.032 U	0.024 U	0.033 U	0.044 U	0.028 U	0.039 U	0.085 U	0.048 U	0.038 U	0.073 U	0.066 U	0.032 U	0.056 U	0.122 U	0.043 U	0.039 U	0.028 U	0.049 U
SB-11	SB-11-01	REG	3/29/11	5'	10.5	0.028 U	0.021 U	0.029 U	0.107 J	0.071 J	0.133 J	0.075 U	0.050 J	0.104 J	0.064 U	0.108 J	0.028 U	0.049 U	0.210 J	0.304 J	0.072 J	0.025 U	0.314 J
SB-11	SB-11-02	REG	3/29/11	9.5'	0	0.031 U	0.024 U	0.032 U	0.043 U	0.027 U	0.038 U	0.083 U	0.046 U	0.037 U	0.071 U	0.064 U	0.031 U	0.055 U	0.119 U	0.042 U	0.038 U	0.027 U	0.048 U
SB-12	SB-12-01	REG	3/29/11	5'	10.5	0.032 U	0.064 J	0.033 U	0.175 J	0.216 J	0.333 J	0.086 U	0.161 J	0.245 J	0.074 U	0.207 J	0.032 U	0.057 U	0.123 U	0.431 U	0.039 U	0.078 J	0.51
SB-12	SB-12-02	REG	3/29/11	8'	0	0.028 U	0.067 J	0.029 U	0.208 J	0.027 J	0.427	0.161 J	0.120 J	0.289 J	0.065 U	0.180 J	0.028 U	0.122 J	0.108 U	0.050 J	0.036 J	0.062 J	0.517
SB-13	SB-13-01	REG	3/30/11	1'-3'	0	0.027 U	0.210 J	0.057 J	**0.918**	**1.01**	**1.590 J**	0.490	0.567	**1.02**	0.127 J	0.981	0.027 U	0.359	0.105 U	0.049 J	0.047 J	0.128 J	**2.69**
SB-13	SB-13-02	REG	3/30/11	8.5'	0	0.154 U	0.118 U	0.160 U	0.213 U	0.136 UJ	0.189 UJ	0.414 UJ	0.231 UJ	0.183 U	0.355 UJ	0.319 U	0.154 U	0.272 UJ	**5.46 J**	**8.40 J**	**2.69 J**	**1.64 J**	**0.838 J**
SB-14	SB-14-01	REG	3/30/11	3'	0	0.028 U	0.560	0.139 J	**2.89**	**3.10 J**	**3.56 J**	**1.730 J**	**1.64 J**	**2.88**	0.495 J	**1.59**	0.113 J	**1.430 J**	0.108 U	0.149 J	0.175 J	0.271 J	**5.85**
SB-14	SB-14-02	REG	3/30/11	7'	0	0.067 U	0.052 U	0.070 U	0.093 U	0.060 UJ	0.083 UJ	0.181 UJ	0.101 UJ	0.080 U	0.55 UJ	0.140 U	0.067 U	0.119 UJ	0.259 U	0.091 U	0.083 U	0.060 U	0.197 J
SB-15	SB-15-01	REG	3/30/11	3'-4'	0	0.030 U	0.023 U	0.031 U	0.041 U	0.026 U	0.037 U	0.080 U	0.045 U	0.035 U	0.069 U	0.062 U	0.030 U	0.053 U	0.114 U	0.040 U	0.037 U	0.026 U	0.046 U
SB-15	SB-15-02	REG	3/30/11	7'	0	0.031 U	0.047 J	0.033 U	0.332 J	0.223 J	0.337 J	0.118 J	0.143 J	0.336 J	0.072 U	0.397 J	0.031 U	0.055 U	0.120 U	0.042 U	0.039 U	0.139 J	0.640
SB-16	SB-16-01	REG	3/30/11	7'-7.5	30	0.179 U	0.115 U	0.155 U	0.207 U	0.132 UJ	0.184 UJ	0.402 UJ	0.224 UJ	0.178 U	0.344 UJ	0.310 U	**1.620 J**	0.264 UJ	**9.88 J**	**15.5 J**	**4.91 J**	**4.12 J**	**1.02 J**
SB-16	SB-16-02	REG	3/30/11	8'-8.5'	0	0.169 U	0.130 U	0.175 U	0.234 U	0.149 U	0.208 U	0.455 U	0.253 U	0.201 U	0.390 U	0.351 U	**1.650 J**	0.299 U	**9.24 J**	**14.6 J**	**4.16 J**	**3.88 J**	**0.877 J**
SB-17	SB-17-01	REG	3/30/11	8'	0	0.160 U	0.123 U	0.166 U	0.221 U	0.141 UJ	0.196 UJ	0.430 UJ	0.239 UJ	0.190 U	0.368 UJ	0.331 U	0.759 J	0.282 UJ	**2.130**	**3.03**	**0.928 J**	**0.876 J**	**0.874 J**
SB-17	SB-17-02	REG	3/30/11	10'	15.5	0.048 U	0.037 U	0.050 U	0.067 U	0.044 U	0.059 U	0.129 U	0.072 U	0.057 U	0.111 U	0.100 U	0.017 J	0.085 U	**1.430**	**2.420**	**1.030**	0.231 J	0.074 U
SB-18	SB-18-01	REG	3/30/11	6'-7'	40	0.210 U	0.161 U	0.218 U	0.290 U	0.185 U	0.258 U	0.565 U	0.315 U	0.250 U	0.484 U	0.435 U	0.210 U	0.371 U	**2.680**	**3.970**	**2.11 J**	**0.738 J**	0.484 J
SB-18	SB-18-02	REG	3/30/11	10'	27	0.032 U	0.025 U	0.033 U	0.044 U	0.028 U	0.039 U	0.086 U	0.048 U	0.038 U	0.074 U	0.066 U	0.080 J	0.056 U	0.406	0.655	0.254 J	0.155 J	0.049 U
SB-19	SB-19-01	REG	3/30/11	4'	40	0.028 U	0.022 U	0.029 U	0.039 U	0.025 U	0.034 U	0.075 U	0.042 U	0.033 U	0.064 U	0.058 U	0.028 U	0.049 U	0.107 U	0.037 U	0.034 U	0.025 U	0.043 U
SB-19	SB-19-02	REG	3/30/11	8'	45	0.030 U	0.023 U	0.031 U	0.041 U	0.026 U	0.037 U	0.080 U	0.045 U	0.036 U	0.069 U	0.062 U	0.030 U	0.053 U	0.115 U	0.040 U	0.037 U	0.026 U	0.053 J
SB-20	SB-20-01	REG	3/30/11	4'	45	0.033 U	0.025 U	0.034 U	0.046 U	0.029 U	0.040 U	0.089 U	0.049 U	0.039 U	0.076 U	0.068 U	0.033 U	0.058 U	0.126 U	0.044 U	0.040 U	0.029 U	0.051 U
SB-20	SB-20-019	DUP	3/30/11	4'	40	0.036 U	0.027 U	0.037 U	0.049 U	0.032 U	0.044 U	0.096 U	0.053 U	0.042 U	0.082 U	0.074 U	0.036 U	0.063 U	0.137 U	0.048 U	0.115 J	0.075 J	0.055 U
SB-20	SB-20-02	REG	3/30/11	8.5'	60	0.032 U	0.025 U	0.034 U	0.045 U	0.029 U	0.040 U	0.087 U	0.048 U	0.039 U	0.075 U	0.067 U	0.032 U	0.057 U	0.124 U	0.044 U	0.040 U	0.029 U	0.050 U
GA USTMP TABLE A SOIL THRESHOLD LEVELS (mg/kg)						NA	NA	NA	NA	0.66	0.82	NA	1.600	0.66	1.500	NA	NA	0.66	NA	NA	NA	NA	NA
Minimum Quantitation & Reporting Limit (mg/kg)						**0.660**	**0.660**	**0.660**	**0.660**	**0.660**	**0.660**	**0.660**	**0.660**	**0.660**	**0.660**	**0.660**	**0.660**	**0.660**	**0.660**	**0.660**	**0.660**	**0.660**	**0.660**

U Indicates the compound was not detected at the method detection limit reported.
J Indicates the value for the compound is an estimated value.
Bold indicates the value is above the minimum quantitation limit.
bgs = below ground surface
ft = feet
mg/kg = milligrams per kilogram
NA = not available
PID = photoionization detector

Table 4 Monitor Well Construction Data April 2011

Monitor Well Number	Date Installed	Total Depth of Well (ft-bgs)	Top of Screen (ft-bgs)
MW-01	04/06/2011	14	4
MW-02	04/06/2011	14	4
MW-03	04/06/2011	13.9	3.9
MW-04	04/06/2011	13.7	3.7
MW-05	04/07/2011	13.8	3.8
MW-06	04/07/2011	13.8	3.8

bgs = below ground surface ft = feet

Table 5 Groundwater Elevations April 2011

Well Number	Date Measured	Top of Casing (ft AMSL)	Depth to Free Product (ft TOC)	Water Depth (ft TOC)	Product Thickness (ft)	Corrected Groundwater Elev. (ft)
April 27, 2011						
MW-01	04/27/2011	76.29	NP	6.81	---	69.48
MW-02	04/27/2011	79.38	NP	7.28	---	72.10
MW-03	04/27/2011	79.94	NP	6.65	---	73.29
MW-04	04/27/2011	76.78	NP	3.95	---	72.83
MW-05	04/27/2011	78.92	NP	7.74	---	71.18
MW-06	04/27/2011	78.92	NP	8.11	---	70.81
RW-01	04/27/2011	79.25	7.95	7.96	0.01	71.30*
RW-02	04/27/2011	79.22	NP	8.25	---	70.97
RW-04	04/27/2011	78.98	7.24	11.18	3.94	71.03*
RW-05	04/27/2011	79.19	7.41	11.06	3.65	71.12*
RW-06	04/27/2011	77.59	5.24	6.13	0.89	72.19*

NOTE:
Corrected Groundwater Elevation = Top of casing elevation - Depth to water + (Specific gravity x Product Thickness)
Fuel oil's specific gravity of 0.82 was used.
*Corrected groundwater elevation because of free product
AMSL - Above Mean Sea Level
ft – feet TOC top of casing

Table 6 Groundwater Sampling Results for BTEX

Analytical Method:				8260B	8260B	8260B	8260B
			Contaminant (mg/kg):	Benzene	Ethylbenzene	Toluene	Xylene (total)
Well ID	Sample ID	Sample Type	Date Collected				
MW-01	MW-01-01	REG	4/12/11	0.140U	0.150U	0.190U	0.220U
MW-02	MW-02-02	REG	4/12/11	0.140U	0.150U	0.190U	0.220U
MW-03	MW-03-03	REG	4/12/11	0.140U	0.150U	0.190U	0.220U
MW-04	MW-04-04	REG	4/12/11	3.67	**19.8**	0.839J	**112**
MW-05	MW-05-05	REG	4/12/11	0.140U	0.150U	0.190U	0.220U
MW-05	MW-05-059	DUP	4/12/11	0.140U	0.150U	0.190U	0.220U
MW-06	MW-06	REG	4/12/11	0.140	0.150U	0.190U	0.220U
Georgia Instream Water Quality Standard				*71.28*	*28,718*	*200,000*	*NRC*
Minimum Quantitation & Reporting Limit				**5**	**5**	**5**	**5**

U Indicates the compound was not detected at the method detection limit

J Indicates the value for the compound is an estimated value.

BTEX= benzene, toluene, ethylbenzene, and xylene (total)

mg/kg = milligrams per kilogram

NRC - No Regulatory Criteria

Table 7 Groundwater Sampling Results for Petroleum Aromatic Hydrocarbons

		Analytical Method:		8270C	8270C	8270C	8270C	8270C	8270C	8270C	8270C	8270C	8270C	8270C	8270C		8270C	8270C	8270C	8270C
		Contaminant (mg/kg):		Acenaphthene	Acenapthylene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene	1-Methylnaphthalene	2-Methylnaphthalene	Naphthanlene	Phenanthrene	Pyrene
Boring ID	**Sample ID**	**Sample Type**	**Date Collected**																		
MW-01	MW-01-01	REG	4/12/11	0.046 U	0.046 U	0.046 U	0.046 U	0.046 U	0.046 U	0.046 U	0.046 U	0.046 U	0.046 U	0.046 U	0.046 U	0.046 U	0.046 U	0.046 U	0.046 U	0.046 U	0.046 U
MW-02	MW-02-02	REG	4/12/11	0.047 UJ	0.047 UJ	0.047 UJ	0.047 UJ	0.047 UJ	0.047 UJ	0.047 UJ	0.047 UJ	0.047 UJ	0.047 UJ	0.047 UJ	0.047 UJ	0.047 UJ	0.047 UJ	0.047 UJ	0.047 UJ	0.047 UJ	0.047 UJ
MW-03	MW-03-03	REG	4/12/11	0.046 UJ	0.046 UJ	0.046 UJ	0.046 UJ	0.046 UJ	0.046 UJ	0.046 UJ	0.046 UJ	0.046 UJ	0.046 UJ	0.046 UJ	0.046 UJ	0.046 UJ	0.046 UJ	0.046 UJ	0.046 UJ	0.046 UJ	0.046 UJ
MW-04	MW-04-04	REG	4/12/11	0.046 U	0.046 U	0.046 U	0.046 U	0.046 U	0.046 U	0.046 U	0.046 U	0.046 U	0.046 U	0.046 U	0.046 U	0.046 U	0.046 U	0.046 U	0.046 U	0.046 U	0.139 J
MW-05	MW-05-05	REG	4/12/11	0.046 U	0.046 U	0.046 U	0.046 U	0.046 U	0.046 U	0.046 U	0.046 U	0.046 U	0.046 U	0.046 U	0.046 U	0.046 U	0.046 U	0.046 U	0.046 U	0.046 U	0.046 U
MW-05	MW-05-059	DUP	4/12/11	0.046 U	0.047 U	0.046 U	0.046 U	0.046 U	0.047 U	0.047 U	0.047 U	0.047 U	0.047 U	0.047 U	0.047 U	0.047 U	0.047 U	0.047 U	0.047 U	0.047 U	0.047 U
MW-06	MW-06	REG	4/12/11	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U
Georgia Instream Water Quality Standard				*NRC*	*NRC*	*110,000*	*NRC*	*NRC*	*NRC*	*NRC*	*NRC*	*NRC*	*NRC*	*370*	*14,000*	*NRC*	*NRC*	*NRC*	*NRC*	*NRC*	*11,000*
Minimum Quantitation & Reporting Limit (mg/L)				**10.00**	**10.00**	**10.00**	**10.00**	**10.00**	**10.00**	**10.00**	**10.00**	**10.00**	**10.00**	**10.00**	**10.00**	**10.00**	**10.00**	**10.00**	**10.00**	**10.00**	**10.00**

U Indicates the compound was not detected at the method detection limit reported.
J Indicates the value for the compound is an estimated value.
mg/kg = milligrams per kilogram
NRC - No Regulatory Criteria

Table 8 Groundwater Elevations for Enhanced Fluid Recovery Events

Well Number	Date Measured	Top of Casing (ft AMSL)	Depth to Free Product (ft TOC)	Water Depth (ft TOC)	Product Thickness (ft)	Corrected Groundwater Elev. (ft)
Event 1 – June 12, 2011 – Pre-EFR						
MW-01	06/12/2011	76.29	NP	7.64	---	68.65
MW-02	06/12/2011	79.38	NP	8.01	---	71.37
MW-03	06/12/2011	79.94	NP	7.66	---	72.28
MW-04	06/12/2011	76.78	4.51	4.93	0.42	72.19*
MW-05	06/12/2011	78.92	NP	8.60	---	70.32
MW-06	06/12/2011	78.92	NP	8.49	---	70.43
RW-01	06/12/2011	79.25	8.54	8.79	0.25	70.67*
RW-02	06/12/2011	79.22	NP	8.03	---	71.19
RW-04	06/12/2011	78.98	7.60	12.10	4.5	70.57*
RW-05	06/12/2011	79.19	7.81	11.60	3.79	70.70*
RW-06	06/12/2011	77.59	5.79	6.81	1.02	71.62*
Event 1 – June 12, 2011– Post-EFR						
MW-01	06/12/2011	76.29	NP	5.25	---	71.04
MW-02	06/12/2011	79.38	NP	8.19	---	71.19
MW-03	06/12/2011	79.94	NP	7.74	---	72.20
MW-04	06/12/2011	76.78	NP	7.89	---	68.89
MW-05	06/12/2011	78.92	NP	8.73	---	70.19
MW-06	06/12/2011	78.92	NP	8.84	---	70.08
RW-01	06/12/2011	79.25	NP	10.09	---	69.16
RW-02	06/12/2011	79.22	NP	9.62	---	69.60
RW-04	06/12/2011	78.98	NP	9.89	---	69.09
RW-05	06/12/2011	79.19	NP	10.36	---	68.83
RW-06	06/12/2011	77.59	NP	8.09	---	69.50

NOTE:
Corrected Groundwater Elevation = Top of casing elevation - Depth to water + (Specific gravity x Product Thickness)
Gasoline's specific gravity of 0.82 was used.
*Corrected groundwater elevation because of free product
AMSL = above mean seal level
ft = feet
TOC = top of casing
NP = not present

Table 8 Groundwater Elevations for Enhanced Fluid Recovery Events (continued)

Well Number	Date Measured	Top of Casing (ft AMSL)	Depth to Free Product (ft TOC)	Water Depth (ft TOC)	Product Thickness (ft)	Corrected Groundwater Elev. (ft)
Event 2 – July 17, 2011 – Pre-EFR						
MW-01	07/17/2011	76.29	NP	7.31	---	68.98
MW-02	07/17/2011	79.38	NP	7.79	---	71.59
MW-03	07/17/2011	79.94	NP	7.49	---	72.45
MW-04	07/17/2011	76.78	4.42	4.88	0.46	72.28*
MW-05	07/17/2011	78.92	NP	8.05	---	70.87
MW-06	07/17/2011	78.92	NP	8.31	---	70.61
RW-01	07/17/2011	79.25	8.41	8.46	0.05	70.83*
RW-02	07/17/2011	79.22	NP	8.67	---	70.55
RW-04	07/17/2011	78.98	7.79	10.05	2.26	70.78*
RW-05	07/17/2011	79.19	7.86	10.45	2.59	70.86*
RW-06	07/17/2011	77.59	5.80	6.27	0.47	71.71*
Event 2 – July 17, 2011– Post-EFR						
MW-01	07/17/2011	76.29	NP	7.41	---	68.88
MW-02	07/17/2011	79.38	NP	8.03	---	71.35
MW-03	07/17/2011	79.94	NP	7.59	---	72.35
MW-04	07/17/2011	76.78	NP	6.61	---	70.17
MW-05	07/17/2011	78.92	NP	8.65	---	70.27
MW-06	07/17/2011	78.92	NP	8.77	---	70.15
RW-01	07/17/2011	79.25	NP	11.51	---	67.74
RW-02	07/17/2011	79.22	NP	9.29	---	69.93
RW-04	07/17/2011	78.98	NP	11.63	---	67.35
RW-05	07/17/2011	79.19	NP	10.56	---	68.63
RW-06	07/17/2011	77.59	NP	8.26	---	69.33

NOTE:
Corrected Groundwater Elevation = Top of casing elevation - Depth to water + (Specific gravity x Product Thickness)
Gasoline's specific gravity of 0.82 was used.
*Corrected groundwater elevation because of free product
AMSL = above mean sea level
ft = feet
TOC = top of casing
NP = not present

Table 8 Groundwater Elevations for Enhanced Fluid Recovery Events (continued)

Well Number	Date Measured	Top of Casing (ft AMSL)	Depth to Free Product (ft TOC)	Water Depth (ft TOC)	Product Thickness (ft)	Corrected Groundwater Elev. (ft)
Event 3 – August 3, 2011 – Pre-EFR						
MW-01	08/06/2011	76.29	NP	7.26	---	69.03
MW-02	08/06/2011	79.38	NP	7.62	---	71.76
MW-03	08/06/2011	79.94	NP	8.86	---	71.08
MW-04	08/06/2011	76.78	4.59	4.94	0.35	72.13*
MW-05	08/06/2011	78.92	NP	8.06	---	70.86
MW-06	08/06/2011	78.92	NP	8.35	---	70.57
RW-01	08/06/2011	79.25	NP	8.05	---	71.20
RW-02	08/06/2011	79.22	NP	8.70	---	70.52
RW-04	08/06/2011	78.98	7.99	9.39	1.40	70.74*
RW-05	08/06/2011	79.19	8.04	9.09	1.05	70.96*
RW-06	08/06/2011	77.59	5.96	6.43	0.47	71.55*
Event 3 – August 3, 2011– Post-EFR						
MW-01	08/06/2011	76.29	NP	7.54	---	68.75
MW-02	08/06/2011	79.38	NP	7.76	---	71.62
MW-03	08/06/2011	79.94	NP	8.88	---	71.06
MW-04	08/06/2011	76.78	NP	7.47	---	69.31
MW-05	08/06/2011	78.92	NP	8.98	---	69.94
MW-06	08/06/2011	78.92	NP	8.87	---	70.05
RW-01	08/06/2011	79.25	NP	9.64	---	69.61
RW-02	08/06/2011	79.22	NP	9.39	---	69.83
RW-04	08/06/2011	78.98	NP	11.56	---	67.42
RW-05	08/06/2011	79.19	NP	10.98	---	68.21
RW-06	08/06/2011	77.59	NP	8.99	---	68.60

NOTE:
Corrected Groundwater Elevation = Top of casing elevation - Depth to water + (Specific gravity x Product Thickness)
Gasoline's specific gravity of 0.82 was used.
*Corrected groundwater elevation because of free product
AMSL = above mean sea level
TOC = top of casing
ft = feet
NP = not present

Table 9 Free Product Removal Extraction Data

Extraction Date	Extraction Sites	Hours Extracted	Product Vapor Extracted (pounds)	Free Product Extracted (gal)	Total Product Removed (equiv. gal)	Total Liquid Removed (equiv. gal)
06/12/2011	MW-04, RW-01, RW-04, RW-05, RW-06	7	96	0	14	2,573
10/29/2009	MW-04, RW-01, RW-04, RW-05, RW-06	7	199	0	28	2,600
02/04/2010	MW-04, RW-04, RW-05, RW-06	8	316	0	48	2,494
Total		**22**	**611**	**0**	**90**	**7,667**

equiv. = equivalent gal = gallon

Appendix A

Soil Boring Logs

BORING LOG

Boring/ Well No:	SB-01	Installation:	Fort Stewart	Site:	Building 419
Project No.:	E00209.0007		Client/ Project:	US Army Corps of Engineers	
Contractor:	SpecPro Environmental Services LLC		Drilling Contractor:	Major Drilling	
Driller:	James Chambers		Borehole Diameter:	4 Inches	
Start - Date:	3/29/2011 Time: 9:30 AM		End Date:	3/29/2011 Time:	10:00 AM
Drilling Method / Rig Type:	Direct Push/Geoprobe		Coordinates:		
Logged By:	Doug Hawn	E-Log (Y / N) FROM To	Protection Level:	Level D	

Depth (ft)	Sample	Sample No.	Off-site Lab (Y/N)	On-site lab (Y/N)	OVA Reading (ppm)	Headspace (ppm)	Recovery (ft/ft)	Litologic Description	USCS	Blows/6 inch	Stratigraphic Log	Well Construction Data	Water Depth & Remarks	GS Elev. (ft)
0'	Y	SB-01-01	Y	N	0.0	N/A	4/4	GRASS. FROM 0-6" BGS - DARK ORGANIC MATTER. FROM 6"-18" BGS 80% SAND AND 20% SILT. FINE TO MEDIUM SANDS AND COARSE SILTS, COLOR 5YR3/2. FROM 18"-20" BGS - DARK GRITTY SAND, MOIST. FROM 20"-42" BGS - LIGHT TAN/GREY SAND, FIND GRAINED WITH SOME CLAY. MOTTLING, VERY PLASTIC.	O SM CH	N/A		Y		
4'	N			N	0.0	N/A	4/4	HEAVY MOTTLING. 80% SAND AND 20% SILT FROM 5'-6' BGS, WITH MEDIUM TO COARSE SANDS. FROM 6'-8' BGS 80% CLAY, 10% SAND, AND 10% SILT, WITH MEDIUM PLASTICITY. MEDIUM STIFFNESS. FROM 5'-6' BGS COLOR 5YR6/4 AND FROM 6'-8' BGS COLOR GLEY 1 7/10Y.	SM CL	N/A		Y		
8'	Y	SB-01-02	Y		0.0	N/A	4/4	80% SAND, 10% SILT, AND 10% CLAY. GROUNDWATER ENCOUNTERED AT 8.5' BGS. SAND IS FINE TO MEDIUM COARSE. VERY WET. FROM 10'-12' BGS COLOR GLEY 1 7/10Y.		N/A		Y	WATER ENCOUNTERED AT 8.5' BGS	
12'														
16'														
	A	B	C	D	E	F	G	H I	J	K	L	M	N	O

U = Thin Wall Tube
S = Split Spoon (tube)
C = Cuttings
R = Rock Coring
O = Other
OVA Instrument (Make/Model) MiniRae 2000 PID
On-Site G/C (Make/Model)
GC Operator:
Notes:

BORING LOG

Boring/ Well No:	SB-02	Installation:	Fort Stewart	Site:	Building 419
Project No.:	E00209.0007			Client/ Project:	US Army Corps of Engineers
Contractor:	SpecPro Environmental Services LLC			Drilling Contractor:	Major Drilling
Driller:	James Chambers			Borehole Diameter:	4 Inches
Start - Date:	3/29/2011	Time:	10:30 AM	End Date:	3/29/2011 Time: 10:45 AM
Drilling Method / Rig Type:	Direct Push/Geoprobe			Coordinates:	
Logged By:	Doug Hawn	E-Log (Y / N) FROM	To	Protection Level:	Level D

Depth (ft)	Sample	Sample No.	Off-site Lab (Y/N)	On-site lab (Y/N)	OVA Reading (ppm)	Headspace (ppm)	Recovery (ft/ft)	Litologic Description	USCS	Blows/6 inch	Stratigraphic Log	Well Construction Data	Water Depth & Remarks	GS Elev. (ft)
0'	Y	SB-02-01	Y	N	0.0	N/A	4/4	GRASS. FROM 0-6" BGS - DARK ORGANIC MATTER. FROM 6"-18" BGS 80% SAND AND 20% SILT. FINE TO MEDIUM SANDS AND COARSE SILTS, COLOR 5YR3/2. FROM 18"-20" BGS - DARK GRITTY SAND, MOIST. FROM 20"-42" BGS - LIGHT TAN/GREY SAND, FIND GRAINED WITH SOME CLAY. MOTTLING, VERY PLASTIC.	O SM CH	N/A		Y		
4'	N			N	0.0	N/A	4/4	HEAVY MOTTLING. 80% SAND AND 20% SILT FROM 5'-6' BGS, WITH MEDIUM TO COARSE SANDS. FROM 6'-8' BGS 80% CLAY, 10% SAND, AND 10% SILT, WITH MEDIUM PLASTICITY. MEDIUM STIFFNESS. FROM 5'-6' BGS COLOR 5YR6/4 AND FROM 6'-8' BGS COLOR GLEY 1 7/10Y.	SM CL	N/A		Y		
8'	Y	SB-02-02	Y		0.0	N/A	4/4	80% SAND, 10% SILT, AND 10% CLAY. GROUNDWATER ENCOUNTERED AT 9' BGS. SAND IS FINE TO MEDIUM COARSE. VERY WET. FROM 10'-12' BGS COLOR GLEY 1 7/10Y.		N/A		Y	WATER ENCOUNTERED AT 9' BGS	
12'														
16'														
	A	B	C	D	E	F	G	H I	J	K	L	M	N	O

U = Thin Wall Tube
S = Split Spoon (tube)
C = Cuttings
R = Rock Coring
O = Other
OVA Instrument (Make/Model) MiniRae 2000 PID
On-Site G/C (Make/Model)
GC Operator:
Notes:

BORING LOG

Boring/ Well No:	SB-03/MW-01	Installation:	Fort Stewart	Site:	Building 419
Project No.:	E00209.0007		Client/ Project:	US Army Corps of Engineers	
Contractor:	SpecPro Environmental Services LLC		Drilling Contractor:	Major Drilling	
Driller:	James Chambers		Borehole Diameter:	4 Inches	
Start - Date:	3/29/2011	Time: 11:10 AM	End Date:	3/29/2011	Time: 11:45 AM
Drilling Method / Rig Type:	Direct Push/Geoprobe		Coordinates:		
Logged By:	Doug Hawn	E-Log (Y / N) FROM To	Protection Level:	Level D	

Depth (ft)	Sample	Sample No.	Off-site Lab (Y/N)	On-site lab (Y/N)	OVA Reading (ppm)	Headspace (ppm)	Recovery (ft/ft)	Litologic Description	USCS	Blows/6 inch	Stratigraphic Log	Well Construction Data	Water Depth & Remarks	GS Elev. (ft)
0'	Y	SB-03-01	Y	N	0.0	N/A	4/4	GRASS. FROM 0-6" BGS - DARK ORGANIC MATTER. FROM 6"-18" BGS 80% SAND AND 20% SILT. FINE TO MEDIUM SANDS AND COARSE SILTS, COLOR 5YR3/2. FROM 18"-20" BGS - DARK GRITTY SAND, MOIST. FROM 20"-42" BGS - LIGHT TAN/GREY SAND, FIND GRAINED WITH SOME CLAY. MOTTLING, VERY PLASTIC.	O SM CH	N/A		Y		
4'	N	SB-03-02		N	0.0	N/A	4/4	HEAVY MOTTLING. 80% SAND AND 20% SILT FROM 5'-6' BGS, WITH MEDIUM TO COARSE SANDS. GROUNDWATER ENCOUNTERED AT 7' BGS. FROM 6'-8' BGS 80% CLAY, 10% SAND, AND 10% SILT, WITH MEDIUM PLASTICITY. MEDIUM STIFFNESS. FROM 5'-6' BGS COLOR 5YR6/4 AND FROM 6'-8' BGS COLOR GLEY 1 7/10Y.	SM CL	N/A		Y	WATER ENCOUNTERED AT 7' BGS	
8'	Y		Y		0.0	N/A	4/4	80% SAND, 10% SILT, AND 10% CLAY. SAND IS FINE TO MEDIUM COARSE. FROM 10'-12' BGS COLOR GLEY 1 7/10Y.		N/A		Y		
12'	N				0.0	N/A	4/4	80% SAND, 10% SILT, AND 10% CLAY. SAND IS MEDIUM TO COARSE. VERY WET. FROM 12'-15' BGS COLOR GLEY 1 7/10Y.		N/A		Y		
16'														
A	B	C	D	E	F	G	H I		J	K	L	M	N	O

U = Thin Wall Tube
S = Split Spoon (tube)
C = Cuttings
R = Rock Coring
O = Other
OVA Instrument (Make/Model)
On-Site G/C (Make/Model)
GC Operator:
MiniRae 2000 PID
Notes:

BORING LOG

Boring/ Well No: SB-04	Installation: Fort Stewart	Site: Building 419	
Project No.: E00209.0007	Client/ Project: US Army Corps of Engineers		
Contractor: SpecPro Environmental Services LLC	Drilling Contractor: Major Drilling		
Driller: James Chambers	Borehole Diameter: 4 Inches		
Start - Date: 3/29/2011 Time: 10:55 AM	End Date: 3/29/2011 Time: 11:05 AM		
Drilling Method / Rig Type: Direct Push/Geoprobe	Coordinates:		
Logged By: Doug Hawn	E-Log (Y / N) FROM To	Protection Level: Level D	

Depth (ft)	Sample	Sample No.	Off-site Lab (Y/N)	On-site lab (Y/N)	OVA Reading (ppm)	Headspace (ppm)	Recovery (ft/ft)	Lithologic Description	USCS	Blows/6 inch	Stratigraphic Log	Well Construction Data	Water Depth & Remarks	GS Elev. (ft)
0'	Y	SB-04-01	Y	N	0.0	N/A	4/4	GRASS. FROM 0-6" BGS - DARK ORGANIC MATTER. FROM 6"-18" BGS 80% SAND AND 20% SILT. FINE TO MEDIUM SANDS AND COARSE SILTS, COLOR 5YR3/2. FROM 18"-20" BGS - DARK GRITTY SAND, MOIST. FROM 20"-42" BGS - LIGHT TAN/GREY SAND, FIND GRAINED WITH SOME CLAY. MOTTLING, VERY PLASTIC.	O SM CH	N/A		Y		
4'	N	SB-04-02		N	0.0	N/A	4/4	HEAVY MOTTLING. 80% SAND AND 20% SILT FROM 5'-6' BGS, WITH MEDIUM TO COARSE SANDS. GROUNDWATER ENCOUNTERED AT 7' BGS. FROM 6'-8' BGS 80% CLAY, 10% SAND, AND 10% SILT, WITH MEDIUM PLASTICITY. MEDIUM STIFFNESS. FROM 5'-6' BGS COLOR 5YR6/4 AND FROM 6'-8' BGS COLOR GLEY 1 7/10Y.	SM CL	N/A		Y	WATER ENCOUNTERED AT 7' BGS	
8'														
12'														
16'														
	A	B	C	D	E	F	G	H I	J	K	L	M	N	O

U = Thin Wall Tube
S = Split Spoon (tube)
C = Cuttings
R = Rock Coring
O = Other
OVA Instrument (Make/Model)
On-Site G/C (Make/Model)
GC Operator:
MiniRae 2000 PID
Notes:

BORING LOG

Boring/ Well No:	SB-05	Installation:	Fort Stewart	Site:	Building 419
Project No.:	E00209.0007			Client/ Project:	US Army Corps of Engineers
Contractor:	SpecPro Environmental Services LLC			Drilling Contractor:	Major Drilling
Driller:	James Chambers			Borehole Diameter:	4 Inches
Start - Date:	3/29/2011	Time:	1:00 PM	End Date:	3/29/2011 Time: 1:25 PM
Drilling Method / Rig Type:	Direct Push/Geoprobe			Coordinates:	
Logged By:	Doug Hawn	E-Log (Y / N) FROM	To	Protection Level:	Level D

Depth (ft)	Sample	Sample No.	Off-site Lab (Y/N)	On-site lab (Y/N)	OVA Reading (ppm)	Headspace (ppm)	Recovery (ft/ft)	Litologic Description	USCS	Blows/6 inch	Stratigraphic Log	Well Construction Data	Water Depth & Remarks	GS Elev. (ft)
0'	Y	SB-05-01	Y	N	0.0	N/A	4/4	ASHPHALT AND FILL MATERIAL FROM 0-6" BGS. FROM 6"-18" BGS 80% SAND AND 20% SILT. FINE TO MEDIUM SANDS AND COARSE SILTS, COLOR 5YR3/2. FROM 18"-20" BGS - DARK GRITTY SAND, MOIST. FROM 20"-42" BGS - LIGHT TAN/GREY SAND, FIND GRAINED WITH SOME CLAY. MOTTLING, VERY PLASTIC.	O SM CH	N/A		Y		
4'	N	SB-05-02		N	0.0	N/A	4/4	HEAVY MOTTLING. 80% SAND AND 20% SILT FROM 5'-6' BGS, WITH MEDIUM TO COARSE SANDS. GROUNDWATER ENCOUNTERED AT 6.5' BGS. FROM 6'-8' BGS 80% CLAY, 10% SAND, AND 10% SILT, WITH MEDIUM PLASTICITY. MEDIUM STIFFNESS. FROM 5'-6' BGS COLOR 5YR6/4 AND FROM 6'-8' BGS COLOR GLEY 1 7/10Y.	SM CL	N/A		Y	WATER ENCOUNTERED AT 6.5' BGS	
8'														
12'														
16'														
	A	B	C	D	E	F	G	H I	J	K	L	M	N	O

U = Thin Wall Tube
S = Split Spoon (tube)
C = Cuttings
R = Rock Coring
O = Other
OVA Instrument (Make/Model)
On-Site G/C (Make/Model)
GC Operator:
MiniRae 2000 PID
Notes:

BORING LOG

Boring/ Well No:	SB-06/MW-05	Installation:	Fort Stewart	Site:	Building 419
Project No.:	E00209.0007		Client/ Project:	US Army Corps of Engineers	
Contractor:	SpecPro Environmental Services LLC		Drilling Contractor:	Major Drilling	
Driller:	James Chambers		Borehole Diameter:	4 Inches	
Start - Date:	3/29/2011	Time: 1:30 PM	End Date:	3/29/2011	Time: 1:45 PM
Drilling Method / Rig Type:	Direct Push/Geoprobe		Coordinates:		
Logged By:	Doug Hawn	E-Log (Y / N) FROM To	Protection Level:	Level D	

Depth (ft)	Sample	Sample No.	Off-site Lab (Y/N)	On-site lab (Y/N)	OVA Reading (ppm)	Headspace (ppm)	Recovery (ft/ft)	Litologic Description	USCS	Blows/6 inch	Stratigraphic Log	Well Construction Data	Water Depth & Remarks	GS Elev. (ft)
0'	Y	SB-06-01	Y	N	0.0	N/A	4/4	ASHPALT - FROM 0-6" BGS. FROM 6"-18" BGS 80% SAND AND 20% SILT. FINE TO MEDIUM SANDS AND COARSE SILTS, COLOR 5YR3/2. FROM 18"-20" BGS - DARK GRITTY SAND, MOIST. FROM 20"-42" BGS - LIGHT TAN/GREY SAND, FIND GRAINED WITH SOME CLAY. MOTTLING, VERY PLASTIC.	O SM CH	N/A		Y		
4'	N	SB-06-02		N	0.0	N/A	4/4	HEAVY MOTTLING. 80% SAND AND 20% SILT FROM 5'-6' BGS, WITH MEDIUM TO COARSE SANDS. GROUNDWATER ENCOUNTERED AT 7' BGS. FROM 6'-8' BGS 80% CLAY, 10% SAND, AND 10% SILT, WITH MEDIUM PLASTICITY. MEDIUM STIFFNESS. FROM 5'-6' BGS COLOR 5YR6/4 AND FROM 6'-8' BGS COLOR GLEY 1 7/10Y.	SM CL	N/A		Y	WATER ENCOUNTERED AT 7' BGS	
8'	Y		Y		0.0	N/A	4/4	80% SAND, 10% SILT, AND 10% CLAY. SAND IS FINE TO MEDIUM COARSE. VERY WET. FROM 10'-12' BGS COLOR GLEY 1 7/10Y.		N/A		Y		
12'	N				0.0	N/A	4/4	80% SAND, 10% SILT, AND 10% CLAY. SAND IS MEDIUM TO COARSE. VERY WET. FROM 12'-15' BGS COLOR GLEY 1 7/10Y.		N/A		Y		
16'														
	A	B	C	D	E	F	G	H I	J	K	L	M	N	O

U = Thin Wall Tube
S = Split Spoon (tube)
C = Cuttings
R = Rock Coring
O = Other
OVA Instrument (Make/Model)
On-Site G/C (Make/Model)
GC Operator:
MiniRae 2000 PID
Notes:

BORING LOG

Boring/ Well No:	SB-07	Installation:	Fort Stewart	Site:	Building 419
Project No.:	E00209.0007		Client/ Project:	US Army Corps of Engineers	
Contractor:	SpecPro Environmental Services LLC		Drilling Contractor:	Major Drilling	
Driller:	James Chambers		Borehole Diameter:	4 Inches	
Start - Date:	3/29/2011 Time: 2:00 PM		End Date:	3/29/2011 Time:	2:15 PM
Drilling Method / Rig Type:	Direct Push/Geoprobe		Coordinates:		
Logged By:	Doug Hawn	E-Log (Y / N) FROM To	Protection Level:	Level D	

Depth (ft)	Sample	Sample No.	Off-site Lab (Y/N)	On-site lab (Y/N)	OVA Reading (ppm)	Headspace (ppm)	Recovery (ft/ft)	Litologic Description	USCS	Blows/6 inch	Stratigraphic Log	Well Construction Data	Water Depth & Remarks	GS Elev. (ft)
0'	Y	SB-07-01	Y	N	0.0	N/A	4/4	ASHPALT - FROM 0-6" BGS. FROM 6"-18" BGS 80% SAND AND 20% SILT. FINE TO MEDIUM SANDS AND COARSE SILTS, COLOR 5YR3/2. FROM 18"-20" BGS - DARK GRITTY SAND, MOIST. FROM 20"-42" BGS - LIGHT TAN/GREY SAND, FIND GRAINED WITH SOME CLAY. MOTTLING, VERY PLASTIC.	O SM CH	N/A		Y		
4'	N	SB-07-02		N	0.0	N/A	4/4	HEAVY MOTTLING. 80% SAND AND 20% SILT FROM 5'-6' BGS, WITH MEDIUM TO COARSE SANDS. GROUNDWATER ENCOUNTERED AT 7' BGS. FROM 6'-8' BGS 80% CLAY, 10% SAND, AND 10% SILT, WITH MEDIUM PLASTICITY. MEDIUM STIFFNESS. FROM 5'-6' BGS COLOR 5YR6/4 AND FROM 6'-8' BGS COLOR GLEY 1 7/10Y.	SM CL	N/A		Y	WATER ENCOUNTERED AT 7' BGS	
8'														
12'														
16'														
	A	B	C	D	E	F	G	H I	J	K	L	M	N	O

U = Thin Wall Tube
S = Split Spoon (tube)
C = Cuttings
R = Rock Coring
O = Other
OVA Instrument (Make/Model)
On-Site G/C (Make/Model)
GC Operator:
MiniRae 2000 PID
Notes:

BORING LOG

Boring/ Well No: SB-08	Installation:	Fort Stewart	Site: Building 419
Project No.: E00209.0007		Client/ Project:	US Army Corps of Engineers
Contractor: SpecPro Environmental Services LLC		Drilling Contractor:	Major Drilling
Driller: James Chambers		Borehole Diameter:	4 Inches
Start - Date: 3/29/2011	Time: 2:25 PM	End Date: 3/29/2011	Time: 2:50 PM
Drilling Method / Rig Type: Direct Push/Geoprobe		Coordinates:	
Logged By: Doug Hawn	E-Log (Y / N) FROM To	Protection Level:	Level D

Depth (ft)	Sample	Sample No.	Off-site Lab (Y/N)	On-site lab (Y/N)	OVA Reading (ppm)	Headspace (ppm)	Recovery (ft/ft)	Litologic Description	USCS	Blows/6 inch	Stratigraphic Log	Well Construction Data	Water Depth & Remarks	GS Elev. (ft)
0'	Y	SB-08-01	Y	N	0.0	N/A	4/4	ASHPALT - FROM 0-6" BGS. FROM 6"-18" BGS 80% SAND AND 20% SILT. FINE TO MEDIUM SANDS AND COARSE SILTS, COLOR 5YR3/2. FROM 18"-20" BGS - DARK GRITTY SAND, MOIST. FROM 20"-42" BGS - LIGHT TAN/GREY SAND, FIND GRAINED WITH SOME CLAY. MOTTLING, VERY PLASTIC.	O SM CH	N/A		Y		
4'	N	SB-08-02		N	0.0	N/A	4/4	HEAVY MOTTLING. 80% SAND AND 20% SILT FROM 5'-6' BGS, WITH MEDIUM TO COARSE SANDS. GROUNDWATER ENCOUNTERED AT 7' BGS. FROM 6'-8' BGS 80% CLAY, 10% SAND, AND 10% SILT, WITH MEDIUM PLASTICITY. MEDIUM STIFFNESS. FROM 5'-6' BGS COLOR 5YR6/4 AND FROM 6'-8' BGS COLOR GLEY 1 7/10Y.	SM CL	N/A		Y	WATER ENCOUNTERED AT 7' BGS	
8'														
12'														
16'														
	A	B	C	D	E	F	G	H I	J	K	L	M	N	O

U = Thin Wall Tube
S = Split Spoon (tube)
C = Cuttings
R = Rock Coring
O = Other
OVA Instrument (Make/Model)
On-Site G/C (Make/Model)
GC Operator:
MiniRae 2000 PID
Notes:

BORING LOG

Boring/ Well No:	SB-09	Installation:	Fort Stewart	Site:	Building 419
Project No.:	E00209.0007			Client/ Project:	US Army Corps of Engineers
Contractor:	SpecPro Environmental Services LLC			Drilling Contractor:	Major Drilling
Driller:	James Chambers			Borehole Diameter:	4 Inches
Start - Date:	3/29/2011	Time:	2:50 PM	End Date:	3/29/2011 Time: 3:15 PM
Drilling Method / Rig Type:	Direct Push/Geoprobe			Coordinates:	
Logged By:	Doug Hawn	E-Log (Y / N) FROM	To	Protection Level:	Level D

Depth (ft)	Sample	Sample No.	Off-site Lab (Y/N)	On-site lab (Y/N)	OVA Reading (ppm)	Headspace (ppm)	Recovery (ft/ft)	Litologic Description	USCS	Blows/6 inch	Stratigraphic Log	Well Construction Data	Water Depth & Remarks	GS Elev. (ft)
0'	Y		Y	N	0.0	N/A	4/4	GRASS - FROM 0-6" BGS - DARK ORGANIC MATTER. FROM 6"-18" BGS 80% SAND AND 20% SILT. FINE TO MEDIUM SANDS AND COARSE SILTS, COLOR 5YR3/2. FROM 18"-20" BGS - DARK GRITTY SAND, MOIST. FROM 20"-42" BGS - LIGHT TAN/GREY SAND, FIND GRAINED WITH SOME CLAY. MOTTLING, VERY PLASTIC.	O SM CH	N/A		Y		
4'	N	SB-09-01		N	0.0	N/A	4/4	HEAVY MOTTLING. 80% SAND AND 20% SILT FROM 5'-6' BGS, WITH MEDIUM TO COARSE SANDS. FROM 6'-8' BGS 80% CLAY, 10% SAND, AND 10% SILT, WITH MEDIUM PLASTICITY. MEDIUM STIFFNESS. FROM 5'-6' BGS COLOR 5YR6/4 AND FROM 6'-8' BGS COLOR GLEY 1 7/10Y.	SM CL	N/A		Y		
8'	Y	SB-09-02	Y		0.0	N/A	4/4	80% SAND, 10% SILT, AND 10% CLAY. SAND IS FINE TO MEDIUM COARSE. VERY WET. GROUNDWATER ENCOUNTERED AT 11' BGS. FROM 10'-12' BGS COLOR GLEY 1 7/10Y.		N/A		Y	WATER ENCOUNTERED AT 11' BGS	
12'														
16'														
	A	B	C	D	E	F	G	H I	J	K	L	M	N	O

U = Thin Wall Tube
S = Split Spoon (tube)
C = Cuttings
R = Rock Coring
O = Other
OVA Instrument (Make/Model) MiniRae 2000 PID
On-Site G/C (Make/Model)
GC Operator:
Notes:

BORING LOG

Boring/ Well No: SB-10	Installation:	Fort Stewart	Site: Building 419
Project No.: E00209.0007		Client/ Project:	US Army Corps of Engineers
Contractor: SpecPro Environmental Services LLC		Drilling Contractor:	Major Drilling
Driller: James Chambers		Borehole Diameter:	4 Inches
Start - Date: 3/29/2011	Time: 3:10 PM	End Date: 3/29/2011	Time: 3:55 PM
Drilling Method / Rig Type: Direct Push/Geoprobe		Coordinates:	
Logged By: Doug Hawn	E-Log (Y / N) FROM To	Protection Level:	Level D

Depth (ft)	Sample	Sample No.	Off-site Lab (Y/N)	On-site lab (Y/N)	OVA Reading (ppm)	Headspace (ppm)	Recovery (ft/ft)	Litologic Description	USCS	Blows/6 inch	Stratigraphic Log	Well Construction Data	Water Depth & Remarks	GS Elev. (ft)
0'	Y		Y	N	0.0	N/A	0/4	CONCRETE (LOADING DOCK AREA) FROM 0-18" BGS - FILL MATERIAL FROM 18"-20" BGS - DARK GRITTY SAND, MOIST. FROM 20"-42" BGS - LIGHT TAN/GREY SAND, FIND GRAINED WITH SOME CLAY. MOTTLING, VERY PLASTIC.	O SM CH	N/A		Y		
4'	N	SB-10-01		N	5.7	N/A	4/4	HEAVY MOTTLING. 80% SAND AND 20% SILT FROM 5'-6' BGS, WITH MEDIUM TO COARSE SANDS. GROUNDWATER ENCOUNTERED AT 5' BGS. SHEEN OBSERVED, WITH STRONG ODOR. FROM 6'-8' BGS 80% CLAY, 10% SAND, AND 10% SILT, WITH MEDIUM PLASTICITY. MEDIUM STIFFNESS. FROM 5'-6' BGS COLOR 5YR6/4 AND FROM 6'-8' BGS COLOR GLEY 1 7/10Y.	SM CL	N/A		Y	WATER ENCOUNTERED AT 5' BGS	
8'	Y	SB-10-02	Y		0.0	N/A	4/4	80% SAND, 10% SILT, AND 10% CLAY. SAND IS FINE TO MEDIUM COARSE. FROM 10'-12' BGS COLOR GLEY 1 7/10Y.		N/A		Y		
12'														
16'														
	A	B	C	D	E	F	G	H I	J	K	L	M	N	O

U = Thin Wall Tube
S = Split Spoon (tube)
C = Cuttings
R = Rock Coring
O = Other
OVA Instrument (Make/Model)
On-Site G/C (Make/Model)
GC Operator:
MiniRae 2000 PID
Notes:

BORING LOG

Boring/ Well No:	SB-11/MW-04	Installation:	Fort Stewart	Site:	Building 419
Project No.:	E00209.0007			Client/ Project:	US Army Corps of Engineers
Contractor:	SpecPro Environmental Services LLC			Drilling Contractor:	Major Drilling
Driller:	James Chambers			Borehole Diameter:	4 Inches
Start - Date:	3/29/2011	Time:	4:00 PM	End Date:	3/29/2011 Time: 4:20 PM
Drilling Method / Rig Type:	Direct Push/Geoprobe			Coordinates:	
Logged By:	Doug Hawn	E-Log (Y / N) FROM	To	Protection Level:	Level D

Depth (ft)	Sample	Sample No.	Off-site Lab (Y/N)	On-site lab (Y/N)	OVA Reading (ppm)	Headspace (ppm)	Recovery (ft/ft)	Litologic Description	USCS	Blows/6 inch	Stratigraphic Log	Well Construction Data	Water Depth & Remarks	GS Elev. (ft)
0'	Y		Y	N	0.0	N/A	2/4	CONCRETE (LOADING DOCK AREA) FROM 0-18" BGS - FILL MATERIAL FROM 18"-20" BGS - DARK GRITTY SAND, MOIST. FROM 20"-42" BGS - LIGHT TAN/GREY SAND, FIND GRAINED WITH SOME CLAY. MOTTLING, VERY PLASTIC.	O SM CH	N/A		Y		
4'	N	SB-11-01		N	10.5	N/A	4/4	HEAVY MOTTLING. 80% SAND AND 20% SILT FROM 5'-6' BGS, WITH MEDIUM TO COARSE SANDS. FROM 6'-8' BGS 80% CLAY, 10% SAND, AND 10% SILT, WITH MEDIUM PLASTICITY. MEDIUM STIFFNESS. FROM 5'-6' BGS COLOR 5YR6/4 AND FROM 6'-8' BGS COLOR GLEY 1 7/10Y.	SM CL	N/A		Y		
8'	Y	SB-11-02	Y		0.0	N/A	4/4	80% SAND, 10% SILT, AND 10% CLAY. GROUNDWATER ENCOUNTERED AT 9.5' BGS. SAND IS FINE TO MEDIUM COARSE. FROM 10'-12' BGS COLOR GLEY 1 7/10Y.		N/A		Y	WATER ENCOUNTERED AT 9.5' BGS	
12'	N				0.0	N/A	4/4	80% SAND, 10% SILT, AND 10% CLAY. SAND IS MEDIUM TO COARSE. VERY WET. FROM 12'-15' BGS COLOR GLEY 1 7/10Y.		N/A		Y		
16'														
	A	B	C	D	E	F	G	H I	J	K	L	M	N	O

U = Thin Wall Tube
S = Split Spoon (tube)
C = Cuttings
R = Rock Coring
O = Other
OVA Instrument (Make/Model)
On-Site G/C (Make/Model)
GC Operator:
MiniRae 2000 PID
Notes:

BORING LOG

Boring/ Well No:	SB-12	Installation:	Fort Stewart	Site:	Building 419
Project No.:	E00209.0007			Client/ Project:	US Army Corps of Engineers
Contractor:	SpecPro Environmental Services LLC			Drilling Contractor:	Major Drilling
Driller:	James Chambers			Borehole Diameter:	4 Inches
Start - Date:	3/29/2011	Time:	4:30 PM	End Date:	3/29/2011 Time: 4:55 PM
Drilling Method / Rig Type:	Direct Push/Geoprobe			Coordinates:	
Logged By:	Doug Hawn	E-Log (Y / N) FROM	To	Protection Level:	Level D

Depth (ft)	Sample	Sample No.	Off-site Lab (Y/N)	On-site lab (Y/N)	OVA Reading (ppm)	Headspace (ppm)	Recovery (ft/ft)	Litologic Description	USCS	Blows/6 inch	Stratigraphic Log	Well Construction Data	Water Depth & Remarks	GS Elev. (ft)
0'	Y		Y	N	0.0	N/A	2/4	CONCRETE (LOADING DOCK AREA) FROM 0-18" BGS - FILL MATERIAL FROM 18"-20" BGS - DARK GRITTY SAND, MOIST. FROM 20"-42" BGS - LIGHT TAN/GREY SAND, FIND GRAINED WITH SOME CLAY. MOTTLING, VERY PLASTIC.	O SM CH	N/A		Y		
4'	N	SB-12-01		N	10.5	N/A	4/4	HEAVY MOTTLING. 80% SAND AND 20% SILT FROM 5'-6' BGS, WITH MEDIUM TO COARSE SANDS. FROM 6'-8' BGS 80% CLAY, 10% SAND, AND 10% SILT, WITH MEDIUM PLASTICITY. MEDIUM STIFFNESS. FROM 5'-6' BGS COLOR 5YR6/4 AND FROM 6'-8' BGS COLOR GLEY 1 7/10Y.	SM CL	N/A		Y		
8'	Y	SB-12-02	Y		0.0	N/A	4/4	80% SAND, 10% SILT, AND 10% CLAY. GROUNDWATER AT 8' BGS. SHEEN OBSERVED, WITH STRONG ODOR. SAND IS FINE TO MEDIUM COARSE. FROM 10'-12' BGS COLOR GLEY 1 7/10Y.		N/A		Y	WATER ENCOUNTERED AT 8' BGS	
12'														
16'														
	A	B	C	D	E	F	G	H I	J	K	L	M	N	O

U = Thin Wall Tube
S = Split Spoon (tube)
C = Cuttings
R = Rock Coring
O = Other
OVA Instrument (Make/Model)
On-Site G/C (Make/Model)
GC Operator:
MiniRae 2000 PID
Notes:

BORING LOG

Boring/ Well No:	SB-13	Installation:	Fort Stewart	Site:	Building 419
Project No.:	E00209.0007			Client/ Project:	US Army Corps of Engineers
Contractor:	SpecPro Environmental Services LLC			Drilling Contractor:	Major Drilling
Driller:	James Chambers			Borehole Diameter:	4 Inches
Start - Date:	3/30/2011	Time:	8:45 AM	End Date:	3/30/2011 Time: 9:10 AM
Drilling Method / Rig Type:	Direct Push/Geoprobe			Coordinates:	
Logged By:	Doug Hawn	E-Log (Y / N) FROM	To	Protection Level:	Level D

Depth (ft)	Sample	Sample No.	Off-site Lab (Y/N)	On-site lab (Y/N)	OVA Reading (ppm)	Headspace (ppm)	Recovery (ft/ft)	Litologic Description	USCS	Blows/6 inch	Stratigraphic Log	Well Construction Data	Water Depth & Remarks	GS Elev. (ft)
0'	Y	SB-13-01	Y	N	0.0	N/A	4/4	CONCRETE (LOADING DOCK AREA) FROM 0-18" BGS - FILL MATERIAL FROM 18"-20" BGS - DARK GRITTY SAND, MOIST. FROM 20"-42" BGS - LIGHT TAN/GREY SAND, FIND GRAINED WITH SOME CLAY. MOTTLING, VERY PLASTIC.	O SM CH	N/A		Y		
4'	N			N	NA	N/A	4/4	HEAVY MOTTLING. 80% SAND AND 20% SILT FROM 5'-6' BGS, WITH MEDIUM TO COARSE SANDS. FROM 6'-8' BGS 80% CLAY, 10% SAND, AND 10% SILT, WITH MEDIUM PLASTICITY. MEDIUM STIFFNESS. FROM 5'-6' BGS COLOR 5YR6/4 AND FROM 6'-8' BGS COLOR GLEY 1 7/10Y.	SM CL	N/A		Y		
8'	Y	SB-13-02	Y		0.0	N/A	4/4	80% SAND, 10% SILT, AND 10% CLAY. GROUNDWATER AT 9' BGS. SAND IS FINE TO MEDIUM COARSE. FROM 10'-12' BGS COLOR GLEY 1 7/10Y.		N/A		Y	WATER ENCOUNTERED AT 9' BGS	
12'														
16'														
	A	B	C	D	E	F	G	H I	J	K	L	M	N	O

U = Thin Wall Tube
S = Split Spoon (tube)
C = Cuttings
R = Rock Coring
O = Other
OVA Instrument (Make/Model)
On-Site G/C (Make/Model)
GC Operator:
MiniRae 2000 PID
Notes:

BORING LOG

Boring/ Well No:	SB-14	Installation:	Fort Stewart	Site:	Building 419
Project No.:	E00209.0007			Client/ Project:	US Army Corps of Engineers
Contractor:	SpecPro Environmental Services LLC			Drilling Contractor:	Major Drilling
Driller:	James Chambers			Borehole Diameter:	4 Inches
Start - Date:	3/30/2011	Time:	9:30 AM	End Date:	3/30/2011 Time: 9:50 AM
Drilling Method / Rig Type:	Direct Push/Geoprobe			Coordinates:	
Logged By:	Doug Hawn	E-Log (Y / N) FROM	To	Protection Level:	Level D

Depth (ft)	Sample	Sample No.	Off-site Lab (Y/N)	On-site lab (Y/N)	OVA Reading (ppm)	Headspace (ppm)	Recovery (ft/ft)	Litologic Description	USCS	Blows/6 inch	Stratigraphic Log	Well Construction Data	Water Depth & Remarks	GS Elev. (ft)
0'	Y	SB-14-01	Y	N	0.0	N/A	4/4	CONCRETE (LOADING DOCK AREA) FROM 0-18" BGS - FILL MATERIAL FROM 18"-20" BGS - DARK GRITTY SAND, MOIST. FROM 20"-42" BGS - LIGHT TAN/GREY SAND, FIND GRAINED WITH SOME CLAY. MOTTLING, VERY PLASTIC.	O SM CH	N/A		Y		
4'	N	SB-14-02		N	NA	N/A	4/4	HEAVY MOTTLING. 80% SAND AND 20% SILT FROM 5'-6' BGS, WITH MEDIUM TO COARSE SANDS. GROUNDWATER AT 7.5' BGS. FROM 6'-8' BGS 80% CLAY, 10% SAND, AND 10% SILT, WITH MEDIUM PLASTICITY. MEDIUM STIFFNESS. FROM 5'-6' BGS COLOR 5YR6/4 AND FROM 6'-8' BGS COLOR GLEY 1 7/10Y.	SM CL	N/A		Y	WATER ENCOUNTERED AT 7.5' BGS	
8'														
12'														
16'														
	A	B	C	D	E	F	G	H I	J	K	L	M	N	O

U = Thin Wall Tube
S = Split Spoon (tube)
C = Cuttings
R = Rock Coring
O = Other
OVA Instrument (Make/Model)
On-Site G/C (Make/Model)
GC Operator:
MiniRae 2000 PID
Notes:

BORING LOG

Boring/ Well No:	SB-15/MW-02	Installation:	Fort Stewart	Site:	Building 419
Project No.:	E00209.0007		Client/ Project:	US Army Corps of Engineers	
Contractor:	SpecPro Environmental Services LLC		Drilling Contractor:	Major Drilling	
Driller:	James Chambers		Borehole Diameter:	4 Inches	
Start - Date:	3/30/2011 Time: 10:00 AM		End Date:	3/30/2011 Time:	10:15 AM
Drilling Method / Rig Type:	Direct Push/Geoprobe		Coordinates:		
Logged By:	Doug Hawn	E-Log (Y / N) FROM To	Protection Level:	Level D	

Depth (ft)	Sample	Sample No.	Off-site Lab (Y/N)	On-site lab (Y/N)	OVA Reading (ppm)	Headspace (ppm)	Recovery (ft/ft)	Litologic Description	USCS	Blows/6 inch	Stratigraphic Log	Well Construction Data	Water Depth & Remarks	GS Elev. (ft)
0'	Y		Y	N	0.0	N/A	4/4	ASHPALT-PARKING LOT FROM 0-18" BGS - FILL MATERIAL FROM 18"-20" BGS - DARK GRITTY SAND, MOIST. FROM 20"-42" BGS - LIGHT TAN/GREY SAND, FIND GRAINED WITH SOME CLAY. MOTTLING, VERY PLASTIC.	O SM CH	N/A		Y		
4'	N	SB-15-01		N	NA	N/A	4/4	HEAVY MOTTLING. 80% SAND AND 20% SILT FROM 5'-6' BGS, WITH MEDIUM TO COARSE SANDS. FROM 6'-8' BGS 80% CLAY, 10% SAND, AND 10% SILT, WITH MEDIUM PLASTICITY. MEDIUM STIFFNESS. FROM 5'-6' BGS COLOR 5YR6/4 AND FROM 6'-8' BGS COLOR GLEY 1 7/10Y.	SM CL	N/A		Y		
8'	Y	SB-15-02	Y		0.0	N/A	4/4	80% SAND, 10% SILT, AND 10% CLAY. GROUNDWATER AT 8' BGS. SLIGHT PETROLEUM ODOR. SAND IS FINE TO MEDIUM COARSE. FROM 10'-12' BGS COLOR GLEY 1 7/10Y.		N/A		Y	WATER ENCOUNTERED AT 8' BGS	
12'														
16'														
	A	B	C	D	E	F	G	H I	J	K	L	M	N	O

U = Thin Wall Tube
S = Split Spoon (tube)
C = Cuttings
R = Rock Coring
O = Other
OVA Instrument (Make/Model)
On-Site G/C (Make/Model)
GC Operator:
MiniRae 2000 PID
Notes:

BORING LOG

Boring/ Well No:	SB-16	Installation:	Fort Stewart	Site:	Building 419
Project No.:	E00209.0007		Client/ Project:	US Army Corps of Engineers	
Contractor:	SpecPro Environmental Services LLC		Drilling Contractor:	Major Drilling	
Driller:	James Chambers		Borehole Diameter:	4 Inches	
Start - Date:	3/30/2011 Time: 10:30 AM		End Date:	3/30/2011 Time:	10:45 AM
Drilling Method / Rig Type:	Direct Push/Geoprobe		Coordinates:		
Logged By:	Doug Hawn	E-Log (Y / N) FROM To	Protection Level:	Level D	

Depth (ft)	Sample	Sample No.	Off-site Lab (Y/N)	On-site lab (Y/N)	OVA Reading (ppm)	Headspace (ppm)	Recovery (ft/ft)	Litologic Description	USCS	Blows/6 inch	Stratigraphic Log	Well Construction Data	Water Depth & Remarks	GS Elev. (ft)
0'	Y		Y	N	NA	N/A	4/4	GRASS (NEAR FORMER TANK AREA). FROM 0-6" BGS - DARK ORGANIC MATTER. FROM 18"-20" BGS - DARK GRITTY SAND, MOIST. WOOD DEBRIS. FROM 20"-42" BGS - LIGHT TAN/GREY SAND, FIND GRAINED WITH SOME CLAY. MOTTLING, VERY PLASTIC.	O SM CH	N/A		Y		
4'	N	SB-16-01		N	30	N/A	4/4	HEAVY MOTTLING. 80% SAND AND 20% SILT FROM 5'-6' BGS, WITH MEDIUM TO COARSE SANDS. FROM 6'-8' BGS 80% CLAY, 10% SAND, AND 10% SILT, WITH MEDIUM PLASTICITY. MEDIUM STIFFNESS. FROM 5'-6' BGS COLOR 5YR6/4 AND FROM 6'-8' BGS COLOR GLEY 1 7/10Y.	SM CL	N/A		Y		
8'	Y	SB-16-02	Y		0.0	N/A	4/4	80% SAND, 10% SILT, AND 10% CLAY. WOOD DEBRIS. GROUNDWATER AT 8.5' BGS. SLIGHT PETROLEUM ODOR. SAND IS FINE TO MEDIUM COARSE. FROM 10'-12' BGS COLOR GLEY 1 7/10Y.		N/A		Y	WATER ENCOUNTERED AT 8.5' BGS	
12'														
16'														
	A	B	C	D	E	F	G	H I	J	K	L	M	N	O

U = Thin Wall Tube
S = Split Spoon (tube)
C = Cuttings
R = Rock Coring
O = Other
OVA Instrument (Make/Model)
On-Site G/C (Make/Model)
GC Operator:
MiniRae 2000 PID
Notes:

BORING LOG

Boring/ Well No: SB-17	Installation:	Fort Stewart	Site: Building 419
Project No.: E00209.0007		Client/ Project:	US Army Corps of Engineers
Contractor: SpecPro Environmental Services LLC		Drilling Contractor:	Major Drilling
Driller: James Chambers		Borehole Diameter:	4 Inches
Start - Date: 3/30/2011 Time: 10:55 AM		End Date: 3/30/2011	Time: 11:05 AM
Drilling Method / Rig Type: Direct Push/Geoprobe		Coordinates:	
Logged By: Doug Hawn	E-Log (Y / N) FROM To	Protection Level:	Level D

Depth (ft)	Sample	Sample No.	Off-site Lab (Y/N)	On-site lab (Y/N)	OVA Reading (ppm)	Headspace (ppm)	Recovery (ft/ft)	Litologic Description	USCS	Blows/6 inch	Stratigraphic Log	Well Construction Data	Water Depth & Remarks	GS Elev. (ft)
0'	Y		Y	N	NA	N/A	4/4	GRASS (NEAR FORMER TANK AREA). FROM 0-6" BGS - DARK ORGANIC MATTER. FROM 18"-20" BGS - DARK GRITTY SAND, MOIST. FROM 20"-42" BGS - LIGHT TAN/GREY SAND, FIND GRAINED WITH SOME CLAY. MOTTLING, VERY PLASTIC.	O SM CH	N/A		Y		
4'	N			N	NA	N/A	4/4	HEAVY MOTTLING. 80% SAND AND 20% SILT FROM 5'-6' BGS, WITH MEDIUM TO COARSE SANDS. FROM 6'-8' BGS 80% CLAY, 10% SAND, AND 10% SILT, WITH MEDIUM PLASTICITY. MEDIUM STIFFNESS. FROM 5'-6' BGS COLOR 5YR6/4 AND FROM 6'-8' BGS COLOR GLEY 1 7/10Y.	SM CL	N/A		Y		
8'	Y	SB-17-01	Y		15.5	N/A	4/4	80% SAND, 10% SILT, AND 10% CLAY. GROUNDWATER AT 8.5' BGS. SLIGHT PETROLEUM ODOR. SAND IS FINE TO MEDIUM COARSE. FROM 10'-12' BGS COLOR GLEY 1 7/10Y.		N/A		Y	WATER ENCOUNTERED AT 8.5' BGS	
12'														
16'														
	A	B	C	D	E	F	G	H I	J	K	L	M	N	O

U = Thin Wall Tube
S = Split Spoon (tube)
C = Cuttings
R = Rock Coring
O = Other
OVA Instrument (Make/Model)
On-Site G/C (Make/Model)
GC Operator:
MiniRae 2000 PID
Notes:

BORING LOG

Boring/ Well No:	SB-18	Installation:	Fort Stewart	Site:	Building 419
Project No.:	E00209.0007			Client/ Project:	US Army Corps of Engineers
Contractor:	SpecPro Environmental Services LLC			Drilling Contractor:	Major Drilling
Driller:	James Chambers			Borehole Diameter:	4 Inches
Start - Date:	3/30/2011	Time:	11:10 AM	End Date:	3/30/2011 Time: 11:35 AM
Drilling Method / Rig Type:	Direct Push/Geoprobe			Coordinates:	
Logged By:	Doug Hawn	E-Log (Y / N) FROM	To	Protection Level:	Level D

Depth (ft)	Sample	Sample No.	Off-site Lab (Y/N)	On-site lab (Y/N)	OVA Reading (ppm)	Headspace (ppm)	Recovery (ft/ft)	Litologic Description	USCS	Blows/6 inch	Stratigraphic Log	Well Construction Data	Water Depth & Remarks	GS Elev. (ft)
0'	Y		Y	N	NA	N/A	4/4	GRASS (NEAR FORMER TANK AREA). FROM 0-6" BGS - DARK ORGANIC MATTER. FROM 18"-20" BGS - DARK GRITTY SAND, MOIST. FROM 20"-42" BGS - LIGHT TAN/GREY SAND, FIND GRAINED WITH SOME CLAY. MOTTLING, VERY PLASTIC.	O SM CH	N/A		Y		
4'	N	SB-18-01		N	NA 40	N/A	4/4	HEAVY MOTTLING. 80% SAND AND 20% SILT FROM 5'-6' BGS, WITH MEDIUM TO COARSE SANDS. FROM 6'-8' BGS 80% CLAY, 10% SAND, AND 10% SILT, WITH MEDIUM PLASTICITY. MEDIUM STIFFNESS. FROM 5'-6' BGS COLOR 5YR6/4 AND FROM 6'-8' BGS COLOR GLEY 1 7/10Y.	SM CL	N/A		Y		
8'	Y	SB-18-02	Y		27	N/A	4/4	80% SAND, 10% SILT, AND 10% CLAY. GROUNDWATER AT 10.5' BGS. STRONG PETROLEUM ODOR. SAND IS FINE TO MEDIUM COARSE. FROM 10'-12' BGS COLOR GLEY 1 7/10Y.		N/A		Y	WATER ENCOUNTERED AT 10.5' BGS	
12'														
16'														
	A	B	C	D	E	F	G	H I	J	K	L	M	N	O

U = Thin Wall Tube
S = Split Spoon (tube)
C = Cuttings
R = Rock Coring
O = Other
OVA Instrument (Make/Model)
On-Site G/C (Make/Model)
GC Operator:
MiniRae 2000 PID
Notes:

BORING LOG

Boring/ Well No:	SB-19/MW-03	Installation:	Fort Stewart	Site:	Building 419
Project No.:	E00209.0007		Client/ Project:	US Army Corps of Engineers	
Contractor:	SpecPro Environmental Services LLC		Drilling Contractor:	Major Drilling	
Driller:	James Chambers		Borehole Diameter:	4 Inches	
Start - Date:	3/30/2011	Time: 2:00 PM	End Date:	3/30/2011	Time: 2:10 PM
Drilling Method / Rig Type:	Direct Push/Geoprobe		Coordinates:		
Logged By:	Doug Hawn	E-Log (Y / N) FROM To	Protection Level:	Level D	

Depth (ft)	Sample	Sample No.	Off-site Lab (Y/N)	On-site lab (Y/N)	OVA Reading (ppm)	Headspace (ppm)	Recovery (ft/ft)	Litologic Description	USCS	Blows/6 inch	Stratigraphic Log	Well Construction Data	Water Depth & Remarks	GS Elev. (ft)
0'	Y		Y	N	NA	N/A	4/4	ASHPHALT PARKING LOT AND FILL MATERIAL FROM 0-18". 18"-20" BGS - DARK GRITTY SAND, MOIST. FROM 20"-42" BGS - LIGHT TAN/GREY SAND, FIND GRAINED WITH SOME CLAY. MOTTLING, VERY PLASTIC.	O SM CH	N/A		Y		
4'	N	SB-19-01		N	40	N/A	4/4	HEAVY MOTTLING. 80% SAND AND 20% SILT FROM 5'-6' BGS, WITH MEDIUM TO COARSE SANDS. FROM 6'-8' BGS 80% CLAY, 10% SAND, AND 10% SILT, WITH MEDIUM PLASTICITY. MEDIUM STIFFNESS. FROM 5'-6' BGS COLOR 5YR6/4 AND FROM 6'-8' BGS COLOR GLEY 1 7/10Y.	SM CL	N/A		Y		
8'	Y	SB-19-02	Y		45 27	N/A	4/4	80% SAND, 10% SILT, AND 10% CLAY. GROUNDWATER AT 9' BGS. SAND IS FINE TO MEDIUM COARSE. FROM 10'-12' BGS COLOR GLEY 1 7/10Y.		N/A		Y	WATER ENCOUNTERED AT 9' BGS	
12'	N					N/A	4/4	80% SAND, 10% SILT, AND 10% CLAY. SAND IS MEDIUM TO COARSE. VERY WET. FROM 12'-15' BGS COLOR GLEY 1 7/10Y.		N/A		Y		
16'														
	A	B	C	D	E	F	G	H I	J	K	L	M	N	O

U = Thin Wall Tube
S = Split Spoon (tube)
C = Cuttings
R = Rock Coring
O = Other
OVA Instrument (Make/Model)
On-Site G/C (Make/Model)
GC Operator:
MiniRae 2000 PID
Notes:

BORING LOG

Boring/ Well No: SB-20	Installation:	Fort Stewart	Site: Building 419
Project No.: E00209.0007		Client/ Project:	US Army Corps of Engineers
Contractor: SpecPro Environmental Services LLC		Drilling Contractor:	Major Drilling
Driller: James Chambers		Borehole Diameter:	4 Inches
Start - Date: 3/30/2011	Time: 2:15 PM	End Date: 3/30/2011	Time: 2:25 PM
Drilling Method / Rig Type: Direct Push/Geoprobe		Coordinates:	
Logged By: Doug Hawn	E-Log (Y / N) FROM To	Protection Level:	Level D

Depth (ft)	Sample	Sample No.	Off-site Lab (Y/N)	On-site lab (Y/N)	OVA Reading (ppm)	Headspace (ppm)	Recovery (ft/ft)	Litologic Description	USCS	Blows/6 inch	Stratigraphic Log	Well Construction Data	Water Depth & Remarks	GS Elev. (ft)
0'	Y		Y	N	NA	N/A	4/4	ASHPHALT PARKING LOT AND FILL MATERIAL FROM 0-18". 18"-20" BGS - DARK GRITTY SAND, MOIST. FROM 20"-42" BGS - LIGHT TAN/GREY SAND, FIND GRAINED WITH SOME CLAY. MOTTLING, VERY PLASTIC.	O SM CH	N/A		Y		
4'	N	SB-20-01		N	45	N/A	4/4	HEAVY MOTTLING. 80% SAND AND 20% SILT FROM 5'-6' BGS, WITH MEDIUM TO COARSE SANDS. FROM 6'-8' BGS 80% CLAY, 10% SAND, AND 10% SILT, WITH MEDIUM PLASTICITY. MEDIUM STIFFNESS. FROM 5'-6' BGS COLOR 5YR6/4 AND FROM 6'-8' BGS COLOR GLEY 1 7/10Y.	SM CL	N/A		Y		
8'	Y	SB-20-02	Y		65	N/A	4/4	80% SAND, 10% SILT, AND 10% CLAY. GROUNDWATER AT 9' BGS. SAND IS FINE TO MEDIUM COARSE. FROM 10'-12' BGS COLOR GLEY 1 7/10Y.		N/A		Y	WATER ENCOUNTERED AT 9' BGS	
12'														
16'														
	A	B	C	D	E	F	G	H I	J	K	L	M	N	O

U = Thin Wall Tube
S = Split Spoon (tube)
C = Cuttings
R = Rock Coring
O = Other
OVA Instrument (Make/Model)
On-Site G/C (Make/Model)
GC Operator:
MiniRae 2000 PID
Notes:

BORING LOG

Boring/ Well No: SB-20/MW-06	Installation: Fort Stewart	Site: Building 419	
Project No.: E00209.0007	Client/ Project: US Army Corps of Engineers		
Contractor: SpecPro Environmental Services LLC	Drilling Contractor: Major Drilling		
Driller: James Chambers	Borehole Diameter: 4 Inches		
Start - Date: 4/7/2011 Time: 10:00 AM	End Date: 4/7/2011 Time: 10:15 AM		
Drilling Method / Rig Type: Direct Push/Geoprobe	Coordinates:		
Logged By: Doug Hawn	E-Log (Y / N) FROM To	Protection Level: Level D	

Depth (ft)	Sample	Sample No.	Off-site Lab (Y/N)	On-site lab (Y/N)	OVA Reading (ppm)	Headspace (ppm)	Recovery (ft/ft)	Litologic Description	USCS	Blows/6 inch	Stratigraphic Log	Well Construction Data	Water Depth & Remarks	GS Elev. (ft)
0'	Y		Y	N	NA	N/A	4/4	ASHPHALT PARKING LOT AND FILL MATERIAL FROM 0-18". 18"-42" BGS - GRAVEL FILL MATERIAL.	O SM CH	N/A		Y		
4'	N			N	NA	N/A	4/4	FROM 5'-6' BGS ORGANIC, BLACK, MUCKY SOIL WITH MEDIUM TO COARSE SANDS. GROUNDWATER AT 6' BGS. FROM 6'-8' BGS 80% CLAY, 10% SAND, AND 10% SILT, WITH MEDIUM PLASTICITY. MEDIUM STIFFNESS. FROM 5'-6' BGS COLOR 5YR6/4 AND FROM 6'-8' BGS COLOR GLEY 1 7/10Y.	SM CL	N/A		Y	WATER ENCOUNTERED AT 6' BGS	
8'	Y		Y		NA	N/A	4/4	80% SAND, 10% SILT, AND 10% CLAY. SAND IS FINE TO MEDIUM COARSE. FROM 10'-12' BGS COLOR GLEY 1 7/10Y.		N/A		Y		
12'	N					N/A	4/4	80% SAND, 10% SILT, AND 10% CLAY. SAND IS MEDIUM TO COARSE. VERY WET. FROM 12'-15' BGS COLOR GLEY 1 7/10Y.		N/A		Y		
16'														
A	B	C	D	E	F	G	H I		J	K	L	M	N	O

U = Thin Wall Tube
S = Split Spoon (tube)
C = Cuttings
R = Rock Coring
O = Other
OVA Instrument (Make/Model)
On-Site G/C (Make/Model)
GC Operator:
MiniRae 2000 PID
Notes:

Appendix B

Nonhazardous Waste Manifests – Soils and Well Installation

Please print or type
(Form designed for use on elite (12-pitch) typewriter.)

NON-HAZARDOUS WASTE MANIFEST

1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Waste Tracking Number

5. Generator's Name and Mailing Address

Generator's Site Address (if different than mailing address)

Generator's Phone:

6. Transporter 1 Company Name — U.S. EPA ID Number

7. Transporter 2 Company Name — U.S. EPA ID Number

8. Designated Facility Name and Site Address — U.S. EPA ID Number

Facility's Phone:

	9. Waste Shipping Name and Description	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	
	1.					
	2.					
	3.					
	4.					

13. Special Handling Instructions and Additional Information

14. GENERATOR'S CERTIFICATION: I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.

Generator's/Offeror's Printed/Typed Name — Signature — Month — Day — Year

INT'L

15. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:

Transporter Signature (for exports only): Date leaving U.S.:

TRANSPORTER

16. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name — Signature — Month — Day — Year

Transporter 2 Printed/Typed Name — Signature — Month — Day — Year

DESIGNATED FACILITY

17. Discrepancy

17a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

Manifest Reference Number:

17b. Alternate Facility (or Generator) — U.S. EPA ID Number

Facility's Phone:

17c. Signature of Alternate Facility (or Generator) — Month — Day — Year

18. Designated Facility Owner or Operator: Certification of receipt of materials covered by the manifest except as noted in Item 17a

Printed/Typed Name — Signature — Month — Day — Year

GC Labels • Printed in the USA
1-800-997-6966

GENERATOR'S/SHIPPER'S INITIAL COPY

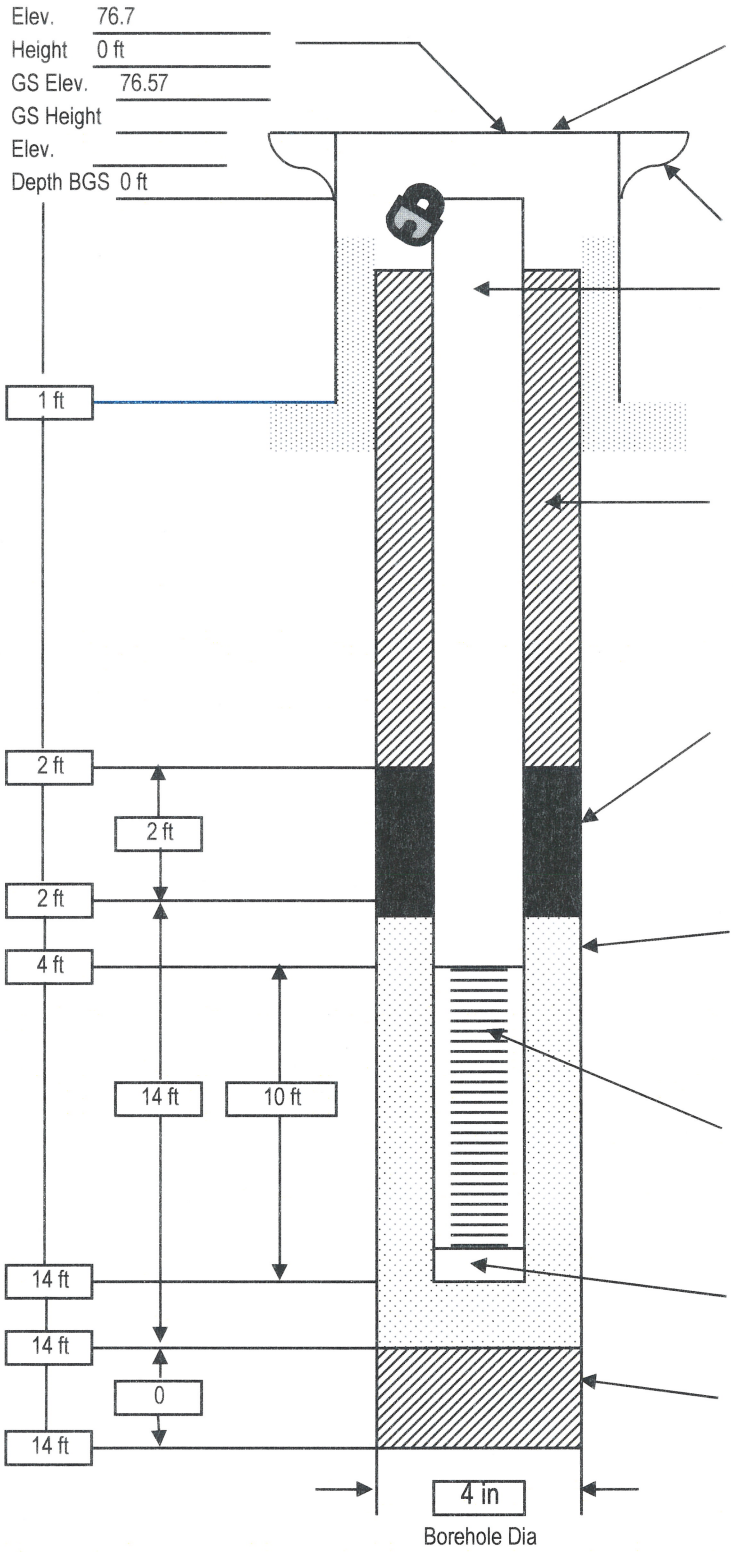
Reorder Part# MANIFEST-C6NHW
913-897-6966

Appendix C

Groundwater Monitor Well Construction Logs

MONITOR WELL CONSTRUCTION LOG - Standard Flush Mount

Well No.: MW - 01	Installation: Fort Stewart	Site: Building 419
Project No.: E0209.0007	Client/Project: USACE	
Contractor: SpecPro Environmental Services, .LLC	Drilling Contractor: Major Drilling	
Start Date: 4/6/2011	End Date 4/6/2011 Time: 8:15 AM	
Built By: James Chambers	Well Coordinates: N: 681051.5 E: 829762.92	



PROTECTIVE CASING
Material/Type: Schedule 40 PVC
Diameter: 2 inch
Watertight O-Ring: ☑ Yes ☐ No
Breathes with Vadose Zone: ☐ Yes ☑ No

SURFACE PAD
Composition & Size: concrete

RISER PIPE
Type: Schedule 40 PVC
Diameter: 2 inch
Total Length (TOC to TOS): 14 ft
Ventilated Cap: ☐ Yes ☑ No
O-Rings for Threads: ☑ Yes ☐ No

GROUT
Composition & Amount: bentonite pellets, 1/4 bags
Tremied: ☑ Yes ☐ No
Interval BGS: 0 -2 ft

CENTRALIZERS: ☑ Yes ☑ No
Depth(s): N/A

SEAL
Type: bentonite pellets
Source: Enviroplug
Setup/Hydration Time: 1 hour
Volume Fluid Added: 0
Tremied: ☐ Yes ☑ No

FILTER PACK
Type: DSI Number 1 sand
Amount Used: 4 1/2 bags
Tremied: ☑ Yes ☐ No
Source: Driller's Service Inc.
Gr. Size Dist: number 1

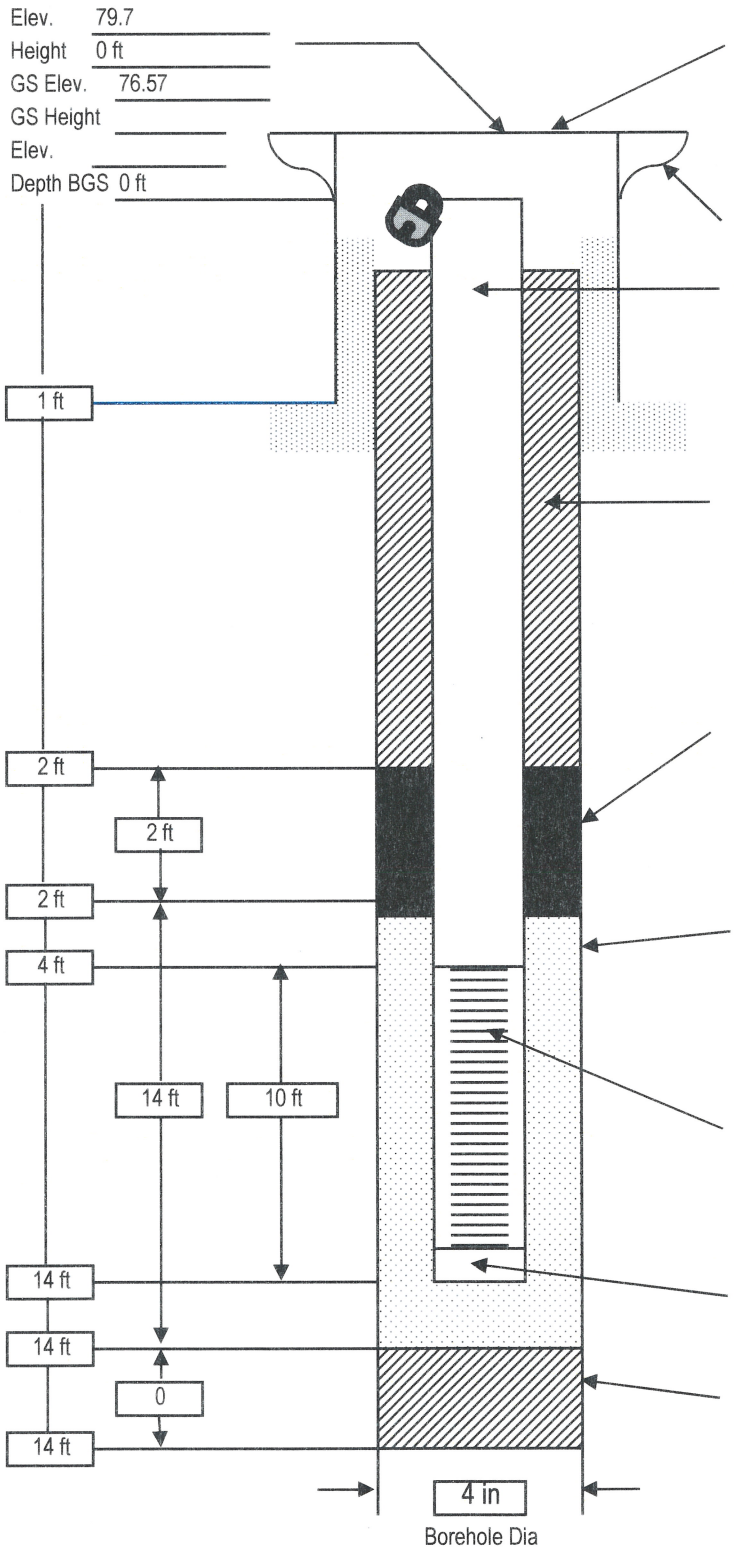
SCREEN
Type: Factory Cut Schedule 40 PVC
Diameter: 2 in
Slot Size: 0.010 in
Interval BGS: 4 - 14 feet

SUMP
Interval BGS: N/A
Type of Bottom Cap: N/A

BACKFILL PLUG
Material: N/A
Setup/Hydration Time: N/A
Tremied: ☐ Yes ☐ No

MONITOR WELL CONSTRUCTION LOG - Standard Flush Mount

Well No.: MW - 02	Installation: Fort Stewart	Site: Building 419
Project No.: E0209.0007	Client/Project: USACE	
Contractor: SpecPro Environmental Services, .LLC	Drilling Contractor: Major Drilling	
Start Date: 4/6/2011	End Date 4/6/2011 Time: 11:00 AM	
Built By: James Chambers	Well Coordinates: N: 680839.28 E: 829687.69	



PROTECTIVE CASING
Material/Type Schedule 40 PVC
Diameter 2 inch
Watertight O-Ring ☑ Yes ☐ No
Breathes with Vadose Zone ☐ Yes ☑ No

SURFACE PAD
Composition & Size concrete

RISER PIPE
Type Schedule 40 PVC
Diameter 2 inch
Total Length (TOC to TOS) 14 ft
Ventilated Cap ☐ Yes ☑ No
O-Rings for Threads ☑ Yes ☐ No

GROUT
Composition & Amount bentonite pellets, 1/4 bags
Tremied ☑ Yes ☐ No
Interval BGS 0 -2 ft

CENTRALIZERS ☑ Yes ☑ No
Depth(s) N/A

SEAL
Type bentonite pellets, 1/4 bag
Source Enviroplug
Setup/Hydration Time 1 hour
Volume Fluid Added 0
Tremied ☐ Yes ☑ No

FILTER PACK
Type DSI Number 1 sand
Amount Used 4 bags
Tremied ☑ Yes ☐ No
Source Driller's Service Inc.
Gr. Size Dist number 1

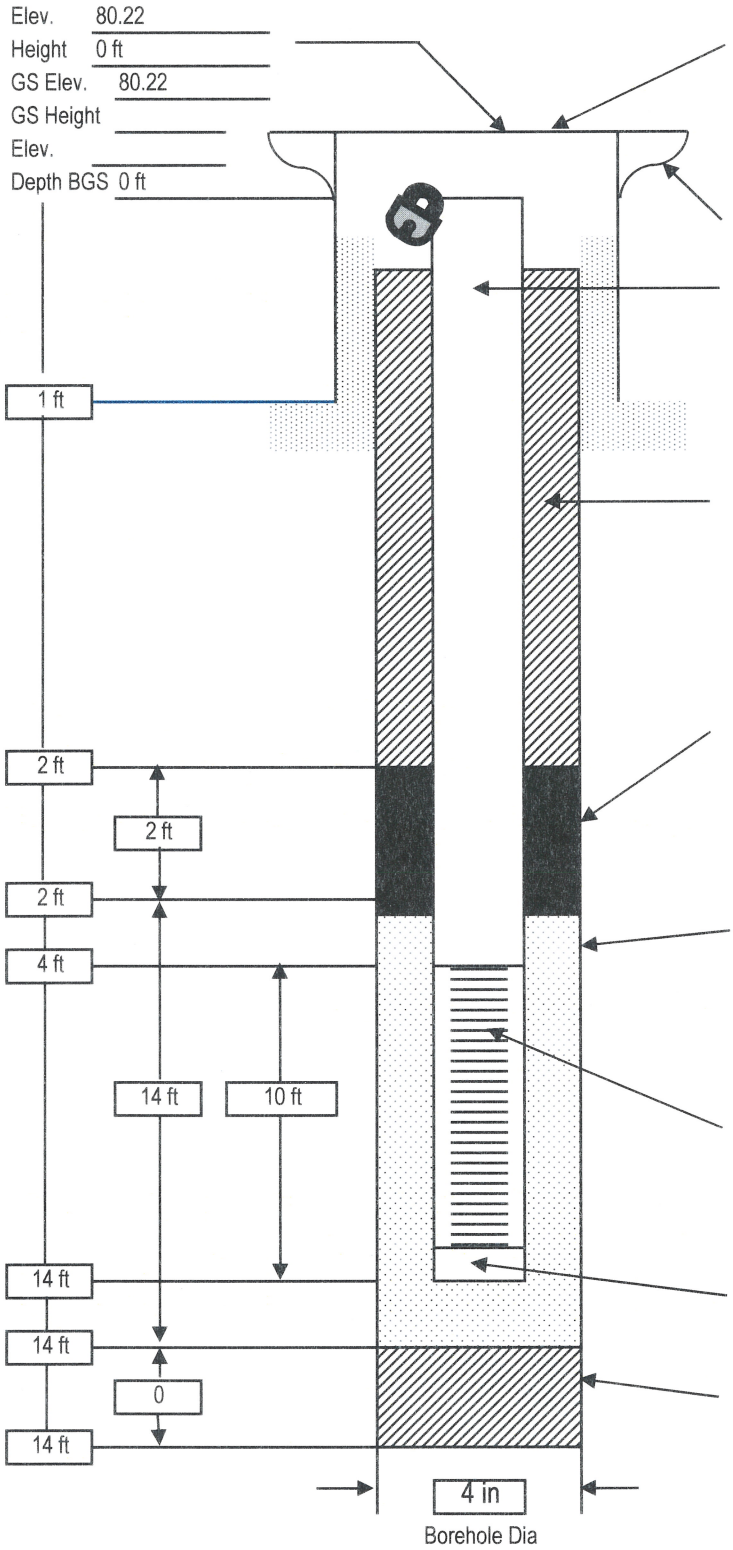
SCREEN
Type Factory Cut Schedule 40 PVC
Diameter 2 in
Slot Size 0.010 in
Interval BGS 4 - 14 feet

SUMP
Interval BGS N/A
Type of Bottom Cap N/A

BACKFILL PLUG
Material N/A
Setup/Hydration Time N/A
Tremied ☐ Yes ☐ No

MONITOR WELL CONSTRUCTION LOG - Standard Flush Mount

Well No.: MW - 03	Installation: Fort Stewart	Site: Building 419
Project No.: E0209.0007	Client/Project: USACE	
Contractor: SpecPro Environmental Services, .LLC	Drilling Contractor: Major Drilling	
Start Date: 4/6/2011	End Date 4/6/2011 Time: 1:00 PM	
Built By: James Chambers	Well Coordinates: N: 680902.11 E: 829692.71	



PROTECTIVE CASING
Material/Type Schedule 40 PVC
Diameter 2 inch
Watertight O-Ring ☑ Yes ☐ No
Breathes with Vadose Zone ☐ Yes ☑ No

SURFACE PAD
Composition & Size concrete

RISER PIPE
Type Schedule 40 PVC
Diameter 2 inch
Total Length (TOC to TOS) 14 ft
Ventilated Cap ☐ Yes ☑ No
O-Rings for Threads ☑ Yes ☐ No

GROUT
Composition & Amount bentonite pellets, 1/4 bag
Tremied ☑ Yes ☐ No
Interval BGS 0 -2 ft

CENTRALIZERS ☑ Yes ☑ No
Depth(s) N/A

SEAL
Type bentonite pellets, 1/4 bag
Source Enviroplug
Setup/Hydration Time 1 hour
Volume Fluid Added 0
Tremied ☐ Yes ☑ No

FILTER PACK
Type DSI Number 1 sand
Amount Used 4 1/2 bags
Tremied ☑ Yes ☐ No
Source Driller's Service Inc.
Gr. Size Dist number 1

SCREEN
Type Factory Cut Schedule 40 PVC
Diameter 2 in
Slot Size 0.010 in
Interval BGS 4 - 14 feet

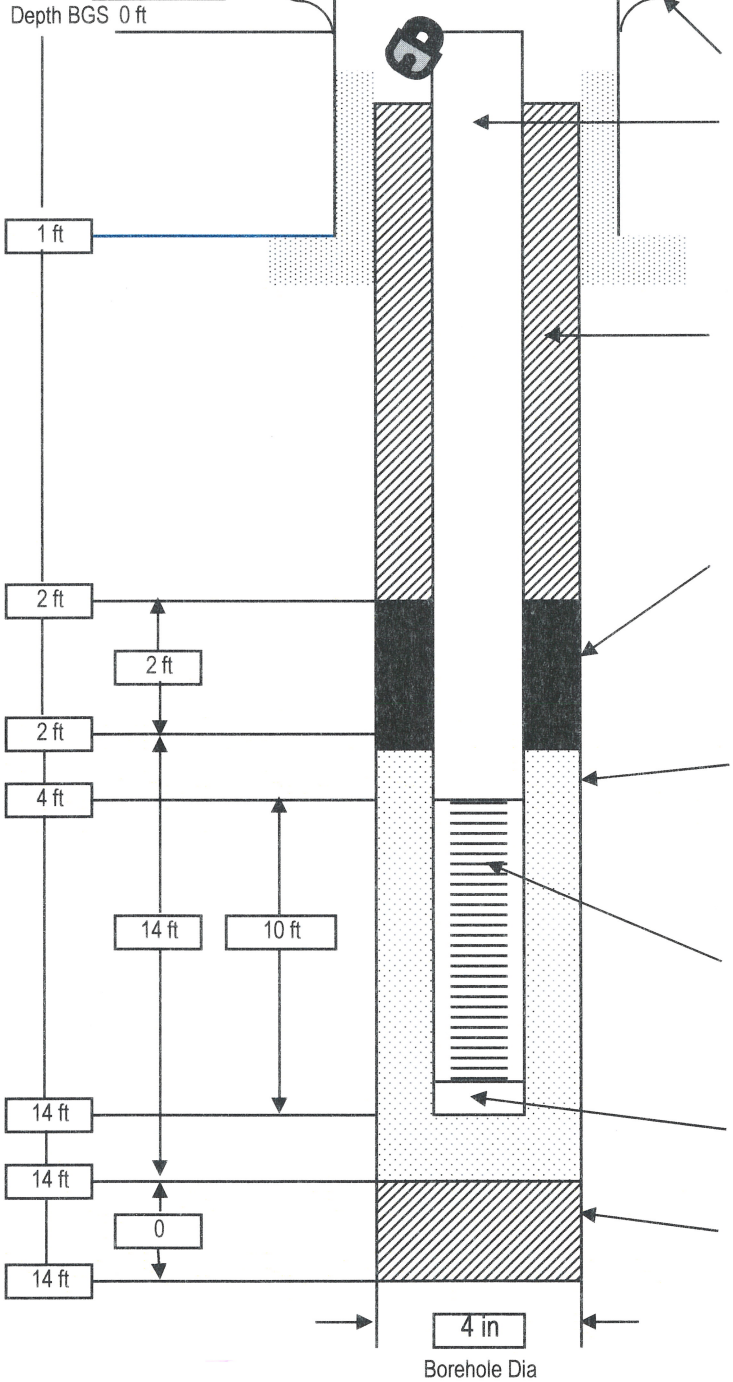
SUMP
Interval BGS N/A
Type of Bottom Cap N/A

BACKFILL PLUG
Material N/A
Setup/Hydration Time N/A
Tremied ☐ Yes ☐ No

MONITOR WELL CONSTRUCTION LOG - Standard Flush Mount

Well No.: MW - 04	Installation: Fort Stewart	Site: Building 419
Project No.: E0209.0007	Client/Project: USACE	
Contractor: SpecPro Environmental Services, .LLC	Drilling Contractor: Major Drilling	
Start Date: 4/6/2011	End Date 4/6/2011 Time: 3:00 PM	
Built By: James Chambers	Well Coordinates: N: 680878.76 E: 829795.4	

Elev. 77.12
Height 0 ft
GS Elev. 77.12
GS Height
Elev.
Depth BGS 0 ft



PROTECTIVE CASING
Material/Type Schedule 40 PVC
Diameter 2 inch
Watertight O-Ring ☑ Yes ☐ No
Breathes with Vadose Zone ☐ Yes ☑ No

SURFACE PAD
Composition & Size concrete

RISER PIPE
Type Schedule 40 PVC
Diameter 2 inch
Total Length (TOC to TOS) 14 ft
Ventilated Cap ☐ Yes ☑ No
O-Rings for Threads ☑ Yes ☐ No

GROUT
Composition & Amount bentonite pellets, 1/4 bag
Tremied ☑ Yes ☐ No
Interval BGS 0 -2 ft

CENTRALIZERS ☑ Yes ☑ No
Depth(s) N/A

SEAL
Type bentonite pellets, 1/4 bag
Source Enviroplug
Setup/Hydration Time 1 hour
Volume Fluid Added 0
Tremied ☐ Yes ☑ No

FILTER PACK
Type DSI Number 1 sand
Amount Used 4 1/2 bags
Tremied ☑ Yes ☐ No
Source Driller's Service Inc.
Gr. Size Dist number 1

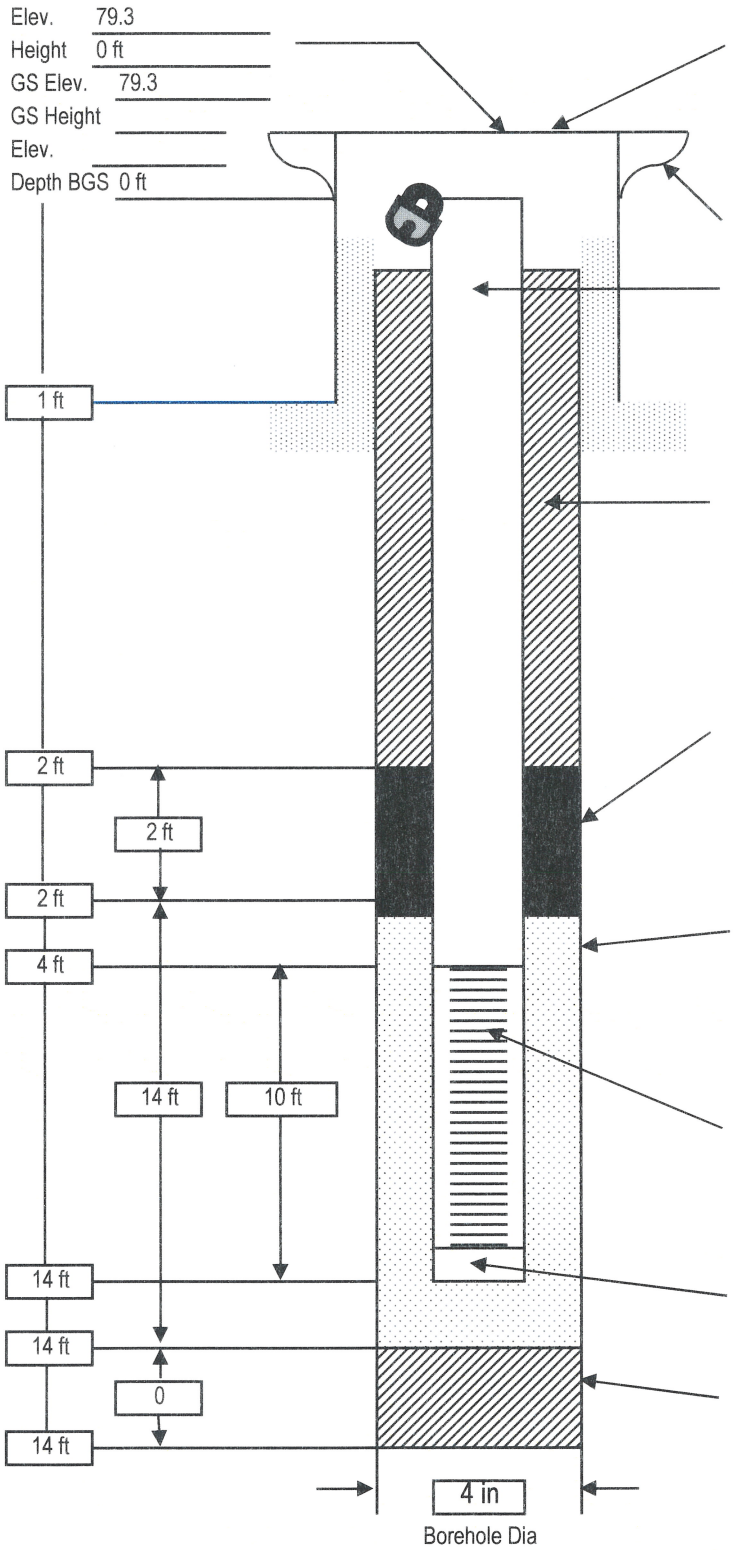
SCREEN
Type Factory Cut Schedule 40 PVC
Diameter 2 in
Slot Size 0.010 in
Interval BGS 4 - 14 feet

SUMP
Interval BGS N/A
Type of Bottom Cap N/A

BACKFILL PLUG
Material N/A
Setup/Hydration Time N/A
Tremied ☐ Yes ☐ No

MONITOR WELL CONSTRUCTION LOG - Standard Flush Mount

Well No.: MW - 05	Installation: Fort Stewart	Site: Building 419
Project No.: E0209.0007	Client/Project: USACE	
Contractor: SpecPro Environmental Services, .LLC	Drilling Contractor: Major Drilling	
Start Date: 4/7/2011	End Date 4/7/2011 Time: 10:30 AM	
Built By: James Chambers	Well Coordinates: N: 680958.13 E: 829826.7	



PROTECTIVE CASING
Material/Type: Schedule 40 PVC
Diameter: 2 inch
Watertight O-Ring: ☑ Yes ☐ No
Breathes with Vadose Zone: ☐ Yes ☑ No

SURFACE PAD
Composition & Size: concrete

RISER PIPE
Type: Schedule 40 PVC
Diameter: 2 inch
Total Length (TOC to TOS): 14 ft
Ventilated Cap: ☐ Yes ☑ No
O-Rings for Threads: ☑ Yes ☐ No

GROUT
Composition & Amount: bentonite pellets, 1/4 bag
Tremied: ☑ Yes ☐ No
Interval BGS: 0 -2 ft

CENTRALIZERS: ☑ Yes ☑ No
Depth(s): N/A

SEAL
Type: bentonite pellets, 1/4 bag
Source: Enviroplug
Setup/Hydration Time: 1 hour
Volume Fluid Added: 0
Tremied: ☐ Yes ☑ No

FILTER PACK
Type: DSI Number 1 sand
Amount Used: 4 1/2 bags
Tremied: ☑ Yes ☐ No
Source: Driller's Service Inc.
Gr. Size Dist: number 1

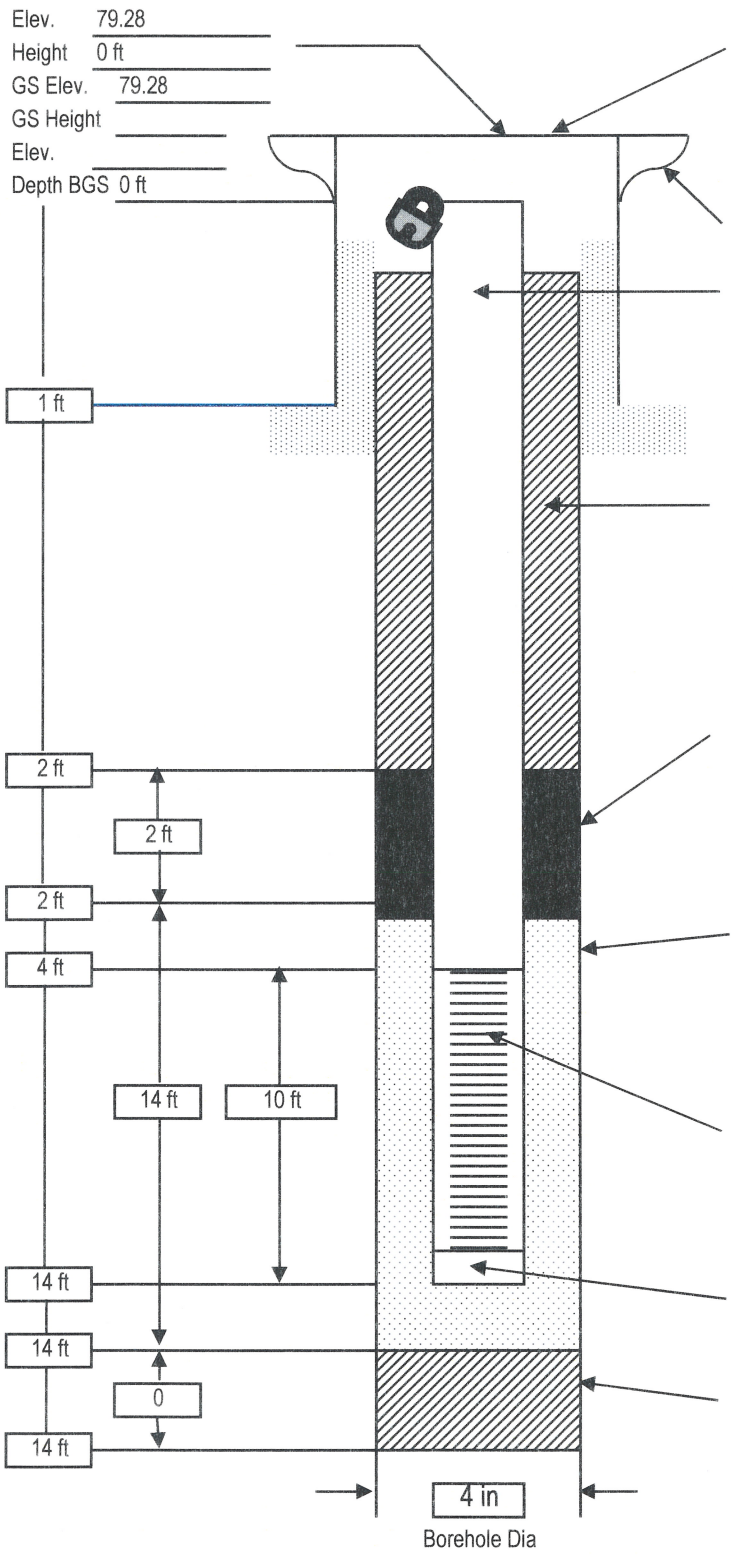
SCREEN
Type: Factory Cut Schedule 40 PVC
Diameter: 2 in
Slot Size: 0.010 in
Interval BGS: 4 - 14 feet

SUMP
Interval BGS: N/A
Type of Bottom Cap: N/A

BACKFILL PLUG
Material: N/A
Setup/Hydration Time: N/A
Tremied: ☐ Yes ☐ No

MONITOR WELL CONSTRUCTION LOG - Standard Flush Mount

Well No.: MW - 06	Installation: Fort Stewart	Site: Building 419
Project No.: E0209.0007	Client/Project: USACE	
Contractor: SpecPro Environmental Services, .LLC	Drilling Contractor: Major Drilling	
Start Date: 4/7/2011	End Date 4/7/2011 Time: 1:00 PM	
Built By: James Chambers	Well Coordinates: N: 680977.33 E: 829827.41	



PROTECTIVE CASING
Material/Type: Schedule 40 PVC
Diameter: 2 inch
Watertight O-Ring: ☑ Yes ☐ No
Breathes with Vadose Zone: ☐ Yes ☑ No

SURFACE PAD
Composition & Size: concrete

RISER PIPE
Type: Schedule 40 PVC
Diameter: 2 inch
Total Length (TOC to TOS): 14 ft
Ventilated Cap: ☐ Yes ☑ No
O-Rings for Threads: ☑ Yes ☐ No

GROUT
Composition & Amount: bentonite pellets, 1/4 bag
Tremied: ☑ Yes ☐ No
Interval BGS: 0 -2 ft
CENTRALIZERS: ☑ Yes ☑ No
Depth(s): N/A

SEAL
Type: bentonite pellets, 1/4 bag
Source: Enviroplug
Setup/Hydration Time: 1 hour
Volume Fluid Added: 0
Tremied: ☐ Yes ☑ No

FILTER PACK
Type: DSI Number 1 sand
Amount Used: 4 1/2 bags
Tremied: ☑ Yes ☐ No
Source: Driller's Service Inc.
Gr. Size Dist: number 1

SCREEN
Type: Factory Cut Schedule 40 PVC
Diameter: 2 in
Slot Size: 0.010 in
Interval BGS: 4 - 14 feet

SUMP
Interval BGS: N/A
Type of Bottom Cap: N/A

BACKFILL PLUG
Material: N/A
Setup/Hydration Time: N/A
Tremied: ☐ Yes ☐ No

Appendix D

EcoVac Monthly Reports

ECOVAC SERVICES
The World Leader in Mobile Dual-Phase/Multi-Phase Extraction and Patented SURFAC®/ISCO-EFR®/COSOLV® Technologies Treatability Studies/Research & Development

July 11, 2011

Mr. Doug Hawn
SpecPro Environmental
1006 Floyd Culler Court
Oak Ridge, Tennessee 37830
dhawn@specproenv.com

Subject: **REVISED--Enhanced Fluid Recovery (EFR®) Results**
Event No. 1
Building 419
Fort Stewart, Georgia

Dear Mr. Hawn:

Please find attached the data summary for the first EFR® event conducted at the subject site on June 12, 2011. The following summarizes the results of this EFR® event.

SUMMARY OF RESULTS

Separate-phase hydrocarbons (SPH) were detected in one monitor well (MW-04 - 0.42 feet) and four recovery wells (RW-01 - 0.25 feet, RW-04 - 4.50 feet, RW-05 - 3.79 feet, and RW-06 - 1.02 feet) prior to conducting this EFR® event. This EFR® event was conducted for seven hours at five extraction points, consisting of the initial 4.25 hours of extraction at recovery wells RW-01, RW-04, RW-05, and RW-06. Monitor well MW-04 was added to the extraction array for the final 2.75 hours of this event. SPH was not detected in the extraction wells upon completion of the event.

A calculated total of 96 pounds of petroleum hydrocarbons (approximately 14 equivalent gallons of gasoline/diesel fuel) was removed during this EFR® event.

The hydrocarbon removal rate ranged from 12 to 16 pounds per hour with a trend of decreasing removal rates throughout the event.

Vapor concentrations ranged from 9,700 to 10,000 parts per million by volume (PPM_V) during this EFR® event. Vapor flow rates ranged from 78 to 98 cubic feet per minute (CFM) throughout this event. In-well vacuums recorded during this EFR® event are detailed on the EFR® Field Data Sheet and summarized below:

Extraction Well Location	Vacuum Reading
RW-01	10 inches of mercury
RW-04	8 inches of mercury
RW-05	15 inches of mercury
RW-06	15 inches of mercury
MW-04	10 inches of mercury

Differential pressures were recorded during this event to assess the vacuum influence induced by EFR® in the vadose zone. The differential pressure data are detailed in the attached data table and summarized below:

Monitor Well	Maximum Change	Nearest Extraction Well (Approx. Distance)
MW-04	-0.03 inch of water	RW-06 (22 feet)
RW-02	-0.15 inch of water	RW-04 (30 feet)
MW-02	0.00 inch of water	RW-01 (42 feet)
MW-05	-0.01 inch of water	RW-05 (42 feet)
MW-06	-0.15 inch of water	RW-05 (55 feet)
MW-03	0.00 inch of water	RW-01 (90 feet)

Groundwater levels were recorded during this event to assess the groundwater drawdown created by EFR®. The drawdown data are detailed in the attached table and summarized below:

Monitor Well	Maximum Change	Nearest Extraction Well (Approx. Distance)
RW-02	-1.59 feet	RW-04 (30 feet)
MW-02	-0.18 feet	RW-01 (42 feet)
MW-05	-0.13 feet	RW-05 (42 feet)
MW-06	-0.35 feet	RW-05 (55 feet)
MW-03	-0.08 feet	RW-01 (90 feet)

Approximately 2,573 gallons of liquid were removed during this EFR® event and transported to the Georgia Petroleum treatment facility (Valdosta, Georgia) for disposal. SPH was not detected in the vacuum truck tank upon completion of the event.

Thank you for the continued opportunity to team with SpecPro in serving the environmental needs of your clients. We look forward to working with you again in the future to provide innovative and cost effective environmental solutions at this and other sites.

Sincerely,

EcoVac Services

David M. Goodrich

David M. Goodrich, P.G.

EFR® FIELD DATA SHEET

Client: SpecPro	Facility Name: Building 419	Event #: 1
Facility Address: Fort Stewart; Hinesville, Georgia	Technician: Wilson	Date: 6/12/11

Extraction Well(s)	Time hh:mm	Extraction Well-head Vacuum (in. Hg)									Vacuum Truck Exhaust				
		Inlet	RW-01	RW-04	RW-05	RW-06	MW-04				Concentration PPM	Offgas Velocity FT/MIN	Flow Rate CFM	Removal Rate LBS/HR	Interval Removal LBS
Start Time:	7:45														
RW-01,04,05,06	8:00	23	10	8	15	15	-				10,000	2,000	98	16	4.0
"	8:15	23	10	8	15	15	-				10,000	2,000	98	16	4.0
"	8:30	23	10	8	15	15	-				10,000	2,000	98	16	4.0
"	9:00	23	10	8	15	15	-				10,000	1,900	93	15	7.6
"	9:30	23	10	8	15	15	-				10,000	1,700	83	14	6.8
"	10:00	23	10	8	15	15	-				10,000	1,700	83	14	6.8
"	11:00	23	10	8	15	15	-				10,000	1,600	78	13	13
RW-01,04,05,06; MW-04	12:00	23	10	8	15	15	10				10,000	1,600	78	13	13
"	13:00	23	10	8	15	15	10				10,000	1,600	78	13	13
"	14:00	24	10	8	15	15	10				9,800	1,600	78	13	13
"	14:45	24	10	8	15	15	10				9,700	1,600	78	12	12

Well Gauging Data:			Before EFR® Event			After EFR® Event			Corr. DTW
Well No.	Diam.	TD (ft)	DTS (ft)	DTW (ft)	SPH (ft)	DTS (ft)	DTW (ft)	SPH (ft)	Change (ft)
MW-01	2"	13.71	-	7.64	0.00	-	5.25	0.00	2.39
MW-02	2"	14.23	-	8.01	0.00	-	8.19	0.00	-0.18
MW-03	2"	13.73	-	7.66	0.00	-	7.74	0.00	-0.08
MW-04	2"	13.20	4.51	4.93	0.42	-	7.89	0.00	-3.28
MW-05	2"	13.79	-	8.60	0.00	-	8.73	0.00	-0.13
MW-06	2"	13.04	-	8.49	0.00	-	8.84	0.00	-0.35
RW-01	6"	15.92	8.54	8.79	0.25	-	10.09	0.00	-1.49
RW-02	2"	14.44	-	8.03	0.00	-	9.62	0.00	-1.59
RW-04	6"	15.41	7.60	12.10	4.50	-	9.89	0.00	-1.17
RW-05	6"	16.40	7.81	11.60	3.79	-	10.36	0.00	-1.60
RW-06	6"	10.31	5.79	6.81	1.02	-	8.09	0.00	-2.05

Vacuum Truck Information	
Subcontractor:	AllVac
Truck Operator:	Wilson
Truck No.:	149
Vacuum Pumps:	Becker
Pump Type:	Twin LC-44s
Tank Capacity (gal.):	2,894
Stack I.D. (inches)	3.0

Well ID	Breather Port	Stinger Depth
MW-04	0 (closed)	13 feet
RW-01	0 (closed)	15 feet
RW-04	0 (closed)	15 feet
RW-05	0 (closed)	16 feet
RW-06	0 (closed)	10 feet

Recovery/Disposal Information		
Hydrocarbons Removed (vapor):	96	pounds
Hydrocarbons Removed (liquid):	0	gallons
Total Hydrocarbons Removed:	14	equiv. gal.
Molecular Weight Utilized:	103	g/mole
Disposal Facility:	Georgia Petroleum	
Manifest Number:		
Total Liquids Removed:	2,573	gallons

www.ecovacservices.com
770-592-1001

Time:	7:45 to 14:45
# Pumps:	2
RPMs:	900
Time:	
# Pumps:	
RPMs:	

This event was terminated after 7 hours of extraction due to the vacuum truck tank reaching its maximum liquid weight capacity.

Differential Pressure and Groundwater Drawdown Data Recorded During EFR®
Event #: 1 Date: 6/12/11
Facility Name: Building 419
Facility Address: Fort Stewart; Hinesville, Georgia

DIFFERENTIAL PRESSURE DATA

		Well Designation:					
		MW-04	RW-02	MW-02	MW-05	MW-06	MW-03
Nearest Extraction Well:		RW-06	RW-04	RW-01	RW-05	RW-05	RW-01
Approximate Distance:		22 feet	30 feet	42 feet	42 feet	55 feet	90 feet
Time	Elapsed Time	Differential Pressure Readings (inches of water):					
8:45	1.0 hr.	-0.01	-0.14	0.00	-0.01	-0.01	0.00
9:45	2.0 hrs.	-0.01	-0.14	0.00	0.00	-0.15	0.00
10:45	3.0 hrs.	-0.03	-0.15	0.00	0.00	-0.02	0.00
11:45	4.0 hrs.	-0.03	-0.15	0.00	0.00	-0.02	0.00
12:45	5.0 hrs.	-	-0.15	0.00	0.00	-0.02	0.00
13:45	6.0 hrs.	-	-0.13	0.00	0.00	-0.01	0.00
Maximum Change:		-0.03	-0.15	0.00	-0.01	-0.15	0.00

GROUNDWATER DRAWDOWN DATA

		Well Designation:				
		RW-02	MW-02	MW-05	MW-06	MW-03
Nearest Extraction Well:		RW-04	RW-01	RW-05	RW-05	RW-01
Approximate Distance:		30 feet	42 feet	42 feet	55 feet	90 feet
Time	Elapsed Time	Depth to Liquid (feet below top of casing):				
Prior to EFR®		8.03	8.01	8.60	8.49	7.66
14:45	7.0 hrs.	9.62	8.19	8.73	8.84	7.74
Maximum Change:		-1.59	-0.18	-0.13	-0.35	-0.08

ECOVAC SERVICES
The World Leader in Mobile Dual-Phase/Multi-Phase Extraction and Patented SURFAC®/ISCO-EFR®/COSOLV® Technologies Treatability Studies/Research & Development

August 3, 2011

Mr. Doug Hawn
SpecPro Environmental
1006 Floyd Culler Court
Oak Ridge, Tennessee 37830
dhawn@specproenv.com

Subject: **Enhanced Fluid Recovery (EFR®) Results**
Event No. 2
Building 419
Fort Stewart, Georgia

Dear Mr. Hawn:

Please find attached the data summary for the second EFR® event conducted at the subject site on July 17, 2011. The initial EFR® event was conducted on June 12, 2011. The following summarizes the results of this EFR® event.

SUMMARY OF RESULTS

Separate-phase hydrocarbons (SPH) were detected in one monitor well (MW-04 - 0.46 feet) and four recovery wells (RW-01 - 0.05 feet, RW-04 – 2.26 feet, RW-05 – 2.59 feet, and RW-06 – 0.47 feet) prior to conducting this EFR® event. These SPH thicknesses are less than SPH thicknesses detected in RW-01 (0.25 feet), RW-04 (4.50 feet), RW-05 (3.79 feet), and RW-06 (1.02 feet) and greater than the SPH thickness detected in MW-04 (0.42 feet) prior to the initial event. This EFR® event was conducted for seven hours at five extraction points, consisting of the initial three hours of extraction at recovery wells RW-01, RW-04, RW-05, and RW-06. Monitor well MW-04 was added to the extraction array for the final four hours of this event. SPH was not detected in the extraction wells upon completion of the event.

A calculated total of 199 pounds of petroleum hydrocarbons (approximately 28 equivalent gallons of gasoline/diesel fuel) was removed during this EFR® event. This hydrocarbon recovery is greater than the recovery achieved during the initial event (a calculated total of 96 pounds of petroleum hydrocarbons - approximately 14 equivalent gallons of gasoline/diesel fuel).

The hydrocarbon removal rate ranged from 12 to 96 pounds per hour with a trend of decreasing removal rates throughout the event. This removal rate ranges higher than the removal rate attained during the initial event (12 to 16 pounds per hour).

Vapor concentrations ranged from 15,000 to 60,000 parts per million by volume (PPM_V) during this EFR® event, as compared to concentrations of 9,700 to 10,000 PPM_V detected during the initial event. Vapor flow rates ranged from 49 to 98 cubic feet per minute (CFM) throughout this event, as compared to flow rates of 78 to 98 measured during the initial event.

In-well vacuums recorded during this EFR® event are detailed on the EFR® Field Data Sheet and summarized below:

Extraction Well Location	Vacuum Reading
RW-01	15 inches of mercury
RW-04	12 inches of mercury
RW-05	10 inches of mercury
RW-06	14 inches of mercury
MW-04	8 inches of mercury

Differential pressures were recorded during this event to assess the vacuum influence induced by EFR® in the vadose zone. The differential pressure data are detailed in the attached data table and summarized below:

Monitor Well	Maximum Change	Nearest Extraction Well (Approx. Distance)
RW-02	-0.29 inch of water	RW-04 (34 feet)
MW-05	-0.10 inch of water	RW-05 (55 feet)
MW-02	0.00 inch of water	RW-01 (58 feet)
MW-06	0.00 inch of water	RW-05 (66 feet)
MW-03	-0.05 inch of water	RW-01 (160 feet)

Groundwater levels were recorded during this event to assess the groundwater drawdown created by EFR®. The drawdown data are detailed in the attached table and summarized below:

Monitor Well	Maximum Change	Nearest Extraction Well (Approx. Distance)
RW-02	-0.62 feet	RW-04 (34 feet)
MW-05	-0.60 feet	RW-05 (55 feet)
MW-02	-0.24 feet	RW-01 (58 feet)
MW-06	-0.46 feet	RW-05 (66 feet)
MW-03	-0.10 feet	RW-01 (160 feet)

Approximately 2,600 gallons of liquid were removed during this EFR® event and transported to Georgia Petroleum (Valdosta, Georgia) for disposal. SPH was not detected in the vacuum truck tank upon completion of the event.

Thank you for the continued opportunity to team with SpecPro in serving the environmental needs of your clients. We look forward to working with you again in the future to provide innovative and cost effective environmental solutions at this and other sites.

Sincerely,

EcoVac Services

David M. Goodrich

David M. Goodrich, P.G.

EFR® FIELD DATA SHEET

Client: SpecPro	Facility Name: Building 419	Event #: 2
Facility Address: Fort Stewart; Hinesville, Georgia	Technician: Wilson	Date: 7/17/11

Extraction Well(s)	Time hh:mm	Extraction Well-head Vacuum (in. Hg)									Vacuum Truck Exhaust				
		Inlet	RW-01	RW-04	RW-05	RW-06	MW-04				Concentration PPM	Offgas Velocity FT/MIN	Flow Rate CFM	Removal Rate LBS/HR	Interval Removal LBS
Start Time:	8:00														
RW-01,04,05,06	8:15	24	15	12	10	14	-				60,000	2,000	98	96	24
"	8:30	24	15	12	10	14	-				60,000	1,800	88	86	22
"	8:45	24	15	12	10	14	-				50,000	1,500	74	60	15
"	9:30	24	15	12	10	14	-				40,000	1,500	74	48	36
"	10:00	24	15	12	10	14	-				30,000	1,200	59	29	14
RW-01,04,05,06; MW-04	11:00	24	15	12	10	14	8				30,000	1,200	59	29	29
"	12:00	24	15	12	10	14	8				20,000	1,200	59	19	19
"	13:00	24	15	12	10	14	8				20,000	1,000	49	16	16
"	14:00	24	15	12	10	14	8				15,000	1,000	49	12	12
"	15:00	24	15	12	10	14	8				15,000	1,000	49	12	12

Well Gauging Data:			Before EFR® Event			After EFR® Event			Corr. DTW
Well No.	Diam.	TD (ft)	DTS (ft)	DTW (ft)	SPH (ft)	DTS (ft)	DTW (ft)	SPH (ft)	Change (ft)
MW-01	2"	13.71	-	7.31	0.00	-	7.41	0.00	-0.10
MW-02	2"	14.23	-	7.79	0.00	-	8.03	0.00	-0.24
MW-03	2"	13.73	-	7.49	0.00	-	7.59	0.00	-0.10
MW-04	2"	13.20	4.42	4.88	0.46	-	6.61	0.00	-2.08
MW-05	2"	13.79	-	8.05	0.00	-	8.65	0.00	-0.60
MW-06	2"	13.04	-	8.31	0.00	-	8.77	0.00	-0.46
RW-01	6"	15.92	8.41	8.46	0.05	-	11.51	0.00	-3.09
RW-02	2"	14.44	-	8.67	0.00	-	9.29	0.00	-0.62
RW-04	6"	15.41	7.79	10.05	2.26	-	11.63	0.00	-3.28
RW-05	6"	16.40	7.86	10.45	2.59	-	10.56	0.00	-2.05
RW-06	6"	10.31	5.80	6.27	0.47	-	8.26	0.00	-2.34

Vacuum Truck Information	
Subcontractor:	AllVac
Truck Operator:	Wilson
Truck No.:	149
Vacuum Pumps:	Becker
Pump Type:	Twin LC-44s
Tank Capacity (gal.):	2,894
Stack I.D. (inches)	3.0

Well ID	Breather Port	Stinger Depth
MW-04	0 (closed)	15 feet
RW-01	0 (closed)	15 feet
RW-04	0 (closed)	16 feet
RW-05	0 (closed)	10 feet
RW-06	0 (closed)	13 feet

Recovery/Disposal Information		
Hydrocarbons Removed (vapor):	199	pounds
Hydrocarbons Removed (liquid):	0	gallons
Total Hydrocarbons Removed:	28	equiv. gal.
Molecular Weight Utilized:	103	g/mole
Disposal Facility:	Georgia Petroleum	
Manifest Number:		
Total Liquids Removed:	2,600	gallons

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770-592-1001

Time:	8:00 to 15:00
# Pumps:	2
RPMs:	900
Time:	
# Pumps:	
RPMs:	

This event was terminated after 7 hours of extraction due to the vacuum truck tank reaching its maximum liquid weight capacity.

Differential Pressure and Groundwater Drawdown Data Recorded During EFR®
Event #: 2 Date: 7/17/11
Facility Name: Building 419
Facility Address: Fort Stewart; Hinesville, Georgia

DIFFERENTIAL PRESSURE DATA

		Well Designation:				
		RW-02	MW-05	MW-02	MW-06	MW-03
Nearest Extraction Well:		RW-04	RW-05	RW-01	RW-05	RW-01
Approximate Distance:		34 feet	55 feet	58 feet	66 feet	160 feet
Time	Elapsed Time	Differential Pressure Readings (inches of water):				
9:00	1.0 hr.	-0.23	-0.09	0.00	0.00	0.00
10:00	2.0 hrs.	-0.20	-0.07	0.00	0.00	-0.03
11:00	3.0 hrs.	-0.19	-0.07	0.00	0.00	-0.03
12:00	4.0 hrs.	-0.23	-0.05	0.00	0.00	-0.05
13:00	5.0 hrs.	-0.28	-0.09	0.00	0.00	0.00
14:00	6.0 hrs.	-0.29	-0.10	0.00	0.00	0.00
Maximum Change:		-0.29	-0.10	0.00	0.00	-0.05

GROUNDWATER DRAWDOWN DATA

		Well Designation:				
		RW-02	MW-05	MW-02	MW-06	MW-03
Nearest Extraction Well:		RW-04	RW-05	RW-01	RW-05	RW-01
Approximate Distance:		34 feet	55 feet	58 feet	66 feet	160 feet
Time	Elapsed Time	Depth to Liquid (feet below top of casing):				
Prior to EFR®		8.67	8.05	7.79	8.31	7.49
15:00	7.0 hrs.	9.29	8.65	8.03	8.77	7.59
Maximum Change:		-0.62	-0.60	-0.24	-0.46	-0.10

NON-HAZARDOUS WASTE MANIFEST

1. Generator ID Number | 2. Page 1 of | 3. Emergency Response Phone: 770-592-1001 | 4. Waste Tracking Number

5. Generator's Name and Mailing Address

Generator's Site Address (if different than mailing address): Ft Stewart Military Base Hinesville GA

Generator's Phone:

6. Transporter 1 Company Name: All Vac Service — U.S. EPA ID Number

7. Transporter 2 Company Name — U.S. EPA ID Number

8. Designated Facility Name and Site Address: Ga Petroleum Valdosta GA — U.S. EPA ID Number

Facility's Phone:

	9. Waste Shipping Name and Description	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	
1.	NON Haz Waste groundwater containing Petroleum Hydrocarbons	1	TT	2600	GAL	
2.						
3.						
4.						

13. Special Handling Instructions and Additional Information

14. GENERATOR'S CERTIFICATION: I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.

Generator's/Officer's Printed/Typed Name: on behalf of Spec Pro Mark Wilson — Signature: Mark Wil — Month 7 Day 17 Year 11

15. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:

Transporter Signature (for exports only): Date leaving U.S.:

16. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name: Mark Wilson — Signature: Mark Wilson — Month 7 Day 17 Year 11

Transporter 2 Printed/Typed Name — Signature — Month Day Year

17. Discrepancy

17a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

Manifest Reference Number:

17b. Alternate Facility (or Generator) — U.S. EPA ID Number

Facility's Phone:

17c. Signature of Alternate Facility (or Generator) — Month Day Year

18. Designated Facility Owner or Operator: Certification of receipt of materials covered by the manifest except as noted in Item 17a

Printed/Typed Name: Travis Howell — Signature: Travis Howell — Month 7 Day 18 Year 11

GENERATOR | INT'L | TRANSPORTER | DESIGNATED FACILITY

169-BLC-O 5 11977 (Rev. 8/06) DESIGNATED FACILITY TO GENERATOR

ECOVAC SERVICES
The World Leader in Mobile Dual-Phase/Multi-Phase Extraction and Patented SURFAC®/ISCO-EFR®/COSOLV® Technologies Treatability Studies/Research & Development

August 10, 2011

Mr. Doug Hawn
SpecPro Environmental
1006 Floyd Culler Court
Oak Ridge, Tennessee 37830
dhawn@specproenv.com

Subject: **Enhanced Fluid Recovery (EFR®) Results**
Event No. 3
Building 419
Fort Stewart, Georgia

Dear Mr. Hawn:

Please find attached the data summary for the third EFR® event conducted at the subject site on August 6, 2011. Previous EFR® events have been conducted on June 12, 2011 and July 17, 2011. The following summarizes the results of this EFR® event.

SUMMARY OF RESULTS

Separate-phase hydrocarbons (SPH) were detected in one monitor well (MW-04 - 0.35 feet) and three recovery wells (RW-04 – 1.40 feet, RW-05 – 1.05 feet, and RW-06 – 0.47 feet) prior to conducting this EFR® event. These SPH thicknesses and/or absence of SPH are less than SPH thicknesses detected in MW-04 (0.46 feet), RW-01 (0.05 feet), RW-04 (2.26 feet), and RW-05 (2.59 feet) and equal to the SPH thickness detected in RW-06 (0.47 feet) prior to the second event. This EFR® event was conducted for eight hours at four extraction points, consisting of monitor well MW-04 and recovery wells RW-04, RW-05, and RW-06. SPH was not detected in the extraction wells upon completion of the event.

A calculated total of 316 pounds of petroleum hydrocarbons (approximately 48 equivalent gallons of gasoline/diesel fuel) was removed during this EFR® event. This hydrocarbon recovery is greater than the recovery achieved during the second event (a calculated total of 187 pounds of petroleum hydrocarbons - approximately 26 equivalent gallons of gasoline/diesel fuel) and initial event (a calculated total of 96 pounds of petroleum hydrocarbons - approximately 14 equivalent gallons of gasoline/diesel fuel).

The hydrocarbon removal rate ranged from 12 to 96 pounds per hour with a trend of decreasing removal rates throughout the event. This range of removal rates is equal to the range of removal rates attained during the second event (12 to 96 pounds per hour) and higher than the range of removal rates attained during the initial event (12 to 16 pounds per hour).

Vapor concentrations ranged from 6,000 to 60,000 parts per million by volume (PPM_V) during this EFR® event, as compared to concentrations of 9,700 to 60,000 PPM_V detected during previous events. Vapor flow rates ranged from 98 to 118 cubic feet per minute (CFM) throughout this event, as compared to flow rates of 48 to 98 measured during previous events.

In-well vacuums recorded during this EFR® event are detailed on the EFR® Field Data Sheet and summarized below:

Extraction Well Location	Vacuum Reading
MW-04	14 inches of mercury
RW-04	12 inches of mercury
RW-05	10 inches of mercury
RW-06	14 to 15 inches of mercury

Differential pressures were recorded during this event to assess the vacuum influence induced by EFR®. The differential pressure data are detailed in the attached data table and summarized below:

Monitor Well	Maximum Change	Nearest Extraction Well (Approx. Distance)
RW-01	-1.31 inches of water	RW-04 (34 feet)
RW-02	-0.11 inch of water	RW-04 (34 feet)
RW-03	-0.54 inch of water	RW-04 (35 feet)
MW-05	-0.06 inch of water	RW-05 (55 feet)
MW-06	-0.01 inch of water	RW-05 (66 feet)

Groundwater levels were recorded during this event to assess the groundwater drawdown created by EFR®. The drawdown data are detailed in the attached table and summarized below:

Monitor Well	Maximum Change	Nearest Extraction Well (Approx. Distance)
RW-01	-1.59 feet	RW-04 (34 feet)
RW-02	-0.69 feet	RW-04 (34 feet)
RW-03	-0.95 feet	RW-04 (35 feet)
MW-05	-0.92 feet	RW-05 (55 feet)
MW-06	-0.52 feet	RW-05 (66 feet)

Approximately 2,494 gallons of liquid were removed during this EFR® event and transported to Georgia Petroleum (Valdosta, Georgia) for disposal. SPH was not detected in the vacuum truck tank upon completion of the event.

Thank you for the continued opportunity to team with SpecPro in serving the environmental needs of your clients. We look forward to working with you again in the future to provide innovative and cost effective environmental solutions at this and other sites.

Sincerely,

EcoVac Services

David M. Goodrich

David M. Goodrich, P.G.

EFR® FIELD DATA SHEET

Client: SpecPro	Facility Name: Building 419	Event #: 3
Facility Address: Fort Stewart; Hinesville, Georgia	Technician: Wilson	Date: 8/6/11

Extraction Well(s)	Time hh:mm	Extraction Well-head Vacuum (in. Hg)									Vacuum Truck Exhaust				
Start Time:	9:00	Inlet	MW-04	RW-04	RW-05	RW-06					Concentration PPM	Offgas Velocity FT/MIN	Flow Rate CFM	Removal Rate LBS/HR	Interval Removal LBS
MW-04;RW-04,05,06	9:15	25	14	12	10	15					56,000	2,000	98	89	22
"	9:30	25	14	12	10	15					56,000	2,000	98	89	22
"	9:45	25	14	12	10	15					60,000	2,000	98	96	24
"	10:00	25	14	12	10	15					54,000	2,200	108	95	24
"	10:30	25	14	12	10	15					48,000	2,200	108	84	42
"	11:00	25	14	12	10	15					32,000	2,200	108	56	28
"	12:00	25	14	12	10	14					28,000	2,200	108	49	49
"	13:00	25	14	12	10	14					20,000	2,200	108	35	35
"	14:00	25	14	12	10	14					12,000	2,400	118	23	23
"	15:00	25	14	12	10	14					10,000	2,400	118	19	19
"	16:00	25	14	12	10	14					8,000	2,400	118	15	15
"	17:00	25	14	12	10	14					6,000	2,400	118	12	12

Well Gauging Data:			Before EFR® Event			After EFR® Event			Corr. DTW
Well No.	Diam.	TD (ft)	DTS (ft)	DTW (ft)	SPH (ft)	DTS (ft)	DTW (ft)	SPH (ft)	Change (ft)
MW-01	2"	13.71	-	7.26	0.00	-	7.54	0.00	-0.28
MW-02	2"	14.23	-	7.62	0.00	-	7.76	0.00	-0.14
MW-03	2"	13.73	-	8.86	0.00	-	8.88	0.00	-0.02
MW-04	2"	13.2	4.59	4.94	0.35	-	7.47	0.00	-2.79
MW-05	2"	13.79	-	8.06	0.00	-	8.98	0.00	-0.92
MW-06	2"	13.04	-	8.35	0.00	-	8.87	0.00	-0.52
RW-01	6"	15.92	-	8.05	0.00	-	9.64	0.00	-1.59
RW-02	2"	14.44	-	8.70	0.00	-	9.39	0.00	-0.69
RW-03	2"		-	8.48	0.00	-	9.43	0.00	-0.95
RW-04	6"	15.41	7.99	9.39	1.40	-	11.56	0.00	-3.22
RW-05	6"	16.4	8.04	9.09	1.05	-	10.98	0.00	-2.68
RW-06	6"	10.31	5.96	6.43	0.47	-	8.99	0.00	-2.91

Vacuum Truck Information	
Subcontractor:	AllVac
Truck Operator:	Kessler
Truck No.:	151
Vacuum Pumps:	Becker
Pump Type:	Twin LC-44s
Tank Capacity (gal.):	2,894
Stack I.D. (inches)	3.0

Well ID	Breather Port	Stinger Depth
MW-04	0 (closed)	7 feet
RW-01	0 (closed)	10 feet
RW-04	0 (closed)	11 feet
RW-05	0 (closed)	10.5 feet
RW-06	0 (closed)	8 feet

Recovery/Disposal Information		
Hydrocarbons Removed (vapor):	316	pounds
Hydrocarbons Removed (liquid):	0	gallons
Total Hydrocarbons Removed:	48	equiv. gal.
Molecular Weight Utilized:	103	g/mole
Disposal Facility:	Georgia Petroleum	
Manifest Number:	1518611 - 24274	
Total Liquids Removed:	2,494	gallons

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770-592-1001

Time:	9:00 to 17:00
# Pumps:	2
RPMs:	1,000
Time:	
# Pumps:	
RPMs:	

Differential Pressure and Groundwater Drawdown Data Recorded During EFR®
Event #: 3 Date: 8/6/11
Facility Name: Building 419
Facility Address: Fort Stewart; Hinesville, Georgia

DIFFERENTIAL PRESSURE DATA

		Well Designation:				
		RW-01	RW-02	RW-03	MW-05	MW-06
Nearest Extraction Well:		RW-04	RW-04	RW-04	RW-05	RW-05
Approximate Distance:		34 feet	34 feet	35 feet	55 feet	66 feet
Time	Elapsed Time	Differential Pressures (inches of water):				
10:00	1.0 hr.	-1.22	-0.09	-0.50	-0.02	0.00
11:00	2.0 hrs.	-1.31	-0.11	-0.54	-0.06	0.00
12:00	3.0 hrs.	-1.15	-0.06	-0.48	-0.05	0.00
13:00	4.0 hrs.	-1.11	-0.03	-0.48	-0.02	0.06
14:00	5.0 hrs.	-1.15	-0.05	-0.50	-0.02	0.00
15:00	6.0 hrs.	-1.17	-0.07	-0.52	-0.03	-0.01
16:00	7.0 hrs.	-1.18	-0.08	-0.54	-0.05	0.00
Maximum Change:		-1.31	-0.11	-0.54	-0.06	-0.01

GROUNDWATER DRAWDOWN DATA

		Well Designation:				
		RW-01	RW-02	RW-03	MW-05	MW-06
Nearest Extraction Well:		RW-04	RW-04	RW-04	RW-05	RW-05
Approximate Distance:		34 feet	34 feet	35 feet	55 feet	66 feet
Time	Elapsed Time	Depth to Liquid (feet below top of casing):				
Prior to EFR®		8.05	8.70	8.48	8.06	8.35
17:00	8.0 hrs.	9.64	9.39	9.43	8.98	8.87
Maximum Change:		-1.59	-0.69	-0.95	-0.92	-0.52

CUMULATIVE EFR® DATA TABLE

Building 419
Fort Stewart, Georgia

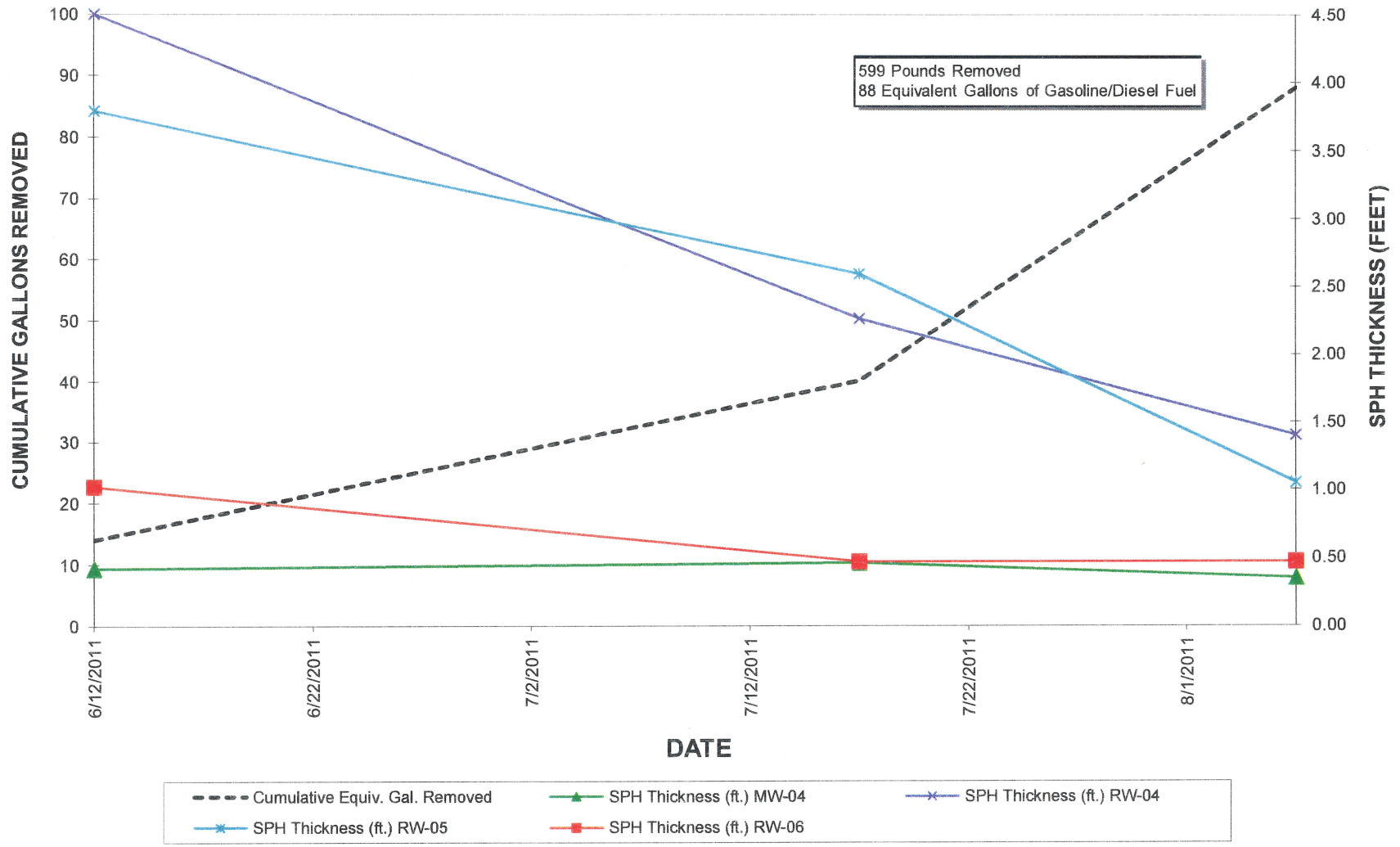
	6/12/2011	7/17/2011	8/6/2011
SPH Thickness (ft.) MW-04	0.42	0.46	0.35
SPH Thickness (ft.) RW-01	0.25	0.05	0.00
SPH Thickness (ft.) RW-04	4.50	2.26	1.40
SPH Thickness (ft.) RW-05	3.79	2.59	1.05
SPH Thickness (ft.) RW-06	1.02	0.47	0.47
Liquid Removed/Event (Gal.)	2,573	2,578	2,494
Cumulative Liquid Removed (Gal.)	2,573	5,151	7,645
Pounds Removed/Event	96	187	316
Cumulative Pounds Removed	96	283	599
Equiv. Gal. Gasoline Removed/Event	14	26	48
Cumulative Equiv. Gal. Removed	14	40	88

Last Update: 8/11/2011

E0209.0007

CUMULATIVE EFR® GRAPH

Building 419
Fort Stewart, Georgia



D-15

10/27/11

Last Update: 8/11/2011

Georgia Petroleum, Inc.

NON-HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.

Manifest Document No.

2. Page 1 of 1

M- 24274

3. Generator's Name and Mailing Address
US ARMY - FT STEWART
1557 FRANK COCHRAN DR
FT STEWART, GA 31314

2934-016

4. Generator's Phone (912) 876-2010

5. Transporter 1 Company Name
ECO VAC SERVICES

6. US EPA ID No.

A. Transporter's Phone
770-592-1001

7. Transporter 2 Company Name

8. US EPA ID No.

B. Transporter's Phone

9. Designated Facility Name and Site Address
Georgia Petroleum, Inc.
1620 James P. Rodgers Drive
Valdosta, Georgia 31601

10. US EPA ID No.
GAD# 981222433

C. Facility's Phone
229-244-9110

11. Waste Shipping Name and Description	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol
a. WASTE WATER, DOT & RCRA NON-REGULATED	1	TT	2,494	GAL
b.				
c.				
d.				

D. Additional Descriptions for Materials Listed Above
API _____ VIS _____ BSW _____
CHLOR _____

E. Handling Codes for Waste Listed Above

15. Special Handling Instructions and Additional Information
In the event of an emergency call 229-244-9110 Mon - Fri 8-5
GROSS 2494
BSW 0
NET 2494

16. GENERATOR'S CERTIFICATION: I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.

Printed/Typed Name | Signature | Month | Day | Year

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name: All Vac Services William Kressler | Signature | Month: 08 | Day: 08 | Year: 11

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name | Signature | Month | Day | Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of waste materials covered by this manifest except as noted on item 19.

Printed/Typed Name: Venus Martin | Signature: Venus Martin | Month: 8 | Day: 8 | Year: 11

GENERATOR — TRANSPORTER — FACILITY

ORIGINAL RETURN TO GENERATOR

Appendix E

Soil and Groundwater Analytical Results

SDG: 1104178 Project: FTC Bldg 419

Method: Semivolatiles 8270C Matrix/No. Samples: Water--7

Validation Samples: MW-03-03 MW-05-05 MW-04-04
MW-02-02 MW-05-059
MW-01-01 MW-06-06

Data Validation Report Summary

		Status Code	Comments
1.	Sample Preservation, Handling, and Transport	A	
2.	Chain of Custody	A	
3.	Holding Times	A	
4.	GC/MS Tune/Inst Perf	A	
5.	Calibrations	A	
6.	Blanks	X	
7.	Blank Spike/LCS	A	
8.	Matrix Spike	A	See comment # 1
9.	Surrogates	X	
10.	Internal Standards	A	
11.	Compound Identification	A	
12.	System Performance	A	
13.	Field QC Samples	X	
14.	Overall Assessment	X	

Status Codes:
A = Acceptable
R = Data Rejected
X = Data acceptable but qualified due to problems

Qualifications:

7a • Low surrogate recoveries in samples mw-03-03, mw-02-02 and mw-04-04 resulted in "UJ/J" qualifiers - this was due to the presence of some matrix interference - the laboratory noted the formation of an emulsion during the prep phase for these 3 samples.

6c • The presence of 1-methylnaphthalene & 2-methylnaphthalene in the rinsate blanks resulted "U" qualifiers for these 2 cpds in sample mw-04-04

Significant Findings/Recommendations:

#J benzo(a)anthracene had a low ms recovery, the msd recovery as well as the lcs recovery was acceptable - no quals were required.

Overall Data Quality:

Acceptable as qualified.

Validator's Signature: Thomas Kitchings Date: 5/3/2011

ANALYSIS DATA SHEET

MW-03-03

Laboratory:	Empirical Laboratories, LLC			SDG:	1104178
Client:	SES, Inc. (S750)			Project:	FTS UST 2008-2010
Matrix:	Ground Water	Laboratory ID:	1104178-01	File ID:	0417801.D
Sampled:	04/12/11 09:40	Prepared:	04/18/11 14:45	Analyzed:	04/24/11 02:45
Solids:		Preparation:	EXT_3510	Dilution:	1
Batch:	1D16012	Sequence:	1D11510	Calibration:	1112002
				Instrument:	MS-BNA4

CAS NO.	COMPOUND	CONC. (ug/L)	MDL	MRL	Q
83-32-9	Acenaphthene		0.0463	0.185	U
208-96-8	Acenaphthylene		0.0463	0.185	U
120-12-7	Anthracene		0.0463	0.185	U
56-55-3	Benzo(a)anthracene		0.0463	0.185	U
50-32-8	Benzo(a)pyrene		0.0463	0.185	U
205-99-2	Benzo(b)fluoranthene		0.0463	0.185	U
191-24-2	Benzo(g,h,i)perylene		0.0463	0.185	U
207-08-9	Benzo(k)fluoranthene		0.0463	0.185	U
218-01-9	Chrysene		0.0463	0.185	U
53-70-3	Dibenz(a,h)anthracene		0.0463	0.185	U
206-44-0	Fluoranthene		0.0463	0.185	U
86-73-7	Fluorene		0.0463	0.185	U
193-39-5	Indeno(1,2,3-cd)pyrene		0.0463	0.185	U
90-12-0	1-Methylnaphthalene		0.0463	0.185	U
91-57-6	2-Methylnaphthalene		0.0463	0.185	U
91-20-3	Naphthalene		0.0463	0.185	U
85-01-8	Phenanthrene		0.0463	0.185	U
129-00-0	Pyrene	0.0563	0.0463	0.185	J

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
2-Fluorobiphenyl	46.30	15.38	33.2	34 - 167	*
Terphenyl-d14	46.30	6.514	14.1	34 - 167	*

Rev Qual
UJ 7a

J 7a

ANALYSIS DATA SHEET

MW-02-02

Laboratory:	Empirical Laboratories, LLC		SDG:	1104178	
Client:	SES, Inc. (S750)		Project:	FTS UST 2008-2010	
Matrix:	Ground Water	Laboratory ID:	1104178-02	File ID:	0417802.D
Sampled:	04/12/11 09:40	Prepared:	04/18/11 14:45	Analyzed:	04/24/11 03:10
Solids:		Preparation:	EXT 3510	Dilution:	1
Batch:	1D16012	Sequence:	1D11510	Calibration:	1112002
Instrument:	MS-BNA4				

Rev 2/4/11 UJ 79

CAS NO.	COMPOUND	CONC. (ug/L)	MDL	MRL	Q
83-32-9	Acenaphthene		0.0472	0.189	U
208-96-8	Acenaphthylene		0.0472	0.189	U
120-12-7	Anthracene		0.0472	0.189	U
56-55-3	Benzo(a)anthracene		0.0472	0.189	U
50-32-8	Benzo(a)pyrene		0.0472	0.189	U
205-99-2	Benzo(b)fluoranthene		0.0472	0.189	U
191-24-2	Benzo(g,h,i)perylene		0.0472	0.189	U
207-08-9	Benzo(k)fluoranthene		0.0472	0.189	U
218-01-9	Chrysene		0.0472	0.189	U
53-70-3	Dibenz(a,h)anthracene		0.0472	0.189	U
206-44-0	Fluoranthene		0.0472	0.189	U
86-73-7	Fluorene		0.0472	0.189	U
193-39-5	Indeno(1,2,3-cd)pyrene		0.0472	0.189	U
90-12-0	1-Methylnaphthalene		0.0472	0.189	U
91-57-6	2-Methylnaphthalene		0.0472	0.189	U
91-20-3	Naphthalene		0.0472	0.189	U
85-01-8	Phenanthrene		0.0472	0.189	U
129-00-0	Pyrene		0.0472	0.189	U

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
2-Fluorobiphenyl	47.17	8.605	18.2	34 - 167	*
Terphenyl-d14	47.17	4.670	9.90	34 - 167	*

ANALYSIS DATA SHEET

MW-01-01

Laboratory:	Empirical Laboratories, LLC			SDG:	1104178
Client:	SES, Inc. (S750)			Project:	FTS UST 2008-2010
Matrix:	Ground Water	Laboratory ID:	1104178-03	File ID:	0417803.D
Sampled:	04/12/11 12:10	Prepared:	04/18/11 14:45	Analyzed:	04/24/11 03:35
Solids:		Preparation:	EXT_3510	Dilution:	1
Batch:	1D16012	Sequence:	1D11510	Calibration:	1112002
Instrument:	MS-BNA4				

RW Qual U

CAS NO.	COMPOUND	CONC. (ug/L)	MDL	MRL	Q
83-32-9	Acenaphthene		0.0463	0.185	U
208-96-8	Acenaphthylene		0.0463	0.185	U
120-12-7	Anthracene		0.0463	0.185	U
56-55-3	Benzo(a)anthracene		0.0463	0.185	U
50-32-8	Benzo(a)pyrene		0.0463	0.185	U
205-99-2	Benzo(b)fluoranthene		0.0463	0.185	U
191-24-2	Benzo(g,h,i)perylene		0.0463	0.185	U
207-08-9	Benzo(k)fluoranthene		0.0463	0.185	U
218-01-9	Chrysene		0.0463	0.185	U
53-70-3	Dibenz(a,h)anthracene		0.0463	0.185	U
206-44-0	Fluoranthene		0.0463	0.185	U
86-73-7	Fluorene		0.0463	0.185	U
193-39-5	Indeno(1,2,3-cd)pyrene		0.0463	0.185	U
90-12-0	1-Methylnaphthalene		0.0463	0.185	U
91-57-6	2-Methylnaphthalene		0.0463	0.185	U
91-20-3	Naphthalene		0.0463	0.185	U
85-01-8	Phenanthrene		0.0463	0.185	U
129-00-0	Pyrene		0.0463	0.185	U

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
2-Fluorobiphenyl	46.30	18.51	40.0	34 - 167	
Terphenyl-d14	46.30	20.49	44.3	34 - 167	

ANALYSIS DATA SHEET

MW-05-05

Laboratory:	Empirical Laboratories, LLC			SDG:	1104178
Client:	SES, Inc. (S750)			Project:	FTS UST 2008-2010
Matrix:	Ground Water	Laboratory ID:	1104178-04	File ID:	0417804.D
Sampled:	04/12/11 14:25	Prepared:	04/18/11 14:45	Analyzed:	04/24/11 03:59
Solids:		Preparation:	EXT_3510	Dilution:	1
Batch:	1D16012	Sequence:	1D11510	Calibration:	1112002
				Instrument:	MS-BNA4

Rw Qual u

CAS NO.	COMPOUND	CONC. (ug/L)	MDL	MRL	Q
83-32-9	Acenaphthene		0.0463	0.185	U
208-96-8	Acenaphthylene		0.0463	0.185	U
120-12-7	Anthracene		0.0463	0.185	U
56-55-3	Benzo(a)anthracene		0.0463	0.185	U
50-32-8	Benzo(a)pyrene		0.0463	0.185	U
205-99-2	Benzo(b)fluoranthene		0.0463	0.185	U
191-24-2	Benzo(g,h,i)perylene		0.0463	0.185	U
207-08-9	Benzo(k)fluoranthene		0.0463	0.185	U
218-01-9	Chrysene		0.0463	0.185	U
53-70-3	Dibenz(a,h)anthracene		0.0463	0.185	U
206-44-0	Fluoranthene		0.0463	0.185	U
86-73-7	Fluorene		0.0463	0.185	U
193-39-5	Indeno(1,2,3-cd)pyrene		0.0463	0.185	U
90-12-0	1-Methylnaphthalene		0.0463	0.185	U
91-57-6	2-Methylnaphthalene		0.0463	0.185	U
91-20-3	Naphthalene		0.0463	0.185	U
85-01-8	Phenanthrene		0.0463	0.185	U
129-00-0	Pyrene		0.0463	0.185	U

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
2-Fluorobiphenyl	46.30	29.80	64.4	34 - 167	
Terphenyl-d14	46.30	39.57	85.5	34 - 167	

ANALYSIS DATA SHEET

MW-05-059

Laboratory:	Empirical Laboratories, LLC			SDG:	1104178
Client:	SES, Inc. (S750)			Project:	FTS UST 2008-2010
Matrix:	Ground Water	Laboratory ID:	1104178-05	File ID:	0417805.D
Sampled:	04/12/11 14:25	Prepared:	04/18/11 14:45	Analyzed:	04/24/11 04:25
Solids:		Preparation:	EXT_3510	Dilution:	1
Batch:	1D16012	Sequence:	1D11510	Calibration:	1112002

Instrument: MS-BNA4

Rev Qual U

CAS NO.	COMPOUND	CONC. (ug/L)	MDL	MRL	Q
83-32-9	Acenaphthene		0.0467	0.187	U
208-96-8	Acenaphthylene		0.0467	0.187	U
120-12-7	Anthracene		0.0467	0.187	U
56-55-3	Benzo(a)anthracene		0.0467	0.187	U
50-32-8	Benzo(a)pyrene		0.0467	0.187	U
205-99-2	Benzo(b)fluoranthene		0.0467	0.187	U
191-24-2	Benzo(g,h,i)perylene		0.0467	0.187	U
207-08-9	Benzo(k)fluoranthene		0.0467	0.187	U
218-01-9	Chrysene		0.0467	0.187	U
53-70-3	Dibenz(a,h)anthracene		0.0467	0.187	U
206-44-0	Fluoranthene		0.0467	0.187	U
86-73-7	Fluorene		0.0467	0.187	U
193-39-5	Indeno(1,2,3-cd)pyrene		0.0467	0.187	U
90-12-0	1-Methylnaphthalene		0.0467	0.187	U
91-57-6	2-Methylnaphthalene		0.0467	0.187	U
91-20-3	Naphthalene		0.0467	0.187	U
85-01-8	Phenanthrene		0.0467	0.187	U
129-00-0	Pyrene		0.0467	0.187	U

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
2-Fluorobiphenyl	46.73	29.66	63.5	34 - 167	
Terphenyl-d14	46.73	43.52	93.1	34 - 167	

ANALYSIS DATA SHEET

MW-06-06

Laboratory:	Empirical Laboratories, LLC			SDG:	1104178
Client:	SES, Inc. (S750)			Project:	FTS UST 2008-2010
Matrix:	Ground Water	Laboratory ID:	1104178-06	File ID:	0417806.D
Sampled:	04/12/11 14:50	Prepared:	04/18/11 14:45	Analyzed:	04/24/11 04:49
Solids:		Preparation:	EXT_3510	Dilution:	1
Batch:	1D16012	Sequence:	1D11510	Calibration:	1112002
				Instrument:	MS-BNA4

Rev Qual u

CAS NO.	COMPOUND	CONC. (ug/L)	MDL	MRL	Q
83-32-9	Acenaphthene		0.100	0.400	U
208-96-8	Acenaphthylene		0.100	0.400	U
120-12-7	Anthracene		0.100	0.400	U
56-55-3	Benzo(a)anthracene		0.100	0.400	N, U
50-32-8	Benzo(a)pyrene		0.100	0.400	U
205-99-2	Benzo(b)fluoranthene		0.100	0.400	U
191-24-2	Benzo(g,h,i)perylene		0.100	0.400	N, U
207-08-9	Benzo(k)fluoranthene		0.100	0.400	U
218-01-9	Chrysene		0.100	0.400	U
53-70-3	Dibenz(a,h)anthracene		0.100	0.400	N, U
206-44-0	Fluoranthene		0.100	0.400	U
86-73-7	Fluorene		0.100	0.400	U
193-39-5	Indeno(1,2,3-cd)pyrene		0.100	0.400	N, U
90-12-0	1-Methylnaphthalene		0.100	0.400	U
91-57-6	2-Methylnaphthalene		0.100	0.400	U
91-20-3	Naphthalene		0.100	0.400	U
85-01-8	Phenanthrene		0.100	0.400	U
129-00-0	Pyrene		0.100	0.400	U

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
2-Fluorobiphenyl	100.0	69.62	69.6	34 - 167	
Terphenyl-d14	100.0	78.97	79.0	34 - 167	

ANALYSIS DATA SHEET

MW-04-04

Laboratory:	Empirical Laboratories, LLC			SDG:	1104178
Client:	SES, Inc. (S750)			Project:	FTS UST 2008-2010
Matrix:	Ground Water	Laboratory ID:	1104178-07	File ID:	0417807.D
Sampled:	04/12/11 16:40	Prepared:	04/18/11 14:45	Analyzed:	04/24/11 06:04
Solids:		Preparation:	EXT_3510	Dilution:	1
Batch:	1D16012	Sequence:	1D11510	Calibration:	1112002
				Instrument:	MS-BNA4

CAS NO.	COMPOUND	CONC. (ug/L)	MDL	MRL	Q	Rev Qual
83-32-9	Acenaphthene		0.0463	0.185	U	UJ 7a
208-96-8	Acenaphthylene		0.0463	0.185	U	
120-12-7	Anthracene		0.0463	0.185	U	
56-55-3	Benzo(a)anthracene		0.0463	0.185	U	
50-32-8	Benzo(a)pyrene		0.0463	0.185	U	
205-99-2	Benzo(b)fluoranthene		0.0463	0.185	U	
191-24-2	Benzo(g,h,i)perylene		0.0463	0.185	U	
207-08-9	Benzo(k)fluoranthene		0.0463	0.185	U	
218-01-9	Chrysene		0.0463	0.185	U	
53-70-3	Dibenz(a,h)anthracene		0.0463	0.185	U	
206-44-0	Fluoranthene		0.0463	0.185	U	
86-73-7	Fluorene		0.0463	0.185	U	
193-39-5	Indeno(1,2,3-cd)pyrene		0.0463	0.185	U	
90-12-0	1-Methylnaphthalene	0.414	0.0463	0.185		U 6C
91-57-6	2-Methylnaphthalene	0.110	0.0463	0.185	J	U 6C
91-20-3	Naphthalene		0.0463	0.185	U	UJ 7a
85-01-8	Phenanthrene		0.0463	0.185	U	UJ 7a
129-00-0	Pyrene	0.139	0.0463	0.185	J	J 7a

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
2-Fluorobiphenyl	46.30	7.022	15.2	34 - 167	*
Terphenyl-d14	46.30	2.250	4.86	34 - 167	*

DATA VALIDATION WORKSHEETS
SEMIVOLATILE ORGANICS

Reviewer: Kitchings **Date:** 5/3

Project: RTC-419 **SDG:** 1104178 **Matrix/No. Samples:** W-7

I.	**Technical Holding Times**			
A.	**Sample Preservation, Handling and Transport**			
	1. Have all samples been preserved correctly?	Yes	No	N/A
	2. Have sample temperatures been kept at 4° C (+ or - 2 °)?	Yes	No	N/A
	3. Were all samples received in proper condition?	Yes	No	N/A
	4. Were any qualifications required based on this information?	Yes	No	N/A
	Coolers @ 2.5, 4.0			
B.	**Chain of Custody**			
	1. Were all samples properly recorded on COCs?	Yes	No	N/A
	2. Were correct analyses performed on samples?	Yes	No	N/A
C.	**Holding Times**			
	1. Were samples extracted and analyzed within acceptable holding times?	Yes	No	N/A
	2. Were any qualifications required based on this information?	Yes	No	N/A

SAMPLED	PREPPED	ANALYZED
4/12	4/18	4/24

II.	**GC/MS Instrument Performance Check**			
	1. Were instrument performance check samples run for each analysis period?	Yes	No	N/A
	2. Were ion abundance criteria met for DTFPP analysis?	Yes	No	N/A
	3. Do laboratory forms match raw data?	Yes	No	N/A
	4. Were any qualifications required based on this information?	Yes	No	N/A

Comments/Qualifications:

ICAL 4/19@14:38 CCAL 4/24@ 00:20

198 base

all criteria met.

DATA VALIDATION WORKSHEETS
SEMIVOLATILE ORGANICS

Reviewer: Kitchings **Date:** 5/3

Project: FTC-419 **SDG:** 1104178 **Matrix/No. Samples:** W-7

III.	Initial Calibration			
	1. Were correct concentrations of standards used for initial calibration? Were samples analyzed within 12 hours of associated instrument performance check?	Yes	No	N/A
	2. Were initial calibration RRFs for all volatile target compounds and system monitoring compounds >or = 0.05? Do recalculations for RRFs agree with reported values?	Yes	No	N/A
	3. Were %RSDs < or = 30% for all volatile target compounds? Do recalculations for RSDs agree with reported values?	Yes	No	N/A
	4. Were any qualifications required based on this information?	Yes	No	N/A

Comments/Qualifications:

4/19@14:56

dibenz.

RRFs. >0.7

RSDs. <30%

.950
.747
.740
.684
.794
.793
.820
.728
.843 / 7.098 / 9 = .789

.02592
176
240
1166
5
2
96 = .0786 / .789 = 10%
372
292
.04941 / 8

IV.	Continuing Calibration			
	1. Were continuing calibration samples run at the required frequency, and compared to the correct initial calibration?	Yes	No	N/A
	2. Did calculations from raw data agree with laboratory reported values for RRF and %D?	Yes	No	N/A
	3. Were continuing calibration RRFs for volatile organic compounds and system monitoring compounds (surrogates) > or = 0.05?	Yes	No	N/A
	4. Were %D between initial calibration RRF and the continuing calibration RRFs within + or - 25%?	Yes	No	N/A
	5. Were any qualifications required based on this information?	Yes	No	N/A

Comments/Qualifications:

4/24 00:39

<20%.

Acenaph. $\frac{0.817 - 0.713}{0.817} = 12.7\%$

Fluorene. $\frac{0.807 - 0.771}{0.807} = 4.5\%$

DATA VALIDATION WORKSHEETS
SEMIVOLATILE ORGANICS

Reviewer: Kitchings **Date:** 5/3

Project: FTC-419 **SDG:** 1104178 **Matrix/No. Samples:** W-7

V.	**Blanks**			
	1. Were any target or non-target compounds reported in laboratory prep or calibration blanks?	Yes	(No)	N/A
	2. Were method blank analyses performed at required frequency, and for each GC/MS system used to analyze samples for each type of analysis (i.e., matrix)?	(Yes)	No	N/A
	3. Were any qualifications required based on this information?	Yes	(No)	N/A
	Comments/Qualifications: Blk. 1601R 4/21 - U's			
VI.	**System Monitoring Compounds (Surrogate Spikes)**			
	1. Were laboratory surrogate recoveries calculated and reported correctly?	(Yes)	No	N/A
	2. Were surrogate recoveries within acceptable limits?	Yes	(No)	N/A
	3. Were any qualifications required based on surrogate spike QC information?	(Yes)	No	N/A
	Comments/Qualifications: 8-6 -03, -02, -04 } low = UJ/J; 1: (4.86) 93.1; 2: (15.2) 69.6			
VII.	**Matrix Spikes/Matrix Spike Duplicates**			
	1. Were MS/MSD samples analyzed at required frequency for each ample matrix?	(Yes)	No	N/A
	2. Were MS/MSD results for recovery and RPD within advisory limits?	Yes	(No)	N/A
	3. Were Samples used for MS/MSD field blanks?	Yes	(No)	N/A
	4. Were laboratory reported results correctly calculated from raw data?	Yes	No	(N/A)
	5. Were any qualifications required, based on results of MS/MSD samples in conjunction with other QC information?	Yes	(No)	N/A
	Comments/Qualifications: low MS (52.7) -74.7; -06-06; 17-1; 18.0; 15-3; Chrysene .5692/.7144/.9259 = 61.5% = 77.2; b(ghi) 53.8, dibenz 54.6, Ind. 58.2 } high RPD's; RPD .1452/.6418 = 22.6%			

DATA VALIDATION WORKSHEETS
SEMIVOLATILE ORGANICS

Reviewer: Kitchings **Date:** 5/3

Project: FTC-419 **SDG:** 1104178 **Matrix/No. Samples:** W-7

VIII.	Laboratory Control Sample (LCS)			
	1. Were LCS samples run at correct frequency for each matrix samples?	(Yes)	No	N/A
	2. Were LCS calculations performed correctly, and did laboratory reported values match raw data? Were recoveries within laboratory QC limits?	(Yes)	No	N/A
	4. Were any qualifications required based on LCS data in conjunction with other QC information?	Yes	(No)	N/A

Comments/Qualifications:

18-0 70.5 - 129.0

b(a)pyrene $\frac{.8648}{1.000} = 86.5\%$

phenanth. $\frac{.9792}{1000} = 97.9\%$

IX.	Internal Standards			
	1. Were standard area counts within a factor of two (-50% to +100%) from associated calibration standard?	(Yes)	No	N/A
	2. Were retention times of internal standard within + or - 30 seconds of retention time of associated calibration check?	(Yes)	No	N/A
	3. Were any qualifications required based on internal standard results?	Yes	(No)	N/A

Comments/Qualifications:

-05 IS1 $\frac{110063}{121021} = 90.9\%$

RT. 9.665/9.668

-04 IS2 $\frac{55270}{56064} = 98.6\%$

RT 14.8/14.8

X.	Target Compound Identification			
	1. Are relative retention times (RRTs) within + or - 0.06 RRT units of standard RRT?	Yes	No	~~N/A~~
	2. Do sample compound spectra meet specified criteria in relation to laboratory standard spectra?	Yes	No	~~N/A~~
	3. Were all compounds accounted for on chromatogram?	Yes	No	~~N/A~~

Comments/Qualifications:

Level IV - no raw data

DATA VALIDATION WORKSHEETS
SEMIVOLATILE ORGANICS

Reviewer: Kitchings **Date:** 5/3

Project: FTC-419 **SDG:** 1104178 **Matrix/No. Samples:** W-7

XI.	Compound Quantitation and Reported Contract Required Quantitation Limits (CRQLs)			
	1. Were sample results correctly calculated and reported by laboratory?	Yes	No	N/A
	2. Were correct internal standard quantitation ion and RRF used to quantify all compounds for all samples?	Yes	No	N/A
	3. Were CRQLs adjusted to reflect sample dilutions and dry weight factors not accounted for by the method?	Yes	No	N/A
	4. Were any laboratory QA/QC sample results calculated from peaks derived using manual integration?	Yes	No	N/A
	5. Were any qualifications required based on this information?	Yes	No	N/A
	Comments/Qualifications:			

XII.	Field QC			
	1. Were any Field Duplicates associated with this SDG?	Yes	No	N/A
	a. If Yes, were RPDs acceptable (50% for water samples, 100% for soil samples)?	Yes	No	N/A
	2. Were any field blanks or equipment rinsates associated with this SDG?	Yes	No	N/A
	a. If yes, were any compounds reported in samples >IDL?	Yes	No	N/A
	b. Were any qualifications required based on this information?	Yes	No	N/A
	Comments/Qualifications: -05 -059 "u". -04 419-RS01 u - 1.-mn @ 0.0987 2.-mn @ 0.126 naphth @ 0.228 -04 ~~samples~~ "u" ~~<5X~~			

XIII.	Overall Assessment of Data			
	1. Are there any specific concerns or limitations regarding the data in this SDG?	Yes	No	N/A
	Comments/Qualifications:			

SDG: 1104178 Project: FTC Bldg 419

Method: Volatiles 8260 B Matrix/No. Samples: Water--7

Validation Samples: MW-03-03 MW-05-05 MW-04-04
MW-02-02 MW-05-059
MW-01-01 MW-06-06

Data Validation Report Summary

		Status Code	Comments
1.	Sample Preservation, Handling, and Transport	A	
2.	Chain of Custody	A	
3.	Holding Times	A	
4.	GC/MS Tune/Inst Perf	A	
5.	Calibrations	A	
6.	Blanks	A	
7.	Blank Spike/LCS	A	
8.	Matrix Spike	A	
9.	Surrogates	A	
10.	Internal Standards	A	
11.	Compound Identification	A	
12.	System Performance	A	
13.	Field QC Samples	A	
14.	Overall Assessment	A	

Status Codes:
A = Acceptable
R = Data Rejected
X = Data acceptable but qualified due to problems

Qualifications:

Significant Findings/Recommendations:

Overall Data Quality:

Acceptable as reported.

Validator's Signature: J. Kimmer Kilduff Date: 5/3/2011

EMPIRICAL LABORATORIES, LLC - CHAIN OF CUSTODY RECORD

SHIP TO: 621 Mainstream Drive, Suite 270 ♦ Nashville, TN 37228 ♦ 615-345-1115 ♦ (fax) 615-846-5426

13934

Send Results to:	Send Invoice to:
Name Doug Hawn	Name
Company SES	Company
Address 1006 Fieldcrest	Address SAME
City Oak Ridge	City
State, Zip TN 37830	State, Zip
Phone 865-481-7837	Phone
Fax 481-0290	Fax
E-mail	E-mail
Project No./Name: Building 419	**Sampler's (Signature):** Doug Hawn

Lab Use Only:

VOA Headspace	Y	(N)	NA
Field Filtered	Y	(N)	NA
Correct Containers	(Y)	N	NA
Discrepancies	Y	(N)	NA
Cust. Seals Intact	(Y)	N	NA
Containers Intact	(Y)	N	NA

Airbill #: 1180

CAR #:

Lab Use Only Lab #	Date/Time Sampled	Sample Description	Sample Matrix	BTEX	GA PAHs	VOCs	Comments	No. of Bottles	Lab Use Only Containers/Pres.
1104178-01	4-12-11 0940	MW-03-03	GW	X	X			5	3 UHy + 1 H
-02	4-12-11 0910	MW-02-02	GW	X	X			5	
-03	4-12-11 1210	MW-01-01	GW	X	X			5	
-04	4-12-11 1425	MW-05-05	GW	X	X			5	
-05	4-12-11 1425	MW-05-05D	GW	X	X			5	
-06	4-12-11 1450	MW-06-06	GW	X	X			5	
↓	4-12-11 1450	MW-06-06 MS/D	GW	X	X			5	
-07	4-12-11 1640	MW-04-04	GW	X	X			5	
-08	4-12-11 1550	419-RS01	Ris.	X	X			5	↓
-09	LAB	419-Trip-B	Blank			X		2	2 UHy

	Date/Time	Received By: (Signature)
Sample Kit Prep'd by: (Signature)		
Relinquished by: (Signature) Doug Hawn	4-13-11 1630	Received By: (Signature)
Relinquished by: (Signature)	Date/Time	Received By: (Signature)
Received for Laboratory by: (Signature)	Date/Time 4-14-11 08:45	Temperature

REMARKS:

Details:

Page 1 of 1

Cooler No. 1 of 3

Date Shipped 4-13-11

Shipped By Fed-Ex

Turnaround Normal

Distribution: Original and yellow copies accompany sample shipment to laboratory; Pink retained by samplers.

10

1104178

ANALYSIS DATA SHEET

MW-03-03

Laboratory:	Empirical Laboratories, LLC		SDG:	1104178	
Client:	SES, Inc. (S750)		Project:	FTS UST 2008-2010	
Matrix:	Ground Water	Laboratory ID:	1104178-01	File ID:	0417801.D
Sampled:	04/12/11 09:40	Prepared:	04/19/11 00:00	Analyzed:	04/19/11 13:57
Solids:		Preparation:	5030B	Dilution:	1
Batch:	1D19005	Sequence:	1D11029	Calibration:	1110001

Instrument: MS-VOA5

Raw Qual

CAS NO.	COMPOUND	CONC. (ug/L)	MDL	MRL	Q
71-43-2	Benzene		0.140	1.00	U
100-41-4	Ethylbenzene		0.150	1.00	U
108-88-3	Toluene		0.190	1.00	U
1330-20-7	Xylenes (total)		0.220	1.00	U

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Bromofluorobenzene	30.00	30.56	102	75 - 120	
Dibromofluoromethane	30.00	30.15	101	85 - 115	
1,2-Dichloroethane-d4	30.00	32.33	108	70 - 120	
Toluene-d8	30.00	31.05	103	85 - 120	

ANALYSIS DATA SHEET

MW-02-02

Laboratory:	Empirical Laboratories, LLC			SDG:	1104178
Client:	SES, Inc. (S750)			Project:	FTS UST 2008-2010
Matrix:	Ground Water	Laboratory ID:	1104178-02	File ID:	0417802.D
Sampled:	04/12/11 09:40	Prepared:	04/19/11 00:00	Analyzed:	04/19/11 14:24
Solids:		Preparation:	5030B	Dilution:	1
Batch:	1D19005	Sequence:	1D11029	Calibration:	1110001
Instrument:	MS-VOA5				

Rev 2nd

CAS NO.	COMPOUND	CONC. (ug/L)	MDL	MRL	Q
71-43-2	Benzene		0.140	1.00	U
100-41-4	Ethylbenzene		0.150	1.00	U
108-88-3	Toluene		0.190	1.00	U
1330-20-7	Xylenes (total)		0.220	1.00	U

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Bromofluorobenzene	30.00	30.31	101	75 - 120	
Dibromofluoromethane	30.00	29.17	97.2	85 - 115	
1,2-Dichloroethane-d4	30.00	30.93	103	70 - 120	
Toluene-d8	30.00	31.78	106	85 - 120	

ANALYSIS DATA SHEET

MW-01-01

Laboratory:	Empirical Laboratories, LLC			SDG:	1104178
Client:	SES, Inc. (S750)			Project:	FTS UST 2008-2010
Matrix:	Ground Water	Laboratory ID:	1104178-03	File ID:	0417803.D
Sampled:	04/12/11 12:10	Prepared:	04/19/11 00:00	Analyzed:	04/19/11 14:50
Solids:		Preparation:	5030B	Dilution:	1
Batch:	1D19005	Sequence:	1D11029	Calibration:	1110001
Instrument:	MS-VOA5				

Rev Qual U

CAS NO.	COMPOUND	CONC. (ug/L)	MDL	MRL	Q
71-43-2	Benzene		0.140	1.00	U
100-41-4	Ethylbenzene		0.150	1.00	U
108-88-3	Toluene		0.190	1.00	U
1330-20-7	Xylenes (total)		0.220	1.00	U

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Bromofluorobenzene	30.00	30.60	102	75 - 120	
Dibromofluoromethane	30.00	29.20	97.3	85 - 115	
1,2-Dichloroethane-d4	30.00	30.11	100	70 - 120	
Toluene-d8	30.00	31.09	104	85 - 120	

ANALYSIS DATA SHEET

MW-05-05

Laboratory:	Empirical Laboratories, LLC		SDG:	1104178	
Client:	SES, Inc. (S750)		Project:	FTS UST 2008-2010	
Matrix:	Ground Water	Laboratory ID:	1104178-04	File ID:	0417804.D
Sampled:	04/12/11 14:25	Prepared:	04/19/11 00:00	Analyzed:	04/19/11 15:17
Solids:		Preparation:	5030B	Dilution:	1
Batch:	1D19005	Sequence:	1D11029	Calibration:	1110001
Instrument:	MS-VOA5				

CAS NO.	COMPOUND	CONC. (ug/L)	MDL	MRL	Q
71-43-2	Benzene		0.140	1.00	U
100-41-4	Ethylbenzene		0.150	1.00	U
108-88-3	Toluene		0.190	1.00	U
1330-20-7	Xylenes (total)		0.220	1.00	U

Rev Qual U

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Bromofluorobenzene	30.00	31.40	105	75 - 120	
Dibromofluoromethane	30.00	30.40	101	85 - 115	
1,2-Dichloroethane-d4	30.00	31.26	104	70 - 120	
Toluene-d8	30.00	32.37	108	85 - 120	

ANALYSIS DATA SHEET

MW-05-059

Laboratory:	Empirical Laboratories, LLC		SDG:	1104178	
Client:	SES, Inc. (S750)		Project:	FTS UST 2008-2010	
Matrix:	Ground Water	Laboratory ID:	1104178-05	File ID:	0417805.D
Sampled:	04/12/11 14:25	Prepared:	04/19/11 00:00	Analyzed:	04/19/11 15:43
Solids:		Preparation:	5030B	Dilution:	1
Batch:	1D19005	Sequence:	1D11029	Calibration:	1110001
Instrument:	MS-VOA5				

Rev Qual U

CAS NO.	COMPOUND	CONC. (ug/L)	MDL	MRL	Q
71-43-2	Benzene		0.140	1.00	U
100-41-4	Ethylbenzene		0.150	1.00	U
108-88-3	Toluene		0.190	1.00	U
1330-20-7	Xylenes (total)		0.220	1.00	U

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Bromofluorobenzene	30.00	30.70	102	75 - 120	
Dibromofluoromethane	30.00	29.60	98.7	85 - 115	
1,2-Dichloroethane-d4	30.00	31.45	105	70 - 120	
Toluene-d8	30.00	30.64	102	85 - 120	

ANALYSIS DATA SHEET

MW-06-06

Laboratory:	Empirical Laboratories, LLC		SDG:	1104178	
Client:	SES, Inc. (S750)		Project:	FTS UST 2008-2010	
Matrix:	Ground Water	Laboratory ID:	1104178-06	File ID:	0417806.D
Sampled:	04/12/11 14:50	Prepared:	04/19/11 00:00	Analyzed:	04/19/11 16:10
Solids:		Preparation:	5030B	Dilution:	1
Batch:	1D19005	Sequence:	1D11029	Calibration:	1110001
Instrument:	MS-VOA5				

Rev Qual

CAS NO.	COMPOUND	CONC. (ug/L)	MDL	MRL	Q
71-43-2	Benzene		0.140	1.00	U
100-41-4	Ethylbenzene		0.150	1.00	U
108-88-3	Toluene		0.190	1.00	U
1330-20-7	Xylenes (total)		0.220	1.00	U

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Bromofluorobenzene	30.00	30.38	101	75 - 120	
Dibromofluoromethane	30.00	29.93	99.8	85 - 115	
1,2-Dichloroethane-d4	30.00	31.14	104	70 - 120	
Toluene-d8	30.00	31.19	104	85 - 120	

ANALYSIS DATA SHEET

MW-04-04

Laboratory:	Empirical Laboratories, LLC		SDG:	1104178	
Client:	SES, Inc. (S750)		Project:	FTS UST 2008-2010	
Matrix:	Ground Water	Laboratory ID:	1104178-07RE1	File ID:	0417807D.D
Sampled:	04/12/11 16:40	Prepared:	04/20/11 00:00	Analyzed:	04/20/11 17:03
Solids:		Preparation:	5030B	Dilution:	2
Batch:	1D20010	Sequence:	1D11102	Calibration:	1110001
Instrument:	MS-VOA5				

Rev Qual

J

CAS NO.	COMPOUND	CONC. (ug/L)	MDL	MRL	Q
71-43-2	Benzene	3.67	0.280	2.00	D
100-41-4	Ethylbenzene	19.8	0.300	2.00	D
108-88-3	Toluene	0.839	0.380	2.00	J, D
1330-20-7	Xylenes (total)	112	0.440	2.00	D

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Bromofluorobenzene	30.00	30.15	101	75 - 120	
Dibromofluoromethane	30.00	28.71	95.7	85 - 115	
1,2-Dichloroethane-d4	30.00	29.72	99.1	70 - 120	
Toluene-d8	30.00	31.49	105	85 - 120	

DATA VALIDATION WORKSHEETS
VOLATILE ORGANICS

Reviewer: Kitchings **Date:** 5/3

Project: FTC 419 **SDG:** 1104178 **Matrix/No. Samples:** W-7

I.	**Technical Holding Times**			
	A. Sample Preservation, Handling and Transport			
	1. Have all samples been preserved correctly?	(Yes)	No	N/A
	2. Have sample temperatures been kept at 4° C (+ or - 2 °)?	(Yes)	No	N/A
	3. Were all samples received in proper condition?	(Yes)	No	N/A
	4. Were any qualifications required based on this information?	Yes	(No)	N/A
	Coolers @ 2.5, 4.0°C.			
	B. Chain of Custody			
	1. Were all samples properly recorded on COCs?	(Yes)	No	N/A
	2. Were correct analyses performed on samples?	(Yes)	No	N/A
	C. Holding Times			
	1. Were samples extracted and analyzed within acceptable holding times?	(Yes)	No	N/A
	2. Were any qualifications required based on this information?	Yes	(No)	N/A

SAMPLED	PREPPED	ANALYZED
4/12	-01 thru -03, 05, 059, 06 4/19	4/19
	-04 4/20	4/20

II.	**GC/MS Instrument Performance Check**			
	1. Were instrument performance check samples run for each analysis period?	(Yes)	No	N/A
	2. Were ion abundance criteria met for BFB analysis?	(Yes)	No	N/A
	3. Do laboratory forms match raw data?	Yes	No	(N/A)
	4. Were any qualifications required based on this information?	Yes	(No)	N/A

Comments/Qualifications:

ICAL 4/15 @ 8:29 — CCAL 4/19 @ 7:26 — CCAL 4/20 @ 8:22

95 base

all criteria met.

DATA VALIDATION WORKSHEETS
VOLATILE ORGANICS

Reviewer: Kitchings **Date:** 5/3

Project: FTC 419 **SDG:** 1104178 **Matrix/No. Samples:** W-7

III.	Initial Calibration			
	1. Were correct concentrations of standards used for initial calibration? Were samples analyzed within 12 hours of associated instrument performance check?	Yes	No	N/A
	2. Were initial calibration RRFs for all volatile target compounds and system monitoring compounds >or = 0.05? Do recalculations for RRFs agree with reported values?	Yes	No	N/A
	3. Were %RSDs < or = 30% for all volatile target compounds? Do recalculations for RSDs agree with reported values?	Yes	No	N/A
	4. Were any qualifications required based on this information?	Yes	No	N/A

Comments/Qualifications:

4/15 @ 8:29
10810 ff. xylene total.
RRF > 0.8
RSPs < 9%

1.591
1.493
1.697
1.838
1.722
1.565
1.523
1.493
1.381

~~12.78~~ / 9 = ~~1.420~~ 14.303 / 9 = 1.589

RSD
.02924
533
7673
.17472
9120
2103
1061

.00884
1166
6200
1769
58
436
922
4326

√.15761 / 8 = .140 / 1.589 = 8.8%

IV.	Continuing Calibration			
	1. Were continuing calibration samples run at the required frequency, and compared to the correct initial calibration?	Yes	No	N/A
	2. Did calculations from raw data agree with laboratory reported values for RRF and %D?	Yes	No	N/A
	3. Were continuing calibration RRFs for volatile organic compounds and system monitoring compounds (surrogates) > or = 0.05?	Yes	No	N/A
	4. Were %D between initial calibration RRF and the continuing calibration RRFs within + or - 25%?	Yes	No	N/A
	5. Were any qualifications required based on this information?	Yes	No	N/A

Comments/Qualifications:

CCV ID 11029 - CCV1

01-03, 05, 6, 059

1.0-11.0

Benzene.

$\frac{0.906-0.817}{0.817}$

= 10.9%

.04

CCV ID 11102 - CCV1

0.4-9.2

toluene. $\frac{1.124-1.119}{1.119}$ = 0.4%

DATA VALIDATION WORKSHEETS
VOLATILE ORGANICS

Reviewer: Kitchings **Date:** 5/3

Project: FTC-419 **SDG:** 1104178 **Matrix/No. Samples:** W-7

V.	**Blanks**			
	1. Were any target or non-target compounds reported in laboratory prep or calibration blanks?	Yes	No	N/A
	2. Were method blank analyses performed at required frequency, and for each GC/MS system used to analyze samples for each type of analysis (i.e., matrix)?	Yes	No	N/A
	3. Were any qualifications required based on this information?	Yes	No	N/A
	Comments/Qualifications: 19005-BLK 4/19@ 4:38 U's; 20010-BLK 4/20@10:26 U's.			
VI.	**System Monitoring Compounds (Surrogate Spikes)**			
	1. Were laboratory surrogate recoveries calculated and reported correctly?	Yes	No	N/A
	2. Were surrogate recoveries within acceptable limits?	Yes	No	N/A
	3. Were any qualifications required based on surrogate spike QC information?	Yes	No	N/A
	Comments/Qualifications: 28.0 — 1: 101-105; 2: 95.7-101; 3: 99.1-168; 4: 102-108			
VII.	**Matrix Spikes/Matrix Spike Duplicates**			
	1. Were MS/MSD samples analyzed at required frequency for each ample matrix?	Yes	No	N/A
	2. Were MS/MSD results for recovery and RPD within advisory limits?	Yes	No	N/A
	3. Were Samples used for MS/MSD field blanks?	Yes	No	N/A
	4. Were laboratory reported results correctly calculated from raw data?	Yes	No	N/A
	5. Were any qualifications required, based on results of MS/MSD samples in conjunction with other QC information?	Yes	No	N/A
	Comments/Qualifications: -86 MS/MSD; MS 101-110; MSD 93.9-101; 8.0/U-0; Ethylb 52.0/50 = 104%, 48.2 = 96.4%; RPD 1.8/49.1 = 3.7%; RPD 7-8.5			

DATA VALIDATION WORKSHEETS
VOLATILE ORGANICS

Reviewer: Kitchings **Date:** 5/3

Project: FTC-419 **SDG:** 1104178 **Matrix/No. Samples:** W-7

VIII.	Laboratory Control Sample (LCS)			
	1. Were LCS samples run at correct frequency for each matrix samples?	Yes	No	N/A
	2. Were LCS calculations performed correctly, and did laboratory reported values match raw data? Were recoveries within laboratory QC limits?	Yes	No	N/A
	4. Were any qualifications required based on LCS data in conjunction with other QC information?	Yes	No	N/A

Comments/Qualifications:

.18-0
4-0 102-114

LCS 1D19005-BS1

Benz. 57.0/50.0 = 114%

LCS 1D20010-BS1

99.1-105
96.4-112
0.4-6.3

toluene 50.2/50 = 100.4%
49.4 = 98.8%

RP = .8/49.8 = 1.6%

IX.	Internal Standards			
	1. Were standard area counts within a factor of two (-50% to +100%) from associated calibration standard?	Yes	No	N/A
	2. Were retention times of internal standard within + or - 30 seconds of retention time of associated calibration check?	Yes	No	N/A
	3. Were any qualifications required based on internal standard results?	Yes	No	N/A

Comments/Qualifications:

-03 IS1

area ct. 1294398/1344936 = 96.2%

RT 7.898/7.91

-059 IS2

523829/582598 = 89.9%

RT 11.034/11.043

-04 IS3

401872/473164 = 84.9%

RT. 13.433/13.444

X.	Target Compound Identification			
	1. Are relative retention times (RRTs) within + or - 0.06 RRT units of standard RRT?	Yes	No	N/A
	2. Do sample compound spectra meet specified criteria in relation to laboratory standard spectra?	Yes	No	N/A
	3. Were all compounds accounted for on chromatogram?	Yes	No	N/A

Comments/Qualifications: No raw data - Level III

DATA VALIDATION WORKSHEETS
VOLATILE ORGANICS

Reviewer: Kitchings **Date:** 8/3

Project: IFTC-419 **SDG:** 1104178 **Matrix/No. Samples:** W-7

XI.	Compound Quantitation and Reported Contract Required Quantitation Limits (CRQLs)			
	1. Were sample results correctly calculated and reported by laboratory?	Yes	No	N/A
	2. Were correct internal standard quantitation ion and RRF used to quantify all compounds for all samples?	Yes	No	N/A
	3. Were CRQLs adjusted to reflect sample dilutions and dry weight factors not accounted for by the method?	Yes	No	N/A
	4. Were any laboratory QA/QC sample results calculated from peaks derived using manual integration?	Yes	No	N/A
	5. Were any qualifications required based on this information?	Yes	No	N/A
	Comments/Qualifications: No raw data - level IV			

XII.	Field QC			
	1. Were any Field Duplicates associated with this SDG?	Yes	No	N/A
	a. If Yes, were RPDs acceptable (50% for water samples, 100% for soil samples)?	Yes	No	N/A
	2. Were any field blanks or equipment rinsates associated with this SDG?	Yes	No	N/A
	a. If yes, were any compounds reported in samples >IDL?	Yes	No	N/A
	b. Were any qualifications required based on this information?	Yes	No	N/A
	Comments/Qualifications: -05 -059 all U's. 419-RS01 - U's 419TB-B - U's			

XIII.	Overall Assessment of Data			
	1. Are there any specific concerns or limitations regarding the data in this SDG?	Yes	No	N/A
	Comments/Qualifications:			

SDG: 1103047 Project: FTC Bldg 419

Method: Semivolatiles - DRO 8015M Matrix/No. Samples: Soil-25

Validation Samples: SB-02-01, SB-03-02, SB-05-02, SB-07-02, SB-09-02, SB-11-02, SB-01-01, SB-02-02, SB-04-01, SB-06-01, SB-08-01, SB-10-01, SB-12-01, SB-01-02, SB-03-01, SB-04-02, SB-06-02, SB-08-02, SB-10-02, SB-12-02, SB-03-01D, SB-05-01, SB-07-01, SB-09-01, SB-11-01

Data Validation Report Summary

		Status Code	Comments
1.	Sample Preservation, Handling, and Transport	A	
2.	Chain of Custody	A	
3.	Holding Times	A	
4.	GC/MS Tune/Inst Perf	N/A	
5.	Calibrations	A	
6.	Blanks	A	
7.	Blank Spike/LCS	A	
8.	Matrix Spike	A	
9.	Surrogates	X	
10.	Internal Standards	N/A	
11.	Compound Identification	A	
12.	System Performance	A	
13.	Field QC Samples	A	
14.	Overall Assessment	X	

Status Codes:
A = Acceptable
R = Data Rejected
X = Data acceptable but qualified due to problems

Qualifications:

7a. A high surrogate recovery for sample SB-11-01 resulted in a "J" qualifier for that cpd in that sample.

Significant Findings/Recommendations:

Overall Data Quality:

Acceptable as qualified.

Validator's Signature: J. Thomas Hodges Date: 4/20/2011

ANALYSIS DATA SHEET

SB-01-01

Laboratory:	Empirical Laboratories, LLC			SDG:	1103247
Client:	SES, Inc. (S750)			Project:	FTS UST 2008-2010
Matrix:	Soil	Laboratory ID:	1103247-01	File ID:	006B0601.D
Sampled:	03/29/11 09:50	Prepared:	03/30/11 12:45	Analyzed:	03/31/11 12:04
Solids:	89.59	Preparation:	EXT_3546	Dilution:	1
Batch:	1C30010	Sequence:	1D09110	Calibration:	1038002
Instrument:	GL-GCFID				

Rev Qual u

CAS NO.	COMPOUND	CONC. (mg/Kg dry)	MDL	MRL	Q
11-84-7	Diesel Range Organics (C10-C28)		7.28	7.28	U

SYSTEM MONITORING COMPOUND	ADDED (mg/Kg dry)	CONC (mg/Kg dry)	% REC	QC LIMITS	Q
o-Terphenyl	1.450	1.182	81.5	35 - 140	

ANALYSIS DATA SHEET

SB-01-02

Laboratory:	Empirical Laboratories, LLC			SDG:	1103247
Client:	SES, Inc. (S750)			Project:	FTS UST 2008-2010
Matrix:	Solid	Laboratory ID:	1103247-03	File ID:	009B0901.D
Sampled:	03/29/11 09:55	Prepared:	03/30/11 12:45	Analyzed:	03/31/11 13:46
Solids:	85.52	Preparation:	EXT_3546	Dilution:	1
Batch:	1C30010	Sequence:	1D09110	Calibration:	1038002

Instrument: GL-GCFID

Rev 2nd n

CAS NO.	COMPOUND	CONC. (mg/Kg dry)	MDL	MRL	Q
11-84-7	Diesel Range Organics (C10-C28)		7.68	7.68	U

SYSTEM MONITORING COMPOUND	ADDED (mg/Kg dry)	CONC (mg/Kg dry)	% REC	QC LIMITS	Q
o-Terphenyl	1.528	1.233	80.7	35 - 140	

ANALYSIS DATA SHEET

SB-02-01

Laboratory:	Empirical Laboratories, LLC			SDG:	1103247
Client:	SES, Inc. (S750)			Project:	FTS UST 2008-2010
Matrix:	Soil	Laboratory ID:	1103247-04	File ID:	010B1001.D
Sampled:	03/29/11 10:35	Prepared:	03/30/11 12:45	Analyzed:	03/31/11 14:19
Solids:	94.48	Preparation:	EXT_3546	Dilution:	1
Batch:	1C30010	Sequence:	1D09110	Calibration:	1038002
Instrument:	GL-GCFID				

Rev 2nd

CAS NO.	COMPOUND	CONC. (mg/Kg dry)	MDL	MRL	Q
11-84-7	Diesel Range Organics (C10-C28)	19.3	6.91	6.91	

SYSTEM MONITORING COMPOUND	ADDED (mg/Kg dry)	CONC (mg/Kg dry)	% REC	QC LIMITS	Q
o-Terphenyl	1.375	1.049	76.3	35 - 140	

ANALYSIS DATA SHEET

SB-02-02

Laboratory:	Empirical Laboratories, LLC			SDG:	1103247
Client:	SES, Inc. (S750)			Project:	FTS UST 2008-2010
Matrix:	Soil	Laboratory ID:	1103247-05	File ID:	011B1101.D
Sampled:	03/29/11 10:40	Prepared:	03/30/11 12:45	Analyzed:	03/31/11 14:53
Solids:	72.28	Preparation:	EXT_3546	Dilution:	1
Batch:	1C30010	Sequence:	1D09110	Calibration:	1038002

Instrument: GL-GCFID

Rev Qual U

CAS NO.	COMPOUND	CONC. (mg/Kg dry)	MDL	MRL	Q
11-84-7	Diesel Range Organics (C10-C28)		8.91	8.91	U

SYSTEM MONITORING COMPOUND	ADDED (mg/Kg dry)	CONC (mg/Kg dry)	% REC	QC LIMITS	Q
o-Terphenyl	1.774	1.276	72.0	35 - 140	

ANALYSIS DATA SHEET

SB-04-01

Laboratory:	Empirical Laboratories, LLC			SDG:	1103247
Client:	SES, Inc. (S750)			Project:	FTS UST 2008-2010
Matrix:	Soil	Laboratory ID:	1103247-06	File ID:	012B1201.D
Sampled:	03/29/11 11:00	Prepared:	03/30/11 12:45	Analyzed:	03/31/11 15:27
Solids:	88.11	Preparation:	EXT_3546	Dilution:	1
Batch:	1C30010	Sequence:	1D09110	Calibration:	1038002
Instrument:	GL-GCFID				

Rev Qual

CAS NO.	COMPOUND	CONC. (mg/Kg dry)	MDL	MRL	Q
11-84-7	Diesel Range Organics (C10-C28)	39.5	7.55	7.55	

SYSTEM MONITORING COMPOUND	ADDED (mg/Kg dry)	CONC (mg/Kg dry)	% REC	QC LIMITS	Q
o-Terphenyl	1.503	0.8271	55.0	35 - 140	

ANALYSIS DATA SHEET

SB-04-02

Laboratory:	Empirical Laboratories, LLC			SDG:	1103247
Client:	SES, Inc. (S750)			Project:	FTS UST 2008-2010
Matrix:	Soil	Laboratory ID:	1103247-07	File ID:	013B1301.D
Sampled:	03/29/11 11:05	Prepared:	03/30/11 12:45	Analyzed:	03/31/11 16:01
Solids:	84.70	Preparation:	EXT_3546	Dilution:	1
Batch:	1C30010	Sequence:	1D09110	Calibration:	1038002
Instrument:	GL-GCFID				

Rev Qual u

CAS NO.	COMPOUND	CONC. (mg/Kg dry)	MDL	MRL	Q
11-84-7	Diesel Range Organics (C10-C28)		7.61	7.61	U

SYSTEM MONITORING COMPOUND	ADDED (mg/Kg dry)	CONC (mg/Kg dry)	% REC	QC LIMITS	Q
o-Terphenyl	1.514	1.161	76.7	35 - 140	

ANALYSIS DATA SHEET

SB-03-01

Laboratory:	Empirical Laboratories, LLC			SDG:	1103247
Client:	SES, Inc. (S750)			Project:	FTS UST 2008-2010
Matrix:	Soil	Laboratory ID:	1103247-08	File ID:	014B1401.D
Sampled:	03/29/11 11:20	Prepared:	03/30/11 12:45	Analyzed:	03/31/11 16:35
Solids:	86.20	Preparation:	EXT_3546	Dilution:	1
Batch:	1C30010	Sequence:	1D09110	Calibration:	1038002
Instrument:	GL-GCFID				

Rev 2nd u

CAS NO.	COMPOUND	CONC. (mg/Kg dry)	MDL	MRL	Q
11-84-7	Diesel Range Organics (C10-C28)		7.47	7.47	U

SYSTEM MONITORING COMPOUND	ADDED (mg/Kg dry)	CONC (mg/Kg dry)	% REC	QC LIMITS	Q
o-Terphenyl	1.487	0.9708	65.3	35 - 140	

ANALYSIS DATA SHEET

SB-03-019

Laboratory:	Empirical Laboratories, LLC		SDG:	1103247	
Client:	SES, Inc. (S750)		Project:	FTS UST 2008-2010	
Matrix:	Soil	Laboratory ID:	1103247-09	File ID:	015B1501.D
Sampled:	03/29/11 11:20	Prepared:	03/30/11 12:45	Analyzed:	03/31/11 17:08
Solids:	85.54	Preparation:	EXT_3546	Dilution:	1
Batch:	1C30010	Sequence:	1D09110	Calibration:	1038002
Instrument:	GL-GCFID				

RO qual U

CAS NO.	COMPOUND	CONC. (mg/Kg dry)	MDL	MRL	Q
11-84-7	Diesel Range Organics (C10-C28)		7.68	7.68	U

SYSTEM MONITORING COMPOUND	ADDED (mg/Kg dry)	CONC (mg/Kg dry)	% REC	QC LIMITS	Q
o-Terphenyl	1.528	1.076	70.4	35 - 140	

ANALYSIS DATA SHEET

SB-03-02

Laboratory:	Empirical Laboratories, LLC			SDG:	1103247
Client:	SES, Inc. (S750)			Project:	FTS UST 2008-2010
Matrix:	Soil	Laboratory ID:	1103247-10	File ID:	016B1601.D
Sampled:	03/29/11 11:35	Prepared:	03/30/11 12:45	Analyzed:	03/31/11 17:42
Solids:	85.04	Preparation:	EXT_3546	Dilution:	1
Batch:	1C30010	Sequence:	1D09110	Calibration:	1038002
Instrument:	GL-GCFID				

Rev Qual U

CAS NO.	COMPOUND	CONC. (mg/Kg dry)	MDL	MRL	Q
11-84-7	Diesel Range Organics (C10-C28)		7.67	7.67	U

SYSTEM MONITORING COMPOUND	ADDED (mg/Kg dry)	CONC (mg/Kg dry)	% REC	QC LIMITS	Q
o-Terphenyl	1.527	1.138	74.5	35 - 140	

ANALYSIS DATA SHEET

SB-05-01

Laboratory:	Empirical Laboratories, LLC		SDG:	1103247	
Client:	SES, Inc. (S750)		Project:	FTS UST 2008-2010	
Matrix:	Soil	Laboratory ID:	1103247-11	File ID:	018B1801.D
Sampled:	03/29/11 13:15	Prepared:	03/30/11 12:45	Analyzed:	03/31/11 18:49
Solids:	91.08	Preparation:	EXT_3546	Dilution:	1
Batch:	1C30010	Sequence:	1D09110	Calibration:	1038002
Instrument:	GL-GCFID				

Rev Q used U

CAS NO.	COMPOUND	CONC. (mg/Kg dry)	MDL	MRL	Q
11-84-7	Diesel Range Organics (C10-C28)		7.31	7.31	U

SYSTEM MONITORING COMPOUND	ADDED (mg/Kg dry)	CONC (mg/Kg dry)	% REC	QC LIMITS	Q
o-Terphenyl	1.454	1.010	69.4	35 - 140	

ANALYSIS DATA SHEET

SB-05-02

Laboratory:	Empirical Laboratories, LLC			SDG:	1103247
Client:	SES, Inc. (S750)			Project:	FTS UST 2008-2010
Matrix:	Soil	Laboratory ID:	1103247-12	File ID:	019B1901.D
Sampled:	03/29/11 13:20	Prepared:	03/30/11 12:45	Analyzed:	03/31/11 19:23
Solids:	83.51	Preparation:	EXT_3546	Dilution:	1
Batch:	1C30010	Sequence:	1D09110	Calibration:	1038002
				Instrument:	GL-GCFID

Rev Qual

CAS NO.	COMPOUND	CONC. (mg/Kg dry)	MDL	MRL	Q
11-84-7	Diesel Range Organics (C10-C28)	9.33	7.92	7.92	

SYSTEM MONITORING COMPOUND	ADDED (mg/Kg dry)	CONC (mg/Kg dry)	% REC	QC LIMITS	Q
o-Terphenyl	1.576	1.045	66.3	35 - 140	

ANALYSIS DATA SHEET

SB-06-01

Laboratory:	Empirical Laboratories, LLC			SDG:	1103247
Client:	SES, Inc. (S750)			Project:	FTS UST 2008-2010
Matrix:	Soil	Laboratory ID:	1103247-13	File ID:	020B2001.D
Sampled:	03/29/11 13:40	Prepared:	03/30/11 12:45	Analyzed:	03/31/11 19:57
Solids:	91.00	Preparation:	EXT_3546	Dilution:	1
Batch:	1C30010	Sequence:	1D09110	Calibration:	1038002
Instrument:	GL-GCFID				

Rev 2nd u

CAS NO.	COMPOUND	CONC. (mg/Kg dry)	MDL	MRL	Q
11-84-7	Diesel Range Organics (C10-C28)		7.22	7.22	U

SYSTEM MONITORING COMPOUND	ADDED (mg/Kg dry)	CONC (mg/Kg dry)	% REC	QC LIMITS	Q
o-Terphenyl	1.436	0.8376	58.3	35 - 140	

ANALYSIS DATA SHEET

SB-06-02

Laboratory:	Empirical Laboratories, LLC			SDG:	1103247
Client:	SES, Inc. (S750)			Project:	FTS UST 2008-2010
Matrix:	Soil	Laboratory ID:	1103247-14	File ID:	021B2101.D
Sampled:	03/29/11 13:45	Prepared:	03/30/11 12:45	Analyzed:	03/31/11 20:30
Solids:	81.70	Preparation:	EXT_3546	Dilution:	1
Batch:	1C30010	Sequence:	1D09110	Calibration:	1038002
Instrument:	GL-GCFID				

Rev Qual u

CAS NO.	COMPOUND	CONC. (mg/Kg dry)	MDL	MRL	Q
11-84-7	Diesel Range Organics (C10-C28)		7.84	7.84	U

SYSTEM MONITORING COMPOUND	ADDED (mg/Kg dry)	CONC (mg/Kg dry)	% REC	QC LIMITS	Q
o-Terphenyl	1.559	1.039	66.6	35 - 140	

ANALYSIS DATA SHEET

SB-07-01

Laboratory:	Empirical Laboratories, LLC			SDG:	1103247
Client:	SES, Inc. (S750)			Project:	FTS UST 2008-2010
Matrix:	Soil	Laboratory ID:	1103247-15	File ID:	022B2201.D
Sampled:	03/29/11 14:05	Prepared:	03/30/11 12:45	Analyzed:	03/31/11 21:04
Solids:	77.91	Preparation:	EXT_3546	Dilution:	1
Batch:	1C30010	Sequence:	1D09110	Calibration:	1038002
				Instrument:	GL-GCFID

Rev Qual

CAS NO.	COMPOUND	CONC. (mg/Kg dry)	MDL	MRL	Q
11-84-7	Diesel Range Organics (C10-C28)	11.2	8.27	8.27	

SYSTEM MONITORING COMPOUND	ADDED (mg/Kg dry)	CONC (mg/Kg dry)	% REC	QC LIMITS	Q
o-Terphenyl	1.646	0.8409	51.1	35 - 140	

ANALYSIS DATA SHEET

SB-07-02

Laboratory:	Empirical Laboratories, LLC			SDG:	1103247
Client:	SES, Inc. (S750)			Project:	FTS UST 2008-2010
Matrix:	Soil	Laboratory ID:	1103247-16	File ID:	023B2301.D
Sampled:	03/29/11 14:10	Prepared:	03/30/11 12:45	Analyzed:	03/31/11 21:38
Solids:	84.91	Preparation:	EXT_3546	Dilution:	1
Batch:	1C30010	Sequence:	1D09110	Calibration:	1038002
Instrument:	GL-GCFID				

Rev Qual u

CAS NO.	COMPOUND	CONC. (mg/Kg dry)	MDL	MRL	Q
11-84-7	Diesel Range Organics (C10-C28)		7.79	7.79	U

SYSTEM MONITORING COMPOUND	ADDED (mg/Kg dry)	CONC (mg/Kg dry)	% REC	QC LIMITS	Q
o-Terphenyl	1.550	1.060	68.4	35 - 140	

ANALYSIS DATA SHEET

SB-08-01

Laboratory:	Empirical Laboratories, LLC			SDG:	1103247
Client:	SES, Inc. (S750)			Project:	FTS UST 2008-2010
Matrix:	Soil	Laboratory ID:	1103247-17	File ID:	024B2401.D
Sampled:	03/29/11 14:35	Prepared:	03/30/11 12:45	Analyzed:	03/31/11 22:11
Solids:	83.78	Preparation:	EXT_3546	Dilution:	1
Batch:	1C30010	Sequence:	1D09110	Calibration:	1038002
Instrument:	GL-GCFID				

Rev Qual u

CAS NO.	COMPOUND	CONC. (mg/Kg dry)	MDL	MRL	Q
11-84-7	Diesel Range Organics (C10-C28)		7.59	7.59	U

SYSTEM MONITORING COMPOUND	ADDED (mg/Kg dry)	CONC (mg/Kg dry)	% REC	QC LIMITS	Q
o-Terphenyl	1.511	0.8553	56.6	35 - 140	

ANALYSIS DATA SHEET

SB-08-02

Laboratory:	Empirical Laboratories, LLC			SDG:	1103247
Client:	SES, Inc. (S750)			Project:	FTS UST 2008-2010
Matrix:	Soil	Laboratory ID:	1103247-18	File ID:	025B2501.D
Sampled:	03/29/11 14:45	Prepared:	03/30/11 12:45	Analyzed:	03/31/11 22:45
Solids:	84.52	Preparation:	EXT_3546	Dilution:	1
Batch:	1C30010	Sequence:	1D09110	Calibration:	1038002
Instrument:	GL-GCFID				

Rev Qual u

CAS NO.	COMPOUND	CONC. (mg/Kg dry)	MDL	MRL	Q
11-84-7	Diesel Range Organics (C10-C28)		7.62	7.62	U

SYSTEM MONITORING COMPOUND	ADDED (mg/Kg dry)	CONC (mg/Kg dry)	% REC	QC LIMITS	Q
o-Terphenyl	1.517	0.9683	63.8	35 - 140	

ANALYSIS DATA SHEET

SB-09-01

Laboratory:	Empirical Laboratories, LLC			SDG:	1103247
Client:	SES, Inc. (S750)			Project:	FTS UST 2008-2010
Matrix:	Soil	Laboratory ID:	1103247-19	File ID:	026B2601.D
Sampled:	03/29/11 15:00	Prepared:	03/30/11 12:45	Analyzed:	03/31/11 23:19
Solids:	91.32	Preparation:	EXT_3546	Dilution:	1
Batch:	1C30010	Sequence:	1D09110	Calibration:	1038002
Instrument:	GL-GCFID				

Rev 2nd

CAS NO.	COMPOUND	CONC. (mg/Kg dry)	MDL	MRL	Q
11-84-7	Diesel Range Organics (C10-C28)	10.3	7.19	7.19	

SYSTEM MONITORING COMPOUND	ADDED (mg/Kg dry)	CONC (mg/Kg dry)	% REC	QC LIMITS	Q
o-Terphenyl	1.431	0.7532	52.6	35 - 140	

ANALYSIS DATA SHEET

SB-09-02

Laboratory:	Empirical Laboratories, LLC			SDG:	1103247
Client:	SES, Inc. (S750)			Project:	FTS UST 2008-2010
Matrix:	Soil	Laboratory ID:	1103247-20	File ID:	027B2701.D
Sampled:	03/29/11 15:10	Prepared:	03/30/11 12:45	Analyzed:	03/31/11 23:53
Solids:	80.66	Preparation:	EXT_3546	Dilution:	1
Batch:	1C30010	Sequence:	1D09110	Calibration:	1038002
Instrument:	GL-GCFID				

Rev Qual U

CAS NO.	COMPOUND	CONC. (mg/Kg dry)	MDL	MRL	Q
11-84-7	Diesel Range Organics (C10-C28)		8.14	8.14	U

SYSTEM MONITORING COMPOUND	ADDED (mg/Kg dry)	CONC (mg/Kg dry)	% REC	QC LIMITS	Q
o-Terphenyl	1.621	0.9953	61.4	35 - 140	

ANALYSIS DATA SHEET

SB-10-01

Laboratory:	Empirical Laboratories, LLC			SDG:	1103247
Client:	SES, Inc. (S750)			Project:	FTS UST 2008-2010
Matrix:	Soil	Laboratory ID:	1103247-21	File ID:	031B3101.D
Sampled:	03/29/11 15:40	Prepared:	03/30/11 14:45	Analyzed:	04/01/11 02:09
Solids:	68.32	Preparation:	EXT_3546	Dilution:	1
Batch:	1C30019	Sequence:	1D09110	Calibration:	1038002
Instrument:	GL-GCFID				

Rev Qual

CAS NO.	COMPOUND	CONC. (mg/Kg dry)	MDL	MRL	Q
11-84-7	Diesel Range Organics (C10-C28)	22100	1340	1340	

SYSTEM MONITORING COMPOUND	ADDED (mg/Kg dry)	CONC (mg/Kg dry)	% REC	QC LIMITS	Q
o-Terphenyl	266.1	234.1	88.0	35 - 140	

ANALYSIS DATA SHEET

SB-10-02

Laboratory:	Empirical Laboratories, LLC			SDG:	1103247
Client:	SES, Inc. (S750)			Project:	FTS UST 2008-2010
Matrix:	Soil	Laboratory ID:	1103247-22	File ID:	035B3501.D
Sampled:	03/29/11 15:45	Prepared:	03/30/11 12:45	Analyzed:	04/01/11 10:20
Solids:	81.50	Preparation:	EXT_3546	Dilution:	1
Batch:	1C30012	Sequence:	1D09110	Calibration:	1038002
Instrument:	GL-GCFID				

Rev 2 Qual

CAS NO.	COMPOUND	CONC. (mg/Kg dry)	MDL	MRL	Q
11-84-7	Diesel Range Organics (C10-C28)	16.2	8.06	8.06	

SYSTEM MONITORING COMPOUND	ADDED (mg/Kg dry)	CONC (mg/Kg dry)	% REC	QC LIMITS	Q
o-Terphenyl	1.604	1.052	65.6	35 - 140	

ANALYSIS DATA SHEET

SB-11-01

Laboratory:	Empirical Laboratories, LLC			SDG:	1103247
Client:	SES, Inc. (S750)			Project:	FTS UST 2008-2010
Matrix:	Soil	Laboratory ID:	1103247-23	File ID:	040B4001.D
Sampled:	03/29/11 16:10	Prepared:	03/30/11 12:45	Analyzed:	04/01/11 13:10
Solids:	88.60	Preparation:	EXT_3546	Dilution:	5
Batch:	1C30012	Sequence:	1D09110	Calibration:	1038002
Instrument:	GL-GCFID				

Rev Qual J 7a

CAS NO.	COMPOUND	CONC. (mg/Kg dry)	MDL	MRL	Q
11-84-7	Diesel Range Organics (C10-C28)	918	36.4	36.4	D

SYSTEM MONITORING COMPOUND	ADDED (mg/Kg dry)	CONC (mg/Kg dry)	% REC	QC LIMITS	Q
o-Terphenyl	1.447	2.052	142	35 - 140	*

ANALYSIS DATA SHEET

SB-11-02

Laboratory:	Empirical Laboratories, LLC			SDG:	1103247
Client:	SES, Inc. (S750)			Project:	FTS UST 2008-2010
Matrix:	Soil	Laboratory ID:	1103247-24	File ID:	037B3701.D
Sampled:	03/29/11 16:15	Prepared:	03/30/11 12:45	Analyzed:	04/01/11 11:28
Solids:	83.17	Preparation:	EXT_3546	Dilution:	1
Batch:	1C30012	Sequence:	1D09110	Calibration:	1038002

Instrument: GL-GCFID

Rev 2 ucl u

CAS NO.	COMPOUND	CONC. (mg/Kg dry)	MDL	MRL	Q
11-84-7	Diesel Range Organics (C10-C28)		7.75	7.75	U

SYSTEM MONITORING COMPOUND	ADDED (mg/Kg dry)	CONC (mg/Kg dry)	% REC	QC LIMITS	Q
o-Terphenyl	1.542	1.041	67.5	35 - 140	

ANALYSIS DATA SHEET

SB-12-01

Laboratory:	Empirical Laboratories, LLC			SDG:	1103247
Client:	SES, Inc. (S750)			Project:	FTS UST 2008-2010
Matrix:	Soil	Laboratory ID:	1103247-25	File ID:	038B3801.D
Sampled:	03/29/11 16:40	Prepared:	03/30/11 12:45	Analyzed:	04/01/11 12:02
Solids:	80.60	Preparation:	EXT_3546	Dilution:	1
Batch:	1C30012	Sequence:	1D09110	Calibration:	1038002
Instrument:	GL-GCFID				

Rev 2nd

CAS NO.	COMPOUND	CONC. (mg/Kg dry)	MDL	MRL	Q
11-84-7	Diesel Range Organics (C10-C28)	29.3	8.10	8.10	

SYSTEM MONITORING COMPOUND	ADDED (mg/Kg dry)	CONC (mg/Kg dry)	% REC	QC LIMITS	Q
o-Terphenyl	1.611	1.064	66.1	35 - 140	

ANALYSIS DATA SHEET

SB-12-02

Laboratory:	Empirical Laboratories, LLC			SDG:	1103247
Client:	SES, Inc. (S750)			Project:	FTS UST 2008-2010
Matrix:	Soil	Laboratory ID:	1103247-26	File ID:	039B3901.D
Sampled:	03/29/11 16:50	Prepared:	03/30/11 12:45	Analyzed:	04/01/11 12:36
Solids:	90.89	Preparation:	EXT_3546	Dilution:	1
Batch:	1C30012	Sequence:	1D09110	Calibration:	1038002
Instrument:	GL-GCFID				

Rev 2nd

CAS NO.	COMPOUND	CONC. (mg/Kg dry)	MDL	MRL	Q
11-84-7	Diesel Range Organics (C10-C28)	39.6	7.04	7.04	

SYSTEM MONITORING COMPOUND	ADDED (mg/Kg dry)	CONC (mg/Kg dry)	% REC	QC LIMITS	Q
o-Terphenyl	1.402	1.033	73.7	35 - 140	

DATA VALIDATION WORKSHEETS
SEMIVOLATILE ORGANICS

Reviewer: Kitchings **Date:** 4/20

Project: ETC 419 **SDG:** 1103247 **Matrix/No. Samples:** S-25

I.	**Technical Holding Times**			
	A. Sample Preservation, Handling and Transport			
	1. Have all samples been preserved correctly?	**Yes**	**No**	**N/A**
	2. Have sample temperatures been kept at 4° C (+ or - 2 °)?	**Yes**	**No**	**N/A**
	3. Were all samples received in proper condition?	**Yes**	**No**	**N/A**
	4. Were any qualifications required based on this information?	**Yes**	**No**	**N/A**
	Coolers @ 1.7, 1.9°C.			
	B. Chain of Custody			
	1. Were all samples properly recorded on COCs?	**Yes**	**No**	**N/A**
	2. Were correct analyses performed on samples?	**Yes**	**No**	**N/A**
	C. Holding Times			
	1. Were samples extracted and analyzed within acceptable holding times?	**Yes**	**No**	**N/A**
	2. Were any qualifications required based on this information?	**Yes**	**No**	**N/A**

SAMPLED	**PREPPED**	**ANALYZED**
3/29	3/30	3/31

II.	**GC/MS Instrument Performance Check**			
	1. Were instrument performance check samples run for each analysis period?	**Yes**	**No**	**N/A**
	2. Were ion abundance criteria met for DTFPP analysis?	**Yes**	**No**	**N/A**
	3. Do laboratory forms match raw data?	**Yes**	**No**	**N/A**
	4. Were any qualifications required based on this information?	**Yes**	**No**	**N/A**

Comments/Qualifications:

DATA VALIDATION WORKSHEETS
SEMIVOLATILE ORGANICS

Reviewer: Kitchings **Date:** 4/20

Project: FTC 419 **SDG:** 1103247 **Matrix/No. Samples:** S-25

III. Initial Calibration			
1. Were correct concentrations of standards used for initial calibration? Were samples analyzed within 12 hours of associated instrument performance check?	(Yes)	No	N/A
2. Were initial calibration RRFs for all volatile target compounds and system monitoring compounds >or = 0.05? Do recalculations for RRFs agree with reported values?	(Yes)	No	N/A
3. Were %RSDs < or = 30% for all volatile target compounds? Do recalculations for RSDs agree with reported values?	(Yes)	No	N/A
4. Were any qualifications required based on this information?	Yes	(No)	N/A

Comments/Qualifications:

2/4 @ 14:16

1352 V
1499 V
1574
1678 V
1883 V
1703

= 1615

9687 / 6

69169
13456
1681
3721
71824
7744

167595 / 5

= 183.1 / 1615 = 11.3%

IV. Continuing Calibration			
1. Were continuing calibration samples run at the required frequency, and compared to the correct initial calibration?	(Yes)	No	N/A
2. Did calculations from raw data agree with laboratory reported values for RRF and %D?	~~Yes~~	~~No~~	~~N/A~~ (N/A)
3. Were continuing calibration RRFs for volatile organic compounds and system monitoring compounds (surrogates) > or = 0.05?	(Yes)	No	N/A
4. Were %D between initial calibration RRF and the continuing calibration RRFs within + or - 25%?	(Yes)	No	N/A
5. Were any qualifications required based on this information?	Yes	(No)	N/A

Comments/Qualifications:

3/33
9110

CCV1

$\frac{1652-1615}{1615}$ = 2.3%

CCV2

$\frac{1615-1580}{1615}$ = 2.2%

CCV3

$\frac{1615-1510}{1615}$ = 5.9%

CCV4

$\frac{1615-1571}{1615}$ = 2.7%

DATA VALIDATION WORKSHEETS
SEMIVOLATILE ORGANICS

Reviewer: Kitchings **Date:** 4/20

Project: FTC 419 **SDG:** 1103247 **Matrix/No. Samples:** S-25

V.	**Blanks**			
	1. Were any target or non-target compounds reported in laboratory prep or calibration blanks?	Yes	(No)	N/A
	2. Were method blank analyses performed at required frequency, and for each GC/MS system used to analyze samples for each type of analysis (i.e., matrix)?	(Yes)	No	N/A
	3. Were any qualifications required based on this information?	Yes	(No)	N/A
	Comments/Qualifications: 30010-BLK, 30019 BLK 30012 BLK U U U			
VI.	**System Monitoring Compounds (Surrogate Spikes)**			
	1. Were laboratory surrogate recoveries calculated and reported correctly?	(Yes)	No	N/A
	2. Were surrogate recoveries within acceptable limits?	Yes	(No)	N/A
	3. Were any qualifications required based on surrogate spike QC information?	(Yes)	No	N/A
	Comments/Qualifications: 51.1-103 -19-01 high recovery → 142 "J"			
VII.	**Matrix Spikes/Matrix Spike Duplicates**			
	1. Were MS/MSD samples analyzed at required frequency for each ample matrix?	(Yes)	No	N/A
	2. Were MS/MSD results for recovery and RPD within advisory limits?	(Yes)	No	N/A
	3. Were Samples used for MS/MSD field blanks?	Yes	(No)	N/A
	4. Were laboratory reported results correctly calculated from raw data?	Yes	No	(N/A)
	5. Were any qualifications required, based on results of MS/MSD samples in conjunction with other QC information?	Yes	(No)	N/A
	Comments/Qualifications: -01-01 MS 56.56 / 73.44 = 77.0% ~~77.0%~~ MSD 55.60 / 72.48 = 76.7%			

RPD $\frac{.96}{56.08} = 1.7\%$

DATA VALIDATION WORKSHEETS
SEMIVOLATILE ORGANICS

Reviewer: Kitchings **Date:** 4/20

Project: RTC419 **SDG:** 103247 **Matrix/No. Samples:** S-25

VIII.	Laboratory Control Sample (LCS)			
	1. Were LCS samples run at correct frequency for each matrix samples?	~~Yes~~	No	N/A
	2. Were LCS calculations performed correctly, and did laboratory reported values match raw data? Were recoveries within laboratory QC limits?	Yes	No	N/A
	4. Were any qualifications required based on LCS data in conjunction with other QC information?	Yes	No	N/A

Comments/Qualifications:

30010 BSI
68.46 / 66.67 = 102.7

30019 BSI
2292 / 2727 = 84.0

30012
LCS 58.05 / 66.67 = 87.1%
LCSD 63.25 / 66.67 = 94.9%
5.20 / 60.65 = 8.6%

IX.	Internal Standards			
	1. Were standard area counts within a factor of two (-50% to +100%) from associated calibration standard?	Yes	No	N/A
	2. Were retention times of internal standard within + or - 30 seconds of retention time of associated calibration check?	Yes	No	N/A
	3. Were any qualifications required based on internal standard results?	Yes	No	N/A

Comments/Qualifications:

X.	Target Compound Identification			
	1. Are relative retention times (RRTs) within + or - 0.06 RRT units of standard RRT?	Yes	No	N/A
	2. Do sample compound spectra meet specified criteria in relation to laboratory standard spectra?	Yes	No	N/A
	3. Were all compounds accounted for on chromatogram?	Yes	No	N/A

Comments/Qualifications: Level III - no raw data.

DATA VALIDATION WORKSHEETS
SEMIVOLATILE ORGANICS

Reviewer: Kitchings **Date:** 4/20

Project: FTC419 **SDG:** 1103247 **Matrix/No. Samples:** S-25

XI.	Compound Quantitation and Reported Contract Required Quantitation Limits (CRQLs)			
	1. Were sample results correctly calculated and reported by laboratory?	Yes	No	(N/A)
	2. Were correct internal standard quantitation ion and RRF used to quantify all compounds for all samples?	Yes	No	N/A
	3. Were CRQLs adjusted to reflect sample dilutions and dry weight factors not accounted for by the method?	Yes	No	N/A
	4. Were any laboratory QA/QC sample results calculated from peaks derived using manual integration?	Yes	No	N/A
	5. Were any qualifications required based on this information?	Yes	No	N/A
	Comments/Qualifications: No raw data level III			

XII.	Field QC			
	1. Were any Field Duplicates associated with this SDG?	(Yes)	No	N/A
	a. If Yes, were RPDs acceptable (50% for water samples, 100% for soil samples)?	Yes	No	N/A
	2. Were any field blanks or equipment rinsates associated with this SDG?	Yes	(No)	N/A
	a. If yes, were any compounds reported in samples >IDL?	Yes	No	N/A
	b. Were any qualifications required based on this information?	Yes	(No)	N/A
	Comments/Qualifications: 0308-01 0309 ↳ U's ↲			

XIII.	Overall Assessment of Data			
	1. Are there any specific concerns or limitations regarding the data in this SDG?	Yes	(No)	N/A
	Comments/Qualifications:			

SDG: 103247 Project: FTC Bldg 419

Method: Semivolatiles PAHs 8270C Matrix/No. Samples: Soil - 25

Validation Samples: SB-02-02, SB-04-02, SB-06-02, SB-08-02, SB-10-02, SB-01-01, SB-03-01, SB-05-01, SB-07-01, SB-09-01, SB-11-01, SB-01-02, SB-03-02, SB-05-02, SB-07-02, SB-09-02, SB-11-02, SB-02-01, SB-04-01, SB-06-01, SB-08-01, SB-10-01, SB-12-01, SB-03-01D, SB-12-02

Data Validation Report Summary

		Status Code	Comments
1.	Sample Preservation, Handling, and Transport	A	
2.	Chain of Custody	A	
3.	Holding Times	A	
4.	GC/MS Tune/Inst Perf	A	
5.	Calibrations	X	
6.	Blanks	A	
7.	Blank Spike/LCS	X	see comment #2
8.	Matrix Spike	A	
9.	Surrogates	A	see comment #1
10.	Internal Standards	A	
11.	Compound Identification	A	
12.	System Performance	A	
13.	Field QC Samples	A	
14.	Overall Assessment	X	

Status Codes:
A = Acceptable
R = Data Rejected
X = Data acceptable but qualified due to problems

Qualifications:

#1 • High recoveries for the nitrobenzene & terphenyl surrogates in samples SB-10-01 and SB-03-02, respectively, resulted in "J" qualifiers for detects in those samples, all results nondetects – no qualifiers

~~#1~~ Hi

11a • The LCS recovery (30011) was above the QC limit for benzo(b)fluoranthene samples SB-05-01 & SB-09-01 had that cpd qualified as "J". (9108 3/31).

5b • The opening CCV %D for pyrene was above the QC limit and all results were qualified as "UJ/J", for those samples associated with the CCV

Significant Findings/Recommendations:

~~#2 The LCS recovery for b(b)f was above the QC limit, however the LCSD recovery was acceptable – no quals were required.~~

#2 The LCS (30020) recoveries had a number of compounds at levels > QC criteria – all samples cpds were nondetects so no quals were required.

Overall Data Quality:

Acceptable as qualified.

Validator's Signature: J. Thomas Kutchins Date: 4/20/2011

ANALYSIS DATA SHEET

SB-01-01

Laboratory:	Empirical Laboratories, LLC		SDG:	1103247	
Client:	SES, Inc. (S750)		Project:	FTS UST 2008-2010	
Matrix:	Soil	Laboratory ID:	1103247-01	File ID:	0324701.D
Sampled:	03/29/11 09:50	Prepared:	03/30/11 16:15	Analyzed:	03/31/11 22:07
Solids:	89.59	Preparation:	EXT_3546	Dilution:	1
Batch:	1C30011	Sequence: 1D09108	Calibration:	1032006	Instrument: MS-BNA1

Rev Qual

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
83-32-9	Acenaphthene		28.5	361	U
208-96-8	Acenaphthylene		21.9	361	U
120-12-7	Anthracene		29.5	361	U
56-55-3	Benzo(a)anthracene		39.4	361	U
50-32-8	Benzo(a)pyrene		25.2	361	U
205-99-2	Benzo(b)fluoranthene		35.0	361	Q, U
191-24-2	Benzo(g,h,i)perylene		76.6	361	U
207-08-9	Benzo(k)fluoranthene		42.7	361	U
218-01-9	Chrysene		33.9	361	U
53-70-3	Dibenz(a,h)anthracene		65.7	361	U
206-44-0	Fluoranthene		59.1	361	U
86-73-7	Fluorene		28.5	361	U
193-39-5	Indeno(1,2,3-cd)pyrene		50.3	361	U
90-12-0	1-Methylnaphthalene		109	361	U
91-57-6	2-Methylnaphthalene		38.3	361	U
91-20-3	Naphthalene		35.0	361	U
85-01-8	Phenanthrene		25.2	361	U
129-00-0	Pyrene		43.8	361	X, U

UJ SB

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
2-Fluorobiphenyl	3648	2333	64.0	45 - 105	
Nitrobenzene-d5	3648	2669	73.2	35 - 100	
Terphenyl-d14	3648	2929	80.3	30 - 125	X

ANALYSIS DATA SHEET

SB-01-02

Laboratory:	Empirical Laboratories, LLC		SDG:	1103247	
Client:	SES, Inc. (S750)		Project:	FTS UST 2008-2010	
Matrix:	Solid	Laboratory ID:	1103247-03	File ID:	0324703.D
Sampled:	03/29/11 09:55	Prepared:	03/30/11 16:15	Analyzed:	03/31/11 22:36
Solids:	85.52	Preparation:	EXT_3546	Dilution:	1
Batch:	1C30011	Sequence: 1D09108	Calibration:	1032006	Instrument: MS-BNA1

Rerun 2nd 4

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
83-32-9	Acenaphthene		30.0	381	U
208-96-8	Acenaphthylene		23.1	381	U
120-12-7	Anthracene		31.2	381	U
56-55-3	Benzo(a)anthracene		41.5	381	U
50-32-8	Benzo(a)pyrene		26.5	381	U
205-99-2	Benzo(b)fluoranthene		36.9	381	Q, U
191-24-2	Benzo(g,h,i)perylene		80.8	381	U
207-08-9	Benzo(k)fluoranthene		45.0	381	U
218-01-9	Chrysene		35.8	381	U
53-70-3	Dibenz(a,h)anthracene		69.2	381	U
206-44-0	Fluoranthene		62.3	381	U
86-73-7	Fluorene		30.0	381	U
193-39-5	Indeno(1,2,3-cd)pyrene		53.1	381	U
90-12-0	1-Methylnaphthalene		115	381	U
91-57-6	2-Methylnaphthalene		40.4	381	U
91-20-3	Naphthalene		36.9	381	U
85-01-8	Phenanthrene		26.5	381	U
129-00-0	Pyrene		46.2	381	X, U

use 5b

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
2-Fluorobiphenyl	3846	3681	95.7	45 - 105	
Nitrobenzene-d5	3846	3455	89.8	35 - 100	
Terphenyl-d14	3846	4385	114	30 - 125	X

ANALYSIS DATA SHEET

SB-02-01

Laboratory: Empirical Laboratories, LLC SDG: 1103247

Client: SES, Inc. (S750) Project: FTS UST 2008-2010

Matrix: Soil Laboratory ID: 1103247-04 File ID: 0324704.D

Sampled: 03/29/11 10:35 Prepared: 03/30/11 16:15 Analyzed: 03/31/11 23:04

Solids: 94.48 Preparation: EXT_3546 Dilution: 1

Batch: 1C30011 Sequence: 1D09108 Calibration: 1032006 Instrument: MS-BNA1

Rev 2nd

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
83-32-9	Acenaphthene		27.2	345	U
208-96-8	Acenaphthylene		20.9	345	U
120-12-7	Anthracene		28.2	345	U
56-55-3	Benzo(a)anthracene		37.6	345	U
50-32-8	Benzo(a)pyrene		24.0	345	U
205-99-2	Benzo(b)fluoranthene		33.4	345	Q, U
191-24-2	Benzo(g,h,i)perylene		73.1	345	U
207-08-9	Benzo(k)fluoranthene		40.7	345	U
218-01-9	Chrysene		32.4	345	U
53-70-3	Dibenz(a,h)anthracene		62.7	345	U
206-44-0	Fluoranthene		56.4	345	U
86-73-7	Fluorene		27.2	345	U
193-39-5	Indeno(1,2,3-cd)pyrene		48.0	345	U
90-12-0	1-Methylnaphthalene		104	345	U
91-57-6	2-Methylnaphthalene		36.6	345	U
91-20-3	Naphthalene		33.4	345	U
85-01-8	Phenanthrene		24.0	345	U
129-00-0	Pyrene	94.4	41.8	345	X, J

J 56

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
2-Fluorobiphenyl	3482	2227	64.0	45 - 105	
Nitrobenzene-d5	3482	2307	66.2	35 - 100	
Terphenyl-d14	3482	3845	110	30 - 125	X

ANALYSIS DATA SHEET

SB-02-02

Laboratory:	Empirical Laboratories, LLC			SDG:	1103247
Client:	SES, Inc. (S750)			Project:	FTS UST 2008-2010
Matrix:	Soil	Laboratory ID:	1103247-05	File ID:	0324705.D
Sampled:	03/29/11 10:40	Prepared:	03/30/11 16:15	Analyzed:	03/31/11 23:32
Solids:	72.28	Preparation:	EXT_3546	Dilution:	1
Batch:	1C30011	Sequence:	1D09108	Calibration:	1032006
Instrument:	MS-BNA1				

Rev Qual

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
83-32-9	Acenaphthene		34.8	442	U
208-96-8	Acenaphthylene		26.8	442	U
120-12-7	Anthracene		36.2	442	U
56-55-3	Benzo(a)anthracene		48.2	442	U
50-32-8	Benzo(a)pyrene		30.8	442	U
205-99-2	Benzo(b)fluoranthene		42.8	442	Q, U
191-24-2	Benzo(g,h,i)perylene		93.7	442	U
207-08-9	Benzo(k)fluoranthene		52.2	442	U
218-01-9	Chrysene		41.5	442	U
53-70-3	Dibenz(a,h)anthracene		80.3	442	U
206-44-0	Fluoranthene		72.3	442	U
86-73-7	Fluorene		34.8	442	U
193-39-5	Indeno(1,2,3-cd)pyrene		61.6	442	U
90-12-0	1-Methylnaphthalene		134	442	U
91-57-6	2-Methylnaphthalene		46.9	442	U
91-20-3	Naphthalene		42.8	442	U
85-01-8	Phenanthrene		30.8	442	U
129-00-0	Pyrene		53.6	442	X, U

UJ 5b

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
2-Fluorobiphenyl	4463	3497	78.3	45 - 105	
Nitrobenzene-d5	4463	3978	89.1	35 - 100	
Terphenyl-d14	4463	4515	101	30 - 125	X

ANALYSIS DATA SHEET

SB-04-01

Laboratory:	Empirical Laboratories, LLC			SDG:	1103247
Client:	SES, Inc. (S750)			Project:	FTS UST 2008-2010
Matrix:	Soil	Laboratory ID:	1103247-06	File ID:	0324706.D
Sampled:	03/29/11 11:00	Prepared:	03/30/11 16:15	Analyzed:	04/01/11 00:01
Solids:	88.11	Preparation:	EXT_3546	Dilution:	1
Batch:	1C30011	Sequence:	1D09108	Calibration:	1032006
				Instrument:	MS-BNA1

Rev 2nd u

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
83-32-9	Acenaphthene		29.3	372	U
208-96-8	Acenaphthylene		22.5	372	U
120-12-7	Anthracene		30.4	372	U
56-55-3	Benzo(a)anthracene		40.6	372	U
50-32-8	Benzo(a)pyrene		25.9	372	U
205-99-2	Benzo(b)fluoranthene		36.1	372	Q, U
191-24-2	Benzo(g,h,i)perylene		78.9	372	U
207-08-9	Benzo(k)fluoranthene		44.0	372	U
218-01-9	Chrysene		34.9	372	U
53-70-3	Dibenz(a,h)anthracene		67.6	372	U
206-44-0	Fluoranthene		60.9	372	U
86-73-7	Fluorene		29.3	372	U
193-39-5	Indeno(1,2,3-cd)pyrene		51.9	372	U
90-12-0	1-Methylnaphthalene		113	372	U
91-57-6	2-Methylnaphthalene		39.5	372	U
91-20-3	Naphthalene		36.1	372	U
85-01-8	Phenanthrene		25.9	372	U
129-00-0	Pyrene		45.1	372	X, U

UJ 56

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
2-Fluorobiphenyl	3758	2150	57.2	45 - 105	
Nitrobenzene-d5	3758	2132	56.7	35 - 100	
Terphenyl-d14	3758	2662	70.8	30 - 125	X

ANALYSIS DATA SHEET

SB-04-02

Laboratory:	Empirical Laboratories, LLC			SDG:	1103247
Client:	SES, Inc. (S750)			Project:	FTS UST 2008-2010
Matrix:	Soil	Laboratory ID:	1103247-07	File ID:	0324707.D
Sampled:	03/29/11 11:05	Prepared:	03/30/11 16:15	Analyzed:	04/01/11 00:29
Solids:	84.70	Preparation:	EXT_3546	Dilution:	1
Batch:	1C30011	Sequence:	1D09108	Calibration:	1032006
Instrument:	MS-BNA1				

Rev Qual

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
83-32-9	Acenaphthene		30.3	384	U
208-96-8	Acenaphthylene		23.3	384	U
120-12-7	Anthracene		31.5	384	U
56-55-3	Benzo(a)anthracene		41.9	384	U
50-32-8	Benzo(a)pyrene		26.8	384	U
205-99-2	Benzo(b)fluoranthene		37.3	384	Q, U
191-24-2	Benzo(g,h,i)perylene		81.6	384	U
207-08-9	Benzo(k)fluoranthene		45.4	384	U
218-01-9	Chrysene		36.1	384	U
53-70-3	Dibenz(a,h)anthracene		69.9	384	U
206-44-0	Fluoranthene		62.9	384	U
86-73-7	Fluorene		30.3	384	U
193-39-5	Indeno(1,2,3-cd)pyrene		53.6	384	U
90-12-0	1-Methylnaphthalene		117	384	U
91-57-6	2-Methylnaphthalene		40.8	384	U
91-20-3	Naphthalene		37.3	384	U
85-01-8	Phenanthrene		26.8	384	U
129-00-0	Pyrene		46.6	384	X, U

UJ 5b

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
2-Fluorobiphenyl	3883	3566	91.8	45 - 105	
Nitrobenzene-d5	3883	3295	84.9	35 - 100	
Terphenyl-d14	3883	3707	95.4	30 - 125	X

ANALYSIS DATA SHEET

SB-03-01

Laboratory:	Empirical Laboratories, LLC			SDG:	1103247
Client:	SES, Inc. (S750)			Project:	FTS UST 2008-2010
Matrix:	Soil	Laboratory ID:	1103247-08	File ID:	0324708.D
Sampled:	03/29/11 11:20	Prepared:	03/30/11 16:15	Analyzed:	04/01/11 00:58
Solids:	86.20	Preparation:	EXT_3546	Dilution:	1
Batch:	1C30011	Sequence:	1D09108	Calibration:	1032006
Instrument:	MS-BNA1				

Raw Qual

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
83-32-9	Acenaphthene		30.0	380	U
208-96-8	Acenaphthylene		23.0	380	U
120-12-7	Anthracene		31.1	380	U
56-55-3	Benzo(a)anthracene		41.5	380	U
50-32-8	Benzo(a)pyrene		26.5	380	U
205-99-2	Benzo(b)fluoranthene		36.9	380	Q, U
191-24-2	Benzo(g,h,i)perylene		80.7	380	U
207-08-9	Benzo(k)fluoranthene		44.9	380	U
218-01-9	Chrysene		35.7	380	U
53-70-3	Dibenz(a,h)anthracene		69.1	380	U
206-44-0	Fluoranthene		62.2	380	U
86-73-7	Fluorene		30.0	380	U
193-39-5	Indeno(1,2,3-cd)pyrene		53.0	380	U
90-12-0	1-Methylnaphthalene		115	380	U
91-57-6	2-Methylnaphthalene		40.3	380	U
91-20-3	Naphthalene		36.9	380	U
85-01-8	Phenanthrene		26.5	380	U
129-00-0	Pyrene		46.1	380	X, U

UJ SB

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
2-Fluorobiphenyl	3842	2344	61.0	45 - 105	
Nitrobenzene-d5	3842	2503	65.2	35 - 100	
Terphenyl-d14	3842	3133	81.5	30 - 125	X

ANALYSIS DATA SHEET

SB-03-019

Laboratory:	Empirical Laboratories, LLC			SDG:	1103247
Client:	SES, Inc. (S750)			Project:	FTS UST 2008-2010
Matrix:	Soil	Laboratory ID:	1103247-09	File ID:	0324709.D
Sampled:	03/29/11 11:20	Prepared:	03/30/11 16:15	Analyzed:	04/01/11 01:26
Solids:	85.54	Preparation:	EXT_3546	Dilution:	1
Batch:	1C30011	Sequence:	1D09108	Calibration:	1032006
Instrument:	MS-BNA1				

Rev Qual

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
83-32-9	Acenaphthene		29.8	378	U
208-96-8	Acenaphthylene		22.9	378	U
120-12-7	Anthracene		30.9	378	U
56-55-3	Benzo(a)anthracene		41.3	378	U
50-32-8	Benzo(a)pyrene		26.4	378	U
205-99-2	Benzo(b)fluoranthene		36.7	378	Q, U
191-24-2	Benzo(g,h,i)perylene		80.2	378	U
207-08-9	Benzo(k)fluoranthene		44.7	378	U
218-01-9	Chrysene		35.5	378	U
53-70-3	Dibenz(a,h)anthracene		68.8	378	U
206-44-0	Fluoranthene		61.9	378	U
86-73-7	Fluorene		29.8	378	U
193-39-5	Indeno(1,2,3-cd)pyrene		52.7	378	U
90-12-0	1-Methylnaphthalene		115	378	U
91-57-6	2-Methylnaphthalene		40.1	378	U
91-20-3	Naphthalene		36.7	378	U
85-01-8	Phenanthrene		26.4	378	U
129-00-0	Pyrene		45.8	378	X, U

UJ SB

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
2-Fluorobiphenyl	3821	2365	61.9	45 - 105	
Nitrobenzene-d5	3821	2319	60.7	35 - 100	
Terphenyl-d14	3821	3035	79.4	30 - 125	X

ANALYSIS DATA SHEET

SB-03-02

Laboratory:	Empirical Laboratories, LLC			SDG:	1103247
Client:	SES, Inc. (S750)			Project:	FTS UST 2008-2010
Matrix:	Soil	Laboratory ID:	1103247-10	File ID:	0324710.D
Sampled:	03/29/11 11:35	Prepared:	03/30/11 16:15	Analyzed:	04/01/11 01:55
Solids:	85.04	Preparation:	EXT_3546	Dilution:	1
Batch:	1C30011	Sequence:	1D09108	Calibration:	1032006
Instrument:	MS-BNA1				

Rev 2nd u

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
83-32-9	Acenaphthene		29.6	376	U
208-96-8	Acenaphthylene		22.8	376	U
120-12-7	Anthracene		30.7	376	U
56-55-3	Benzo(a)anthracene		41.0	376	U
50-32-8	Benzo(a)pyrene		26.2	376	U
205-99-2	Benzo(b)fluoranthene		36.4	376	Q, U
191-24-2	Benzo(g,h,i)perylene		79.7	376	U
207-08-9	Benzo(k)fluoranthene		44.4	376	U
218-01-9	Chrysene		35.3	376	U
53-70-3	Dibenz(a,h)anthracene		68.3	376	U
206-44-0	Fluoranthene		61.5	376	U
86-73-7	Fluorene		29.6	376	U
193-39-5	Indeno(1,2,3-cd)pyrene		52.3	376	U
90-12-0	1-Methylnaphthalene		114	376	U
91-57-6	2-Methylnaphthalene		39.8	376	U
91-20-3	Naphthalene		36.4	376	U
85-01-8	Phenanthrene		26.2	376	U
129-00-0	Pyrene		45.5	376	X, U

uJ 5b

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
2-Fluorobiphenyl	3793	3127	82.4	45 - 105	
Nitrobenzene-d5	3793	3006	79.2	35 - 100	
Terphenyl-d14	3793	4776	126	30 - 125	*X

ANALYSIS DATA SHEET

SB-05-01

Laboratory: Empirical Laboratories, LLC | SDG: 1103247

Client: SES, Inc. (S750) | Project: FTS UST 2008-2010

Matrix: Soil | Laboratory ID: 1103247-11 | File ID: 0324711.D

Sampled: 03/29/11 13:15 | Prepared: 03/30/11 16:15 | Analyzed: 04/01/11 02:23

Solids: 91.08 | Preparation: EXT_3546 | Dilution: 1

Batch: 1C30011 | Sequence: 1D09108 | Calibration: 1032006 | Instrument: MS-BNA1

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
83-32-9	Acenaphthene		28.0	355	U
208-96-8	Acenaphthylene		21.5	355	U
120-12-7	Anthracene		29.1	355	U
56-55-3	Benzo(a)anthracene		38.7	355	U
50-32-8	Benzo(a)pyrene	118	24.8	355	J
205-99-2	Benzo(b)fluoranthene	140	34.4	355	Q, J
191-24-2	Benzo(g,h,i)perylene	106	75.3	355	J
207-08-9	Benzo(k)fluoranthene	54.4	42.0	355	J
218-01-9	Chrysene	92.1	33.4	355	J
53-70-3	Dibenz(a,h)anthracene		64.6	355	U
206-44-0	Fluoranthene		58.1	355	U
86-73-7	Fluorene		28.0	355	U
193-39-5	Indeno(1,2,3-cd)pyrene		49.5	355	U
90-12-0	1-Methylnaphthalene		108	355	U
91-57-6	2-Methylnaphthalene		37.7	355	U
91-20-3	Naphthalene		34.4	355	U
85-01-8	Phenanthrene		24.8	355	U
129-00-0	Pyrene	95.5	43.1	355	X, J

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
2-Fluorobiphenyl	3588	3232	90.1	45 - 105	
Nitrobenzene-d5	3588	2796	77.9	35 - 100	
Terphenyl-d14	3588	3692	103	30 - 125	X

ANALYSIS DATA SHEET

SB-05-02

Laboratory:	Empirical Laboratories, LLC			SDG:	1103247
Client:	SES, Inc. (S750)			Project:	FTS UST 2008-2010
Matrix:	Soil	Laboratory ID:	1103247-12	File ID:	0324712.D
Sampled:	03/29/11 13:20	Prepared:	03/30/11 16:15	Analyzed:	04/02/11 21:53
Solids:	83.51	Preparation:	EXT_3546	Dilution:	1
Batch:	1C30011	Sequence:	1D09303	Calibration:	1032006
Instrument:	MS-BNA1				

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
83-32-9	Acenaphthene		29.7	378	U
208-96-8	Acenaphthylene		22.9	378	U
120-12-7	Anthracene		30.9	378	U
56-55-3	Benzo(a)anthracene		41.2	378	U
50-32-8	Benzo(a)pyrene		26.3	378	U
205-99-2	Benzo(b)fluoranthene		36.6	378	Q, X, U
191-24-2	Benzo(g,h,i)perylene		80.1	378	U
207-08-9	Benzo(k)fluoranthene		44.6	378	U
218-01-9	Chrysene		35.5	378	U
53-70-3	Dibenz(a,h)anthracene		68.6	378	U
206-44-0	Fluoranthene		61.8	378	U
86-73-7	Fluorene		29.7	378	U
193-39-5	Indeno(1,2,3-cd)pyrene		52.6	378	U
90-12-0	1-Methylnaphthalene		114	378	U
91-57-6	2-Methylnaphthalene		40.0	378	U
91-20-3	Naphthalene		36.6	378	U
85-01-8	Phenanthrene		26.3	378	U
129-00-0	Pyrene		45.8	378	U

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
2-Fluorobiphenyl	3814	2436	63.9	45 - 105	
Nitrobenzene-d5	3814	2380	62.4	35 - 100	
Terphenyl-d14	3814	3664	96.1	30 - 125	

ANALYSIS DATA SHEET

SB-06-01

Laboratory:	Empirical Laboratories, LLC			SDG:	1103247
Client:	SES, Inc. (S750)			Project:	FTS UST 2008-2010
Matrix:	Soil	Laboratory ID:	1103247-13	File ID:	0324713.D
Sampled:	03/29/11 13:40	Prepared:	03/30/11 16:15	Analyzed:	04/01/11 03:20
Solids:	91.00	Preparation:	EXT_3546	Dilution:	1
Batch:	1C30011	Sequence:	1D09108	Calibration:	1032006
Instrument:	MS-BNA1				

Rev 2nd

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
83-32-9	Acenaphthene		28.0	356	U
208-96-8	Acenaphthylene		21.5	356	U
120-12-7	Anthracene		29.1	356	U
56-55-3	Benzo(a)anthracene		38.8	356	U
50-32-8	Benzo(a)pyrene		24.8	356	U
205-99-2	Benzo(b)fluoranthene		34.5	356	Q, U
191-24-2	Benzo(g,h,i)perylene		75.4	356	U
207-08-9	Benzo(k)fluoranthene		42.0	356	U
218-01-9	Chrysene		33.4	356	U
53-70-3	Dibenz(a,h)anthracene		64.6	356	U
206-44-0	Fluoranthene		58.2	356	U
86-73-7	Fluorene		28.0	356	U
193-39-5	Indeno(1,2,3-cd)pyrene		49.6	356	U
90-12-0	1-Methylnaphthalene		108	356	U
91-57-6	2-Methylnaphthalene		37.7	356	U
91-20-3	Naphthalene		34.5	356	U
85-01-8	Phenanthrene		24.8	356	U
129-00-0	Pyrene		43.1	356	X, U

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SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
2-Fluorobiphenyl	3591	1854	51.6	45 - 105	
Nitrobenzene-d5	3591	2307	64.2	35 - 100	
Terphenyl-d14	3591	2707	75.4	30 - 125	X

ANALYSIS DATA SHEET

SB-06-02

Laboratory:	Empirical Laboratories, LLC			SDG:	1103247
Client:	SES, Inc. (S750)			Project:	FTS UST 2008-2010
Matrix:	Soil	Laboratory ID:	1103247-14	File ID:	0324714.D
Sampled:	03/29/11 13:45	Prepared:	03/30/11 16:15	Analyzed:	04/01/11 03:49
Solids:	81.70	Preparation:	EXT_3546	Dilution:	1
Batch:	1C30011	Sequence:	1D09108	Calibration:	1032006
Instrument:	MS-BNA1				

Rev 2nd

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
83-32-9	Acenaphthene		31.2	396	U
208-96-8	Acenaphthylene		24.0	396	U
120-12-7	Anthracene		32.4	396	U
56-55-3	Benzo(a)anthracene		43.2	396	U
50-32-8	Benzo(a)pyrene		27.6	396	U
205-99-2	Benzo(b)fluoranthene		38.4	396	Q, U
191-24-2	Benzo(g,h,i)perylene		84.0	396	U
207-08-9	Benzo(k)fluoranthene		46.8	396	U
218-01-9	Chrysene		37.2	396	U
53-70-3	Dibenz(a,h)anthracene		72.0	396	U
206-44-0	Fluoranthene		64.8	396	U
86-73-7	Fluorene		31.2	396	U
193-39-5	Indeno(1,2,3-cd)pyrene		55.2	396	U
90-12-0	1-Methylnaphthalene		120	396	U
91-57-6	2-Methylnaphthalene		42.0	396	U
91-20-3	Naphthalene		38.4	396	U
85-01-8	Phenanthrene		27.6	396	U
129-00-0	Pyrene		48.0	396	X, U

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UJ 5b

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
2-Fluorobiphenyl	4000	3140	78.5	45 - 105	
Nitrobenzene-d5	4000	3461	86.5	35 - 100	
Terphenyl-d14	4000	4538	113	30 - 125	X

ANALYSIS DATA SHEET

SB-07-01

Laboratory:	Empirical Laboratories, LLC			SDG:	1103247
Client:	SES, Inc. (S750)			Project:	FTS UST 2008-2010
Matrix:	Soil	Laboratory ID:	1103247-15	File ID:	0324715.D
Sampled:	03/29/11 14:05	Prepared:	03/30/11 16:15	Analyzed:	04/01/11 04:17
Solids:	77.91	Preparation:	EXT_3546	Dilution:	1
Batch:	1C30011	Sequence:	1D09108	Calibration:	1032006
				Instrument:	MS-BNA1

Rev Qual

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
83-32-9	Acenaphthene		32.1	407	U
208-96-8	Acenaphthylene		24.7	407	U
120-12-7	Anthracene		33.3	407	U
56-55-3	Benzo(a)anthracene		44.4	407	U
50-32-8	Benzo(a)pyrene		28.4	407	U
205-99-2	Benzo(b)fluoranthene		39.5	407	Q, U
191-24-2	Benzo(g,h,i)perylene		86.4	407	U
207-08-9	Benzo(k)fluoranthene		48.1	407	U
218-01-9	Chrysene		38.3	407	U
53-70-3	Dibenz(a,h)anthracene		74.1	407	U
206-44-0	Fluoranthene		66.6	407	U
86-73-7	Fluorene		32.1	407	U
193-39-5	Indeno(1,2,3-cd)pyrene		56.8	407	U
90-12-0	1-Methylnaphthalene		123	407	U
91-57-6	2-Methylnaphthalene		43.2	407	U
91-20-3	Naphthalene		39.5	407	U
85-01-8	Phenanthrene		28.4	407	U
129-00-0	Pyrene		49.4	407	X, U

UJ 55

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
2-Fluorobiphenyl	4114	2322	56.4	45 - 105	
Nitrobenzene-d5	4114	2175	52.9	35 - 100	
Terphenyl-d14	4114	3068	74.6	30 - 125	X

ANALYSIS DATA SHEET

SB-07-02

Laboratory:	Empirical Laboratories, LLC			SDG:	1103247
Client:	SES, Inc. (S750)			Project:	FTS UST 2008-2010
Matrix:	Soil	Laboratory ID:	1103247-16	File ID:	0324716.D
Sampled:	03/29/11 14:10	Prepared:	03/30/11 16:15	Analyzed:	04/01/11 15:37
Solids:	84.91	Preparation:	EXT_3546	Dilution:	1
Batch:	1C30011	Sequence:	1D09302	Calibration:	1032006
Instrument:	MS-BNA1				

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
83-32-9	Acenaphthene		29.4	374	U
208-96-8	Acenaphthylene		22.6	374	U
120-12-7	Anthracene		30.6	374	U
56-55-3	Benzo(a)anthracene		40.8	374	U
50-32-8	Benzo(a)pyrene		26.0	374	U
205-99-2	Benzo(b)fluoranthene		36.2	374	Q, U
191-24-2	Benzo(g,h,i)perylene		79.3	374	U
207-08-9	Benzo(k)fluoranthene		44.2	374	U
218-01-9	Chrysene		35.1	374	U
53-70-3	Dibenz(a,h)anthracene		67.9	374	U
206-44-0	Fluoranthene		61.1	374	U
86-73-7	Fluorene		29.4	374	U
193-39-5	Indeno(1,2,3-cd)pyrene		52.1	374	U
90-12-0	1-Methylnaphthalene		113	374	U
91-57-6	2-Methylnaphthalene		39.6	374	U
91-20-3	Naphthalene		36.2	374	U
85-01-8	Phenanthrene		26.0	374	U
129-00-0	Pyrene		45.3	374	U

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
2-Fluorobiphenyl	3775	3340	88.5	45 - 105	
Nitrobenzene-d5	3775	3333	88.3	35 - 100	
Terphenyl-d14	3775	4257	113	30 - 125	

ANALYSIS DATA SHEET

SB-08-01

Laboratory:	Empirical Laboratories, LLC			SDG:	1103247
Client:	SES, Inc. (S750)			Project:	FTS UST 2008-2010
Matrix:	Soil	Laboratory ID:	1103247-17	File ID:	0324717.D
Sampled:	03/29/11 14:35	Prepared:	03/30/11 16:15	Analyzed:	04/01/11 05:14
Solids:	83.78	Preparation:	EXT_3546	Dilution:	1
Batch:	1C30011	Sequence:	1D09108	Calibration:	1032006
Instrument:	MS-BNA1				

Rev 2nd

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
83-32-9	Acenaphthene		29.7	376	U
208-96-8	Acenaphthylene		22.8	376	U
120-12-7	Anthracene		30.8	376	U
56-55-3	Benzo(a)anthracene		41.1	376	U
50-32-8	Benzo(a)pyrene		26.2	376	U
205-99-2	Benzo(b)fluoranthene		36.5	376	O, U
191-24-2	Benzo(g,h,i)perylene		79.8	376	U
207-08-9	Benzo(k)fluoranthene		44.5	376	U
218-01-9	Chrysene		35.4	376	U
53-70-3	Dibenz(a,h)anthracene		68.4	376	U
206-44-0	Fluoranthene		61.6	376	U
86-73-7	Fluorene		29.7	376	U
193-39-5	Indeno(1,2,3-cd)pyrene		52.5	376	U
90-12-0	1-Methylnaphthalene		114	376	U
91-57-6	2-Methylnaphthalene		39.9	376	U
91-20-3	Naphthalene		36.5	376	U
85-01-8	Phenanthrene		26.2	376	U
129-00-0	Pyrene		45.6	376	X, U

UJ 5b

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
2-Fluorobiphenyl	3801	2863	75.3	45 - 105	
Nitrobenzene-d5	3801	2721	71.6	35 - 100	
Terphenyl-d14	3801	3680	96.8	30 - 125	X

ANALYSIS DATA SHEET

SB-08-02

Laboratory: Empirical Laboratories, LLC SDG: 1103247

Client: SES, Inc. (S750) Project: FTS UST 2008-2010

Matrix: Soil Laboratory ID: 1103247-18 File ID: 0324718.D

Sampled: 03/29/11 14:45 Prepared: 03/30/11 16:15 Analyzed: 04/01/11 05:42

Solids: 84.52 Preparation: EXT_3546 Dilution: 1

Batch: 1C30011 Sequence: 1D09108 Calibration: 1032006 Instrument: MS-BNA1

Rev 2nd a

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
83-32-9	Acenaphthene		30.0	380	U
208-96-8	Acenaphthylene		23.0	380	U
120-12-7	Anthracene		31.1	380	U
56-55-3	Benzo(a)anthracene		41.5	380	U
50-32-8	Benzo(a)pyrene		26.5	380	U
205-99-2	Benzo(b)fluoranthene		36.9	380	Q, U
191-24-2	Benzo(g,h,i)perylene		80.7	380	U
207-08-9	Benzo(k)fluoranthene		44.9	380	U
218-01-9	Chrysene		35.7	380	U
53-70-3	Dibenz(a,h)anthracene		69.1	380	U
206-44-0	Fluoranthene		62.2	380	U
86-73-7	Fluorene		30.0	380	U
193-39-5	Indeno(1,2,3-cd)pyrene		53.0	380	U
90-12-0	1-Methylnaphthalene		115	380	U
91-57-6	2-Methylnaphthalene		40.3	380	U
91-20-3	Naphthalene		36.9	380	U
85-01-8	Phenanthrene		26.5	380	U
129-00-0	Pyrene		46.1	380	X, U

UJ SB

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
2-Fluorobiphenyl	3841	3557	92.6	45 - 105	
Nitrobenzene-d5	3841	3157	82.2	35 - 100	
Terphenyl-d14	3841	4524	118	30 - 125	X

ANALYSIS DATA SHEET

SB-09-01

Laboratory:	Empirical Laboratories, LLC			SDG:	1103247
Client:	SES, Inc. (S750)			Project:	FTS UST 2008-2010
Matrix:	Soil	Laboratory ID:	1103247-19	File ID:	0324719.D
Sampled:	03/29/11 15:00	Prepared:	03/30/11 16:15	Analyzed:	04/01/11 06:10
Solids:	91.32	Preparation:	EXT_3546	Dilution:	1
Batch:	1C30011	Sequence:	1D09108	Calibration:	1032006
				Instrument:	MS-BNA1

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q	Rev Qual
83-32-9	Acenaphthene		28.1	357	U	U
208-96-8	Acenaphthylene		21.6	357	U	U
120-12-7	Anthracene		29.2	357	U	U
56-55-3	Benzo(a)anthracene	107	38.9	357	J	J
50-32-8	Benzo(a)pyrene	102	24.9	357	J	J
205-99-2	Benzo(b)fluoranthene	207	34.6	357	Q, J	J IIa
191-24-2	Benzo(g,h,i)perylene		75.6	357	U	U
207-08-9	Benzo(k)fluoranthene	80.1	42.1	357	J	J
218-01-9	Chrysene	128	33.5	357	J	J
53-70-3	Dibenz(a,h)anthracene		64.8	357	U	U
206-44-0	Fluoranthene	113	58.4	357	J	J
86-73-7	Fluorene		28.1	357	U	U
193-39-5	Indeno(1,2,3-cd)pyrene		49.7	357	U	U
90-12-0	1-Methylnaphthalene		108	357	U	
91-57-6	2-Methylnaphthalene		37.8	357	U	
91-20-3	Naphthalene		34.6	357	U	
85-01-8	Phenanthrene		24.9	357	U	
129-00-0	Pyrene	297	43.2	357	X, J	J Sb

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
2-Fluorobiphenyl	3602	2523	70.0	45 - 105	
Nitrobenzene-d5	3602	2359	65.5	35 - 100	
Terphenyl-d14	3602	3598	99.9	30 - 125	X

ANALYSIS DATA SHEET

SB-09-02

Laboratory:	Empirical Laboratories, LLC			SDG:	1103247
Client:	SES, Inc. (S750)			Project:	FTS UST 2008-2010
Matrix:	Soil	Laboratory ID:	1103247-20	File ID:	0324720.D
Sampled:	03/29/11 15:10	Prepared:	03/30/11 16:15	Analyzed:	04/01/11 06:38
Solids:	80.66	Preparation:	EXT_3546	Dilution:	1
Batch:	1C30011	Sequence:	1D09108	Calibration:	1032006
				Instrument:	MS-BNA1

Rev Qual

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
83-32-9	Acenaphthene		30.8	391	U
208-96-8	Acenaphthylene		23.7	391	U
120-12-7	Anthracene		32.0	391	U
56-55-3	Benzo(a)anthracene		42.6	391	U
50-32-8	Benzo(a)pyrene		27.2	391	U
205-99-2	Benzo(b)fluoranthene		37.9	391	Q, U
191-24-2	Benzo(g,h,i)perylene		82.9	391	U
207-08-9	Benzo(k)fluoranthene		46.2	391	U
218-01-9	Chrysene		36.7	391	U
53-70-3	Dibenz(a,h)anthracene		71.1	391	U
206-44-0	Fluoranthene		64.0	391	U
86-73-7	Fluorene		30.8	391	U
193-39-5	Indeno(1,2,3-cd)pyrene		54.5	391	U
90-12-0	1-Methylnaphthalene		118	391	U
91-57-6	2-Methylnaphthalene		41.5	391	U
91-20-3	Naphthalene		37.9	391	U
85-01-8	Phenanthrene		27.2	391	U
129-00-0	Pyrene		47.4	391	X, U

U

UJ Sb

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
2-Fluorobiphenyl	3949	3271	82.8	45 - 105	
Nitrobenzene-d5	3949	3302	83.6	35 - 100	
Terphenyl-d14	3949	3953	100	30 - 125	X

ANALYSIS DATA SHEET

SB-10-01

Laboratory:	Empirical Laboratories, LLC		SDG:	1103247	
Client:	SES, Inc. (S750)		Project:	FTS UST 2008-2010	
Matrix:	Soil	Laboratory ID:	1103247-21	File ID:	0324721D.D
Sampled:	03/29/11 15:40	Prepared:	03/30/11 15:30	Analyzed:	03/30/11 18:04
Solids:	68.32	Preparation:	EXT_3546	Dilution:	5
Batch:	1C30020	Sequence:	1C08909	Calibration:	1032006
Instrument:	MS-BNA1				

Rev 2nd

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
83-32-9	Acenaphthene		25900	329000	Q, U
208-96-8	Acenaphthylene		20000	329000	Q, U
120-12-7	Anthracene		26900	329000	Q, U
56-55-3	Benzo(a)anthracene		35900	329000	Q, U
50-32-8	Benzo(a)pyrene		23000	329000	U
205-99-2	Benzo(b)fluoranthene		31900	329000	U
191-24-2	Benzo(g,h,i)perylene		69900	329000	U
207-08-9	Benzo(k)fluoranthene		38900	329000	U
218-01-9	Chrysene		30900	329000	Q, U
53-70-3	Dibenz(a,h)anthracene		59900	329000	U
206-44-0	Fluoranthene		53900	329000	U
86-73-7	Fluorene		25900	329000	Q, U
193-39-5	Indeno(1,2,3-cd)pyrene		45900	329000	U
90-12-0	1-Methylnaphthalene		99800	329000	Q, U
91-57-6	2-Methylnaphthalene		34900	329000	Q, U
91-20-3	Naphthalene		31900	329000	Q, U
85-01-8	Phenanthrene		23000	329000	Q, U
129-00-0	Pyrene		39900	329000	U

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
2-Fluorobiphenyl	6653000	6035000	90.7	45 - 105	
Nitrobenzene-d5	6653000	6759000	102	35 - 100	*
Terphenyl-d14	6653000	6546000	98.4	30 - 125	

ANALYSIS DATA SHEET

SB-10-02

Laboratory: Empirical Laboratories, LLC | SDG: 1103247

Client: SES, Inc. (S750) | Project: FTS UST 2008-2010

Matrix: Soil | Laboratory ID: 1103247-22 | File ID: 0324722.D

Sampled: 03/29/11 15:45 | Prepared: 03/30/11 16:15 | Analyzed: 04/01/11 16:05

Solids: 81.50 | Preparation: EXT_3546 | Dilution: 1

Batch: 1C30013 | Sequence: 1D09302 | Calibration: 1032006 | Instrument: MS-BNA1

Rev Qual

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
83-32-9	Acenaphthene		31.7	402	U
208-96-8	Acenaphthylene		24.4	402	U
120-12-7	Anthracene		32.9	402	U
56-55-3	Benzo(a)anthracene		43.9	402	U
50-32-8	Benzo(a)pyrene		28.0	402	U
205-99-2	Benzo(b)fluoranthene		39.0	402	U
191-24-2	Benzo(g,h,i)perylene		85.3	402	U
207-08-9	Benzo(k)fluoranthene		47.5	402	U
218-01-9	Chrysene		37.8	402	U
53-70-3	Dibenz(a,h)anthracene		73.1	402	U
206-44-0	Fluoranthene		65.8	402	U
86-73-7	Fluorene		31.7	402	U
193-39-5	Indeno(1,2,3-cd)pyrene		56.1	402	U
90-12-0	1-Methylnaphthalene		122	402	U
91-57-6	2-Methylnaphthalene		42.7	402	Q, U
91-20-3	Naphthalene		39.0	402	U
85-01-8	Phenanthrene		28.0	402	U
129-00-0	Pyrene		48.8	402	U

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
2-Fluorobiphenyl	4063	3425	84.3	45 - 105	
Nitrobenzene-d5	4063	3469	85.4	35 - 100	
Terphenyl-d14	4063	4466	110	30 - 125	

ANALYSIS DATA SHEET

SB-11-01

Laboratory:	Empirical Laboratories, LLC			SDG:	1103247
Client:	SES, Inc. (S750)			Project:	FTS UST 2008-2010
Matrix:	Soil	Laboratory ID:	1103247-23	File ID:	0324723.D
Sampled:	03/29/11 16:10	Prepared:	03/30/11 16:15	Analyzed:	04/01/11 16:34
Solids:	88.60	Preparation:	EXT_3546	Dilution:	1
Batch:	1C30013	Sequence:	1D09302	Calibration:	1032006
Instrument:	MS-BNA1				

Rev 2 ucd

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
83-32-9	Acenaphthene		27.7	351	U
208-96-8	Acenaphthylene		21.3	351	U
120-12-7	Anthracene		28.7	351	U
56-55-3	Benzo(a)anthracene	107	38.3	351	J
50-32-8	Benzo(a)pyrene	71.1	24.5	351	J
205-99-2	Benzo(b)fluoranthene	133	34.1	351	J
191-24-2	Benzo(g,h,i)perylene		74.5	351	U
207-08-9	Benzo(k)fluoranthene	49.5	41.5	351	J
218-01-9	Chrysene	104	33.0	351	J
53-70-3	Dibenz(a,h)anthracene		63.9	351	U
206-44-0	Fluoranthene	108	57.5	351	J
86-73-7	Fluorene		27.7	351	U
193-39-5	Indeno(1,2,3-cd)pyrene		49.0	351	U
90-12-0	1-Methylnaphthalene	210	106	351	J
91-57-6	2-Methylnaphthalene	304	37.3	351	Q, J
91-20-3	Naphthalene	71.6	34.1	351	J
85-01-8	Phenanthrene		24.5	351	U
129-00-0	Pyrene	314	42.6	351	J

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
2-Fluorobiphenyl	3549	2634	74.2	45 - 105	
Nitrobenzene-d5	3549	3249	91.5	35 - 100	
Terphenyl-d14	3549	3750	106	30 - 125	

ANALYSIS DATA SHEET

SB-11-02

Laboratory: Empirical Laboratories, LLC
SDG: 1103247
Client: SES, Inc. (S750)
Project: FTS UST 2008-2010
Matrix: Soil
Laboratory ID: 1103247-24
File ID: 0324724.D
Sampled: 03/29/11 16:15
Prepared: 03/30/11 16:15
Analyzed: 04/01/11 17:03
Solids: 83.17
Preparation: EXT_3546
Dilution: 1
Batch: 1C30013
Sequence: 1D09302
Calibration: 1032006
Instrument: MS-BNA1

Rev 2nd u

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
83-32-9	Acenaphthene		30.9	392	U
208-96-8	Acenaphthylene		23.7	392	U
120-12-7	Anthracene		32.0	392	U
56-55-3	Benzo(a)anthracene		42.7	392	U
50-32-8	Benzo(a)pyrene		27.3	392	U
205-99-2	Benzo(b)fluoranthene		38.0	392	U
191-24-2	Benzo(g,h,i)perylene		83.1	392	U
207-08-9	Benzo(k)fluoranthene		46.3	392	U
218-01-9	Chrysene		36.8	392	U
53-70-3	Dibenz(a,h)anthracene		71.2	392	U
206-44-0	Fluoranthene		64.1	392	U
86-73-7	Fluorene		30.9	392	U
193-39-5	Indeno(1,2,3-cd)pyrene		54.6	392	U
90-12-0	1-Methylnaphthalene		119	392	U
91-57-6	2-Methylnaphthalene		41.5	392	Q, U
91-20-3	Naphthalene		38.0	392	U
85-01-8	Phenanthrene		27.3	392	U
129-00-0	Pyrene		47.5	392	U

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
2-Fluorobiphenyl	3955	2966	75.0	45 - 105	
Nitrobenzene-d5	3955	3542	89.5	35 - 100	
Terphenyl-d14	3955	3587	90.7	30 - 125	

ANALYSIS DATA SHEET

SB-12-01

Laboratory:	Empirical Laboratories, LLC			SDG:	1103247
Client:	SES, Inc. (S750)			Project:	FTS UST 2008-2010
Matrix:	Soil	Laboratory ID:	1103247-25	File ID:	0324725.D
Sampled:	03/29/11 16:40	Prepared:	03/30/11 16:15	Analyzed:	04/01/11 17:31
Solids:	80.60	Preparation:	EXT_3546	Dilution:	1
Batch:	1C30013	Sequence:	1D09302	Calibration:	1032006
				Instrument:	MS-BNA1

Rev 2nd

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
83-32-9	Acenaphthene		32.0	407	U
208-96-8	Acenaphthylene	64.1	24.6	407	J
120-12-7	Anthracene		33.3	407	U
56-55-3	Benzo(a)anthracene	175	44.4	407	J
50-32-8	Benzo(a)pyrene	216	28.3	407	J
205-99-2	Benzo(b)fluoranthene	333	39.4	407	J
191-24-2	Benzo(g,h,i)perylene		86.3	407	U
207-08-9	Benzo(k)fluoranthene	161	48.1	407	J
218-01-9	Chrysene	245	38.2	407	J
53-70-3	Dibenz(a,h)anthracene		73.9	407	U
206-44-0	Fluoranthene	207	66.6	407	J
86-73-7	Fluorene		32.0	407	U
193-39-5	Indeno(1,2,3-cd)pyrene		56.7	407	U
90-12-0	1-Methylnaphthalene		123	407	U
91-57-6	2-Methylnaphthalene		43.1	407	Q, U
91-20-3	Naphthalene		39.4	407	U
85-01-8	Phenanthrene	77.9	28.3	407	J
129-00-0	Pyrene	510	49.3	407	

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
2-Fluorobiphenyl	4108	3227	78.5	45 - 105	
Nitrobenzene-d5	4108	3716	90.5	35 - 100	
Terphenyl-d14	4108	4088	99.5	30 - 125	

ANALYSIS DATA SHEET

SB-12-02

Laboratory:	Empirical Laboratories, LLC			SDG:	1103247
Client:	SES, Inc. (S750)			Project:	FTS UST 2008-2010
Matrix:	Soil	Laboratory ID:	1103247-26	File ID:	0324726.D
Sampled:	03/29/11 16:50	Prepared:	03/30/11 16:15	Analyzed:	04/01/11 17:59
Solids:	90.89	Preparation:	EXT_3546	Dilution:	1
Batch:	1C30013	Sequence:	1D09302	Calibration:	1032006
Instrument:	MS-BNA1				

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q	Rw Qual
83-32-9	Acenaphthene		28.0	356	U	U
208-96-8	Acenaphthylene	66.5	21.6	356	J	J
120-12-7	Anthracene		29.1	356	U	U
56-55-3	Benzo(a)anthracene	208	38.8	356	J	J
50-32-8	Benzo(a)pyrene	269	24.8	356	J	J
205-99-2	Benzo(b)fluoranthene	427	34.5	356		
191-24-2	Benzo(g,h,i)perylene	161	75.5	356	J	J
207-08-9	Benzo(k)fluoranthene	120	42.1	356	J	J
218-01-9	Chrysene	289	33.4	356	J	J
53-70-3	Dibenz(a,h)anthracene		64.7	356	U	U
206-44-0	Fluoranthene	180	58.2	356	J	J
86-73-7	Fluorene		28.0	356	U	U
193-39-5	Indeno(1,2,3-cd)pyrene	122	49.6	356	J	J
90-12-0	1-Methylnaphthalene		108	356	U	U
91-57-6	2-Methylnaphthalene	50.3	37.8	356	Q, J	J
91-20-3	Naphthalene	35.8	34.5	356	J	J
85-01-8	Phenanthrene	61.7	24.8	356	J	J
129-00-0	Pyrene	517	43.1	356		

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
2-Fluorobiphenyl	3596	3001	83.5	45 - 105	
Nitrobenzene-d5	3596	3111	86.5	35 - 100	
Terphenyl-d14	3596	3454	96.1	30 - 125	

DATA VALIDATION WORKSHEETS
SEMIVOLATILE ORGANICS

Reviewer: Kitchings **Date:** 4/20

Project: FTC419 **SDG:** 1103247 **Matrix/No. Samples:** S-25

I. Technical Holding Times			
A. Sample Preservation, Handling and Transport			
1. Have all samples been preserved correctly?	(Yes)	No	N/A
2. Have sample temperatures been kept at 4° C (+ or - 2 °)?	Yes	(No)	N/A
3. Were all samples received in proper condition?	(Yes)	No	N/A
4. Were any qualifications required based on this information?	Yes	(No)	N/A
Coolers @ 1.7, 1.9 °C.			
B. Chain of Custody			
1. Were all samples properly recorded on COCs?	(Yes)	No	N/A
2. Were correct analyses performed on samples?	(Yes)	No	N/A
C. Holding Times			
1. Were samples extracted and analyzed within acceptable holding times?	(Yes)	No	N/A
2. Were any qualifications required based on this information?	Yes	(No)	N/A

SAMPLED	PREPPED	ANALYZED
3/29	3/30	3/31 4/1 4/2

II. GC/MS Instrument Performance Check			
1. Were instrument performance check samples run for each analysis period?	(Yes)	No	N/A
2. Were ion abundance criteria met for DTFPP analysis?	(Yes)	No	N/A
3. Do laboratory forms match raw data?	Yes	No	(N/A)
4. Were any qualifications required based on this information?	Yes	(No)	N/A

Comments/Qualifications:

1/26
198 base
all criteria
met.

3/30 SB10-01
8909

3/31
9108

01-01 thru 07-01
~~09-02~~ - 09-03
0861

4/1 07-02
9302 10-02-12-02

4/2 9303
SB-0502 198 base
all criteria met

DATA VALIDATION WORKSHEETS
SEMIVOLATILE ORGANICS

Reviewer: Kitchings **Date:** 4/20

Project: FTC 419 **SDG:** 1103247 **Matrix/No. Samples:** S-25

III.	Initial Calibration			
	1. Were correct concentrations of standards used for initial calibration? Were samples analyzed within 12 hours of associated instrument performance check?	(Yes)	No	N/A
	2. Were initial calibration RRFs for all volatile target compounds and system monitoring compounds >or = 0.05? Do recalculations for RRFs agree with reported values?	(Yes)	No	N/A
	3. Were %RSDs < or = 30% for all volatile target compounds? Do recalculations for RSDs agree with reported values?	(Yes)	No	N/A
	4. Were any qualifications required based on this information?	Yes	(No)	N/A

Comments/Qualifications:

Naphthalene

RRFs >0.4
RSDs <14%

1.116
1.120
1.068
.971
.918
.899
.804
.809
~~.968~~

7.703 / 8 = .963

.02341
2465
1103
2216
410
2528
2372

√.11446/7 = .1279 / .963 = 13.3

IV.	Continuing Calibration			
	1. Were continuing calibration samples run at the required frequency, and compared to the correct initial calibration?	(Yes)	No	N/A
	2. Did calculations from raw data agree with laboratory reported values for RRF and %D?	Yes	No	(N/A)
	3. Were continuing calibration RRFs for volatile organic compounds and system monitoring compounds (surrogates) > or = 0.05?	(Yes)	No	N/A
	4. Were %D between initial calibration RRF and the continuing calibration RRFs within + or - 25%?	Yes	(No)	N/A
	5. Were any qualifications required based on this information?	(Yes)	No	N/A

Comments/Qualifications:

8909
<16%
b(a)anthr. (1.139 − 1.137)/1.139 = 0.2%

9302
<16%
Chrysene. (1.123 − 1.021)/1.123 = 9.1%

9108
pyrene @ 28.3 J/UJ
others. <16%
fluorene (1.171 − 1.147)/1.147 = 2.1%

9303
<2%

DATA VALIDATION WORKSHEETS
SEMIVOLATILE ORGANICS

Reviewer: Kitchings **Date:** 4/20

Project: FTC 419 **SDG:** 1103247 **Matrix/No. Samples:** S-25

V.	**Blanks**			
	1. Were any target or non-target compounds reported in laboratory prep or calibration blanks?	Yes	(No)	N/A
	2. Were method blank analyses performed at required frequency, and for each GC/MS system used to analyze samples for each type of analysis (i.e., matrix)?	(Yes)	No	N/A
	3. Were any qualifications required based on this information?	Yes	(No)	N/A

Comments/Qualifications:

30011-BLK1 — U's.

30013 — 10-02, 11-01, 11-02, 12-01, 12-02 — U's.

~~30020~~ 30020 — 10-01 — U's.

VI.	**System Monitoring Compounds (Surrogate Spikes)**			
	1. Were laboratory surrogate recoveries calculated and reported correctly?	(Yes)	No	N/A
	2. Were surrogate recoveries within acceptable limits?	~~Yes~~	(No)	N/A
	3. Were any qualifications required based on surrogate spike QC information?	Yes	(No)	N/A

Comments/Qualifications:

nitrob - high. in 10-01 - no detects

terphenyl - high in 03-02 - no detects.

1: 56.4 - 95.7

2: 52.9 - ~~89.8~~ 91.5

3: 70.8 - 118

VII.	**Matrix Spikes/Matrix Spike Duplicates**			
	1. Were MS/MSD samples analyzed at required frequency for each ample matrix?	(Yes)	No	N/A
	2. Were MS/MSD results for recovery and RPD within advisory limits?	(Yes)	No	N/A
	3. Were Samples used for MS/MSD field blanks?	Yes	(No)	N/A
	4. Were laboratory reported results correctly calculated from raw data?	Yes	No	(N/A)
	5. Were any qualifications required, based on results of MS/MSD samples in conjunction with other QC information?	Yes	(No)	N/A

Comments/Qualifications:

SB-04-01 MS- 55.3-106 MSD 49.1-96.3 diluns. RPD 1.48-21.4

2110/3624 = 58.2%

1793/3648 = 49.2%

317/1951.5 = 16.2%

DATA VALIDATION WORKSHEETS
SEMIVOLATILE ORGANICS

Reviewer: Kitchings Date: 4/20

Project: FTC 419 SDG: 1103247 Matrix/No. Samples: S-25

VIII.	Laboratory Control Sample (LCS)			
	1. Were LCS samples run at correct frequency for each matrix samples?	(Yes)	No	N/A
	2. Were LCS calculations performed correctly, and did laboratory reported values match raw data? Were recoveries within laboratory QC limits?	Yes	(No)	N/A
	4. Were any qualifications required based on LCS data in conjunction with other QC information?	Yes	(No)	N/A

Comments/Qualifications:

wisc 30018 BS1 LCS B(6)f. @ 116 all except ~~ESD~~ ~~@~~ ~~guals~~ J SB50-01 09-01 → ~~a-meth.~~ with RPD @31.7 no guals.

pyrene 3868 / 3333 = 116.1% ~

LCS/LCSD 80.6-114.0 / 68.4-99.7

30013 - BS1 10-2, 11-01, 11-02, 12-01, 12-02 4.46 31.7 no qual

30020 10-01

IX.	Internal Standards			
	1. Were standard area counts within a factor of two (-50% to +100%) from associated calibration standard?	(Yes)	No	N/A
	2. Were retention times of internal standard within + or - 30 seconds of retention time of associated calibration check?	(Yes)	No	N/A
	3. Were any qualifications required based on internal standard results?	Yes	(No)	N/A

Comments/Qualifications:

RTs

all ok. -10-01 IS1 485730 / 549946 = 88.3% ~ 5.445 / 5.46 ~

-04-02 IS4 1259146 / 1363032 = 92.3% ~ 10.776 / 10.781 ~

-11-02 IS 6 711732 / 856951 = 83.1% ~ 15.598 / 15.602 ~

X.	Target Compound Identification			
	1. Are relative retention times (RRTs) within + or - 0.06 RRT units of standard RRT?	Yes	No	(N/A)
	2. Do sample compound spectra meet specified criteria in relation to laboratory standard spectra?	Yes	No	N/A
	3. Were all compounds accounted for on chromatogram?	Yes	No	N/A

Comments/Qualifications:

No raw data - level III

DATA VALIDATION WORKSHEETS
SEMIVOLATILE ORGANICS

Reviewer: Kitchings **Date:** 4/20

Project: FTC-419 **SDG:** 1103247 **Matrix/No. Samples:** S-25

XI.	Compound Quantitation and Reported Contract Required Quantitation Limits (CRQLs)			
	1. Were sample results correctly calculated and reported by laboratory?	Yes	No	(N/A)
	2. Were correct internal standard quantitation ion and RRF used to quantify all compounds for all samples?	Yes	No	N/A
	3. Were CRQLs adjusted to reflect sample dilutions and dry weight factors not accounted for by the method?	Yes	No	N/A
	4. Were any laboratory QA/QC sample results calculated from peaks derived using manual integration?	Yes	No	N/A
	5. Were any qualifications required based on this information?	Yes	No	N/A
	Comments/Qualifications: Level ~~III~~ - no raw data			

XII.	Field QC			
	1. Were any Field Duplicates associated with this SDG?	(Yes)	No	N/A
	a. If Yes, were RPDs acceptable (50% for water samples, 100% for soil samples)?	(Yes)	No	N/A
	2. Were any field blanks or equipment rinsates associated with this SDG?	Yes	(No)	N/A
	a. If yes, were any compounds reported in samples >IDL?	Yes	No	N/A
	b. Were any qualifications required based on this information?	Yes	(No)	N/A
	Comments/Qualifications: 03-01 FD 03-019 U's U's.			

XIII.	Overall Assessment of Data			
	1. Are there any specific concerns or limitations regarding the data in this SDG?	Yes	(No)	N/A
	Comments/Qualifications:			

SDG: 1103258 Project: FTC Bldg 419

Method: Semivolatiles - DRO 8015M Matrix/No. Samples: Soil - 17

Validation Samples: SB-14-01 SB-15-02 SB-17-01 SB-18-02 SB-20-01
SB-13-01 SB-14-02 SB-16-01 SB-17-02 SB-19-01 SB-20-019
SB-13-02 SB-15-01 SB-16-02 SB-18-01 SB-19-02 SB-20-02

Data Validation Report Summary

		Status Code	Comments
1.	Sample Preservation, Handling, and Transport	A	
2.	Chain of Custody	A	
3.	Holding Times	A	
4.	GC/MS Tune/Inst Perf	N/A	
5.	Calibrations	A	
6.	Blanks	A	
7.	Blank Spike/LCS	A	
8.	Matrix Spike	A	see comment #1
9.	Surrogates	A	
10.	Internal Standards	N/A	
11.	Compound Identification	A	
12.	System Performance	A	
13.	Field QC Samples	A	
14.	Overall Assessment	A	

Status Codes:
A = Acceptable
R = Data Rejected
X = Data acceptable but qualified due to problems

Qualifications:

Significant Findings/Recommendations:

#1 • The DRO MS recovery was below the QL limit but the MSD was acceptable as was the LCS – no quals required

Overall Data Quality:

Acceptable as reported.

Validator's Signature: J. Thomas Kitching Date: 4/19/2011

ANALYSIS DATA SHEET

SB-13-01

Laboratory:	Empirical Laboratories, LLC			SDG:	1103258
Client:	SES, Inc. (S750)			Project:	FTS UST 2008-2010
Matrix:	Solid	Laboratory ID:	1103258-02	File ID:	006F0601.D
Sampled:	03/30/11 08:55	Prepared:	03/31/11 15:20	Analyzed:	04/01/11 12:40
Solids:	91.51	Preparation:	EXT_3546	Dilution:	1
Batch:	1C31014	Sequence:	1D09301	Calibration:	1080001
Instrument:	GL-GCFID2				

Rev Qual

CAS NO.	COMPOUND	CONC. (mg/Kg dry)	MDL	MRL	Q
11-84-7	Diesel Range Organics (C10-C28)	53.0	7.13	7.13	N

SYSTEM MONITORING COMPOUND	ADDED (mg/Kg dry)	CONC (mg/Kg dry)	% REC	QC LIMITS	Q
o-Terphenyl	1.419	1.368	96.4	35 - 140	

ANALYSIS DATA SHEET

SB-13-02

Laboratory:	Empirical Laboratories, LLC			SDG:	1103258
Client:	SES, Inc. (S750)			Project:	FTS UST 2008-2010
Matrix:	Soil	Laboratory ID:	1103258-03RE1	File ID:	011F1101.D
Sampled:	03/30/11 09:05	Prepared:	03/31/11 15:20	Analyzed:	04/04/11 15:07
Solids:	80.24	Preparation:	EXT_3546	Dilution:	50
Batch:	1C31014	Sequence:	1D09505	Calibration:	1095001
Instrument:	GL-GCFID2				

Rev Qual

CAS NO.	COMPOUND	CONC. (mg/Kg dry)	MDL	MRL	Q
11-84-7	Diesel Range Organics (C10-C28)	13900	399	399	D

SYSTEM MONITORING COMPOUND	ADDED (mg/Kg dry)	CONC (mg/Kg dry)	% REC	QC LIMITS	Q
o-Terphenyl	1.588	0.000		35 - 140	DU

ANALYSIS DATA SHEET

SB-14-01

Laboratory:	Empirical Laboratories, LLC			SDG:	1103258
Client:	SES, Inc. (S750)			Project:	FTS UST 2008-2010
Matrix:	Soil	Laboratory ID:	1103258-04	File ID:	010F1001.D
Sampled:	03/30/11 09:30	Prepared:	03/31/11 15:20	Analyzed:	04/01/11 14:54
Solids:	90.80	Preparation:	EXT_3546	Dilution:	1
Batch:	1C31014	Sequence:	1D09301	Calibration:	1080001
Instrument:	GL-GCFID2				

Re-Qual

CAS NO.	COMPOUND	CONC. (mg/Kg dry)	MDL	MRL	Q
11-84-7	Diesel Range Organics (C10-C28)	39.0	7.19	7.19	

SYSTEM MONITORING COMPOUND	ADDED (mg/Kg dry)	CONC (mg/Kg dry)	% REC	QC LIMITS	Q
o-Terphenyl	1.430	1.167	81.6	35 - 140	

ANALYSIS DATA SHEET

SB-14-02

Laboratory:	Empirical Laboratories, LLC		SDG:	1103258	
Client:	SES, Inc. (S750)		Project:	FTS UST 2008-2010	
Matrix:	Soil	Laboratory ID:	1103258-05	File ID:	011F1101.D
Sampled:	03/30/11 09:40	Prepared:	03/31/11 15:20	Analyzed:	04/01/11 15:28
Solids:	38.08	Preparation:	EXT_3546	Dilution:	1
Batch:	1C31014	Sequence:	1D09301	Calibration:	1080001
Instrument:	GL-GCFID2				

Re Qual

CAS NO.	COMPOUND	CONC. (mg/Kg dry)	MDL	MRL	Q
11-84-7	Diesel Range Organics (C10-C28)	47.9	17.1	17.1	

SYSTEM MONITORING COMPOUND	ADDED (mg/Kg dry)	CONC (mg/Kg dry)	% REC	QC LIMITS	Q
o-Terphenyl	3.410	1.918	56.2	35 - 140	

ANALYSIS DATA SHEET

SB-15-01

Laboratory:	Empirical Laboratories, LLC			SDG:	1103258
Client:	SES, Inc. (S750)			Project:	FTS UST 2008-2010
Matrix:	Soil	Laboratory ID:	1103258-06	File ID:	012F1201.D
Sampled:	03/30/11 10:10	Prepared:	03/31/11 15:20	Analyzed:	04/01/11 16:01
Solids:	83.55	Preparation:	EXT_3546	Dilution:	1
Batch:	1C31014	Sequence:	1D09301	Calibration:	1080001
Instrument:	GL-GCFID2				

Rev Qual

CAS NO.	COMPOUND	CONC. (mg/Kg dry)	MDL	MRL	Q
11-84-7	Diesel Range Organics (C10-C28)	13.7	7.81	7.81	

SYSTEM MONITORING COMPOUND	ADDED (mg/Kg dry)	CONC (mg/Kg dry)	% REC	QC LIMITS	Q
o-Terphenyl	1.554	1.067	68.7	35 - 140	

ANALYSIS DATA SHEET

SB-15-02

Laboratory:	Empirical Laboratories, LLC			SDG:	1103258
Client:	SES, Inc. (S750)			Project:	FTS UST 2008-2010
Matrix:	Soil	Laboratory ID:	1103258-07	File ID:	013F1301.D
Sampled:	03/30/11 10:15	Prepared:	03/31/11 15:20	Analyzed:	04/01/11 16:35
Solids:	81.04	Preparation:	EXT_3546	Dilution:	1
Batch:	1C31014	Sequence:	1D09301	Calibration:	1080001
Instrument:	GL-GCFID2				

Rev Dual

CAS NO.	COMPOUND	CONC. (mg/Kg dry)	MDL	MRL	Q
11-84-7	Diesel Range Organics (C10-C28)	13.5	8.05	8.05	

SYSTEM MONITORING COMPOUND	ADDED (mg/Kg dry)	CONC (mg/Kg dry)	% REC	QC LIMITS	Q
o-Terphenyl	1.603	1.163	72.5	35 - 140	

ANALYSIS DATA SHEET

SB-16-01

Laboratory:	Empirical Laboratories, LLC			SDG:	1103258
Client:	SES, Inc. (S750)			Project:	FTS UST 2008-2010
Matrix:	Soil	Laboratory ID:	1103258-08RE1	File ID:	004F0401.D
Sampled:	03/30/11 10:30	Prepared:	03/31/11 15:20	Analyzed:	04/05/11 10:47
Solids:	85.95	Preparation:	EXT_3546	Dilution:	50
Batch:	1C31014	Sequence:	1D09510	Calibration:	1095001

Instrument: GL-GCFID2

Rev Qual

CAS NO.	COMPOUND	CONC. (mg/Kg dry)	MDL	MRL	Q
11-84-7	Diesel Range Organics (C10-C28)	8070	372	372	D

SYSTEM MONITORING COMPOUND	ADDED (mg/Kg dry)	CONC (mg/Kg dry)	% REC	QC LIMITS	Q
o-Terphenyl	1.482	0.000		35 - 140	DU

ANALYSIS DATA SHEET

SB-16-02

Laboratory:	Empirical Laboratories, LLC		SDG:	1103258	
Client:	SES, Inc. (S750)		Project:	FTS UST 2008-2010	
Matrix:	Soil	Laboratory ID:	1103258-09RE1	File ID:	013F1301.D
Sampled:	03/30/11 10:40	Prepared:	03/31/11 15:20	Analyzed:	04/04/11 16:15
Solids:	76.43	Preparation:	EXT_3546	Dilution:	20
Batch:	1C31014	Sequence:	1D09505	Calibration:	1095001
Instrument:	GL-GCFID2				

Red Qual

CAS NO.	COMPOUND	CONC. (mg/Kg dry)	MDL	MRL	Q
11-84-7	Diesel Range Organics (C10-C28)	8310	171	171	D

SYSTEM MONITORING COMPOUND	ADDED (mg/Kg dry)	CONC (mg/Kg dry)	% REC	QC LIMITS	Q
o-Terphenyl	1.699	1.796	106	35 - 140	

ANALYSIS DATA SHEET

SB-17-01

Laboratory:	Empirical Laboratories, LLC		SDG:	1103258	
Client:	SES, Inc. (S750)		Project:	FTS UST 2008-2010	
Matrix:	Soil	Laboratory ID:	1103258-10RE1	File ID:	014F1401.D
Sampled:	03/30/11 10:55	Prepared:	03/31/11 15:20	Analyzed:	04/04/11 16:49
Solids:	77.36	Preparation:	EXT_3546	Dilution:	10
Batch:	1C31014	Sequence:	1D09505	Calibration:	1095001
Instrument:	GL-GCFID2				

Rev Qual

CAS NO.	COMPOUND	CONC. (mg/Kg dry)	MDL	MRL	Q
11-84-7	Diesel Range Organics (C10-C28)	3590	82.2	82.2	D

SYSTEM MONITORING COMPOUND	ADDED (mg/Kg dry)	CONC (mg/Kg dry)	% REC	QC LIMITS	Q
o-Terphenyl	1.636	1.319	80.6	35 - 140	

ANALYSIS DATA SHEET

SB-17-02

Laboratory:	Empirical Laboratories, LLC		SDG:	1103258	
Client:	SES, Inc. (S750)		Project:	FTS UST 2008-2010	
Matrix:	Soil	Laboratory ID:	1103258-11	File ID:	018F1801.D
Sampled:	03/30/11 11:00	Prepared:	03/31/11 15:20	Analyzed:	04/01/11 19:23
Solids:	53.04	Preparation:	EXT_3546	Dilution:	1
Batch:	1C31014	Sequence:	1D09301	Calibration:	1080001
Instrument:	GL-GCFID2				

Re qual

CAS NO.	COMPOUND	CONC. (mg/Kg dry)	MDL	MRL	Q
11-84-7	Diesel Range Organics (C10-C28)	163	12.0	12.0	

SYSTEM MONITORING COMPOUND	ADDED (mg/Kg dry)	CONC (mg/Kg dry)	% REC	QC LIMITS	Q
o-Terphenyl	2.387	1.514	63.4	35 - 140	

ANALYSIS DATA SHEET

SB-18-01

Laboratory:	Empirical Laboratories, LLC			SDG:	1103258
Client:	SES, Inc. (S750)			Project:	FTS UST 2008-2010
Matrix:	Soil	Laboratory ID:	1103258-12RE1	File ID:	015F1501.D
Sampled:	03/30/11 11:15	Prepared:	03/31/11 15:20	Analyzed:	04/04/11 17:23
Solids:	59.62	Preparation:	EXT_3546	Dilution:	10
Batch:	1C31014	Sequence:	1D09505	Calibration:	1095001

Instrument: GL-GCFID2

Rev Qual

CAS NO.	COMPOUND	CONC. (mg/Kg dry)	MDL	MRL	Q
11-84-7	Diesel Range Organics (C10-C28)	3890	109	109	D

SYSTEM MONITORING COMPOUND	ADDED (mg/Kg dry)	CONC (mg/Kg dry)	% REC	QC LIMITS	Q
o-Terphenyl	2.178	1.461	67.1	35 - 140	

ANALYSIS DATA SHEET

SB-18-02

Laboratory:	Empirical Laboratories, LLC		SDG:	1103258	
Client:	SES, Inc. (S750)		Project:	FTS UST 2008-2010	
Matrix:	Soil	Laboratory ID:	1103258-13	File ID:	020F2001.D
Sampled:	03/30/11 11:25	Prepared:	03/31/11 15:20	Analyzed:	04/01/11 20:29
Solids:	80.61	Preparation:	EXT_3546	Dilution:	1
Batch:	1C31014	Sequence:	1D09301	Calibration:	1080001

Instrument: GL-GCFID2

Rev 2nd

CAS NO.	COMPOUND	CONC. (mg/Kg dry)	MDL	MRL	Q
11-84-7	Diesel Range Organics (C10-C28)	296	8.20	8.20	

SYSTEM MONITORING COMPOUND	ADDED (mg/Kg dry)	CONC (mg/Kg dry)	% REC	QC LIMITS	Q
o-Terphenyl	1.632	1.556	95.3	35 - 140	

ANALYSIS DATA SHEET

SB-19-01

Laboratory:	Empirical Laboratories, LLC			SDG:	1103258
Client:	SES, Inc. (S750)			Project:	FTS UST 2008-2010
Matrix:	Soil	Laboratory ID:	1103258-14	File ID:	021F2101.D
Sampled:	03/30/11 14:00	Prepared:	03/31/11 15:20	Analyzed:	04/01/11 21:03
Solids:	91.10	Preparation:	EXT_3546	Dilution:	1
Batch:	1C31014	Sequence:	1D09301	Calibration:	1080001
Instrument:	GL-GCFID2				

Rev Qual u

CAS NO.	COMPOUND	CONC. (mg/Kg dry)	MDL	MRL	Q
11-84-7	Diesel Range Organics (C10-C28)		7.16	7.16	U

SYSTEM MONITORING COMPOUND	ADDED (mg/Kg dry)	CONC (mg/Kg dry)	% REC	QC LIMITS	Q
o-Terphenyl	1.426	0.8521	59.8	35 - 140	

ANALYSIS DATA SHEET

SB-19-02

Laboratory:	Empirical Laboratories, LLC			SDG:	1103258
Client:	SES, Inc. (S750)			Project:	FTS UST 2008-2010
Matrix:	Soil	Laboratory ID:	1103258-15	File ID:	022F2201.D
Sampled:	03/30/11 14:05	Prepared:	03/31/11 15:20	Analyzed:	04/01/11 21:36
Solids:	83.85	Preparation:	EXT_3546	Dilution:	1
Batch:	1C31014	Sequence:	1D09301	Calibration:	1080001
Instrument:	GL-GCFID2				

Re Qual

CAS NO.	COMPOUND	CONC. (mg/Kg dry)	MDL	MRL	Q
11-84-7	Diesel Range Organics (C10-C28)	20.2	7.63	7.63	

SYSTEM MONITORING COMPOUND	ADDED (mg/Kg dry)	CONC (mg/Kg dry)	% REC	QC LIMITS	Q
o-Terphenyl	1.519	0.8590	56.5	35 - 140	

ANALYSIS DATA SHEET

SB-20-01

Laboratory:	Empirical Laboratories, LLC			SDG:	1103258
Client:	SES, Inc. (S750)			Project:	FTS UST 2008-2010
Matrix:	Soil	Laboratory ID:	1103258-16	File ID:	023F2301.D
Sampled:	03/30/11 14:15	Prepared:	03/31/11 15:20	Analyzed:	04/01/11 22:09
Solids:	77.08	Preparation:	EXT_3546	Dilution:	1
Batch:	1C31014	Sequence:	1D09301	Calibration:	1080001

Instrument: GL-GCFID2

Rev Qual

CAS NO.	COMPOUND	CONC. (mg/Kg dry)	MDL	MRL	Q
11-84-7	Diesel Range Organics (C10-C28)	16.6	8.41	8.41	

SYSTEM MONITORING COMPOUND	ADDED (mg/Kg dry)	CONC (mg/Kg dry)	% REC	QC LIMITS	Q
o-Terphenyl	1.674	0.8871	53.0	35 - 140	

ANALYSIS DATA SHEET

SB-20-019

Laboratory:	Empirical Laboratories, LLC		SDG:	1103258	
Client:	SES, Inc. (S750)		Project:	FTS UST 2008-2010	
Matrix:	Soil	Laboratory ID:	1103258-17	File ID:	024F2401.D
Sampled:	03/30/11 14:15	Prepared:	03/31/11 15:20	Analyzed:	04/01/11 22:43
Solids:	69.39	Preparation:	EXT_3546	Dilution:	1
Batch:	1C31014	Sequence:	1D09301	Calibration:	1080001
				Instrument:	GL-GCFID2

Rev Qual

CAS NO.	COMPOUND	CONC. (mg/Kg dry)	MDL	MRL	Q
11-84-7	Diesel Range Organics (C10-C28)	17.3	9.53	9.53	

SYSTEM MONITORING COMPOUND	ADDED (mg/Kg dry)	CONC (mg/Kg dry)	% REC	QC LIMITS	Q
o-Terphenyl	1.896	1.009	53.2	35 - 140	

ANALYSIS DATA SHEET

SB-20-02

Laboratory:	Empirical Laboratories, LLC			SDG:	1103258
Client:	SES, Inc. (S750)			Project:	FTS UST 2008-2010
Matrix:	Soil	Laboratory ID:	1103258-18	File ID:	025F2501.D
Sampled:	03/30/11 14:20	Prepared:	03/31/11 15:20	Analyzed:	04/01/11 23:16
Solids:	77.42	Preparation:	EXT_3546	Dilution:	1
Batch:	1C31014	Sequence:	1D09301	Calibration:	1080001
Instrument:	GL-GCFID2				

Rev Qual u

CAS NO.	COMPOUND	CONC. (mg/Kg dry)	MDL	MRL	Q
11-84-7	Diesel Range Organics (C10-C28)		8.43	8.43	U

SYSTEM MONITORING COMPOUND	ADDED (mg/Kg dry)	CONC (mg/Kg dry)	% REC	QC LIMITS	Q
o-Terphenyl	1.678	0.8403	50.1	35 - 140	

DATA VALIDATION WORKSHEETS
SEMIVOLATILE ORGANICS

Reviewer: Kitchings **Date:** 4/19

Project: FTC 419 **SDG:** 1103258 **Matrix/No. Samples:** S-17

I. Technical Holding Times			
A. Sample Preservation, Handling and Transport			
1. Have all samples been preserved correctly?	Yes	No	N/A
2. Have sample temperatures been kept at 4° C (+ or - 2 °)?	Yes	No	N/A
3. Were all samples received in proper condition?	Yes	No	N/A
4. Were any qualifications required based on this information?	Yes	No	N/A
Coolers @ 2.4°C			
B. Chain of Custody			
1. Were all samples properly recorded on COCs?	Yes	No	N/A
2. Were correct analyses performed on samples?	Yes	No	N/A
C. Holding Times			
1. Were samples extracted and analyzed within acceptable holding times?	Yes	No	N/A
2. Were any qualifications required based on this information?	Yes	No	N/A

SAMPLED	PREPPED	ANALYZED
3/30	3/31	4/1 4/4 4/5

II. GC/MS Instrument Performance Check			
1. Were instrument performance check samples run for each analysis period?	Yes	No	N/A
2. Were ion abundance criteria met for DTFPP analysis?	Yes	No	N/A
3. Do laboratory forms match raw data?	Yes	No	N/A
4. Were any qualifications required based on this information?	Yes	No	N/A

Comments/Qualifications:

DATA VALIDATION WORKSHEETS
SEMIVOLATILE ORGANICS

Reviewer: Kitchings **Date:** 4/19

Project: FTC419 **SDG:** 410358 **Matrix/No. Samples:** S-17

III. Initial Calibration			
1. Were correct concentrations of standards used for initial calibration? Were samples analyzed within 12 hours of associated instrument performance check?	(Yes)	No	N/A
2. Were initial calibration RRFs for all volatile target compounds and system monitoring compounds >or = 0.05? Do recalculations for RRFs agree with reported values?	(Yes)	No	N/A
3. Were %RSDs < or = 30% for all volatile target compounds? Do recalculations for RSDs agree with reported values?	(Yes)	No	N/A
4. Were any qualifications required based on this information?	Yes	(No)	N/A

Comments/Qualifications:

~~4/4 @ 10:35ff~~

3/18 @ 21:13ff.

3222 3326
2700
2500
2541
2410

15695 / 6 = 2617

366025
6889
13689
5776
42849
84681

519909 / 5 = 322.5 / 2617 = 12.3%

IV. Continuing Calibration			
1. Were continuing calibration samples run at the required frequency, and compared to the correct initial calibration?	(Yes)	No	N/A
2. Did calculations from raw data agree with laboratory reported values for RRF and %D?	Yes	(No)	N/A
3. Were continuing calibration RRFs for volatile organic compounds and system monitoring compounds (surrogates) > or = 0.05?	(Yes)	No	N/A
4. Were %D between initial calibration RRF and the continuing calibration RRFs within + or - 25%?	(Yes)	No	N/A
5. Were any qualifications required based on this information?	Yes	(No)	N/A

Comments/Qualifications:

4/1
9301-CCV1
13-01
14-01, 02
15-01, 02
11.7

CCV2
17-02
18-02
19-01, 02
20-01, 019, 02
14.4
2617 - 2240 / 2617 = 14.4%

CCV3
15.5%

4/4
9505-CCV1
13-02 RE
16-02 RE
17-01 RE
18-01 RE
1943 - 1801 / 1801 = 7.8%

CCV2
12%

4/5
9510 CCV1
16-01 RE
8.8

11.2 CCV2
2003 - 1801 / 1801 = 11.2%

DATA VALIDATION WORKSHEETS
SEMIVOLATILE ORGANICS

Reviewer: Kitchings **Date:** 4/19

Project: FTC-419 **SDG:** 1103258 **Matrix/No. Samples:** 5-17

V.	**Blanks**			
	1. Were any target or non-target compounds reported in laboratory prep or calibration blanks?	Yes	No	N/A
	2. Were method blank analyses performed at required frequency, and for each GC/MS system used to analyze samples for each type of analysis (i.e., matrix)?	Yes	No	N/A
	3. Were any qualifications required based on this information?	Yes	No	N/A

Comments/Qualifications:

1014-BLK1
4/1
u's.

VI.	**System Monitoring Compounds (Surrogate Spikes)**			
	1. Were laboratory surrogate recoveries calculated and reported correctly?	Yes	No	N/A
	2. Were surrogate recoveries within acceptable limits?	Yes	No	N/A
	3. Were any qualifications required based on surrogate spike QC information?	Yes	No	N/A

Comments/Qualifications:

QC. limits 35-140 50.1-106 ✓ all ok ✓ 13-02-RE 16-01-RE } diluted out

VII.	**Matrix Spikes/Matrix Spike Duplicates**			
	1. Were MS/MSD samples analyzed at required frequency for each ample matrix?	Yes	No	N/A
	2. Were MS/MSD results for recovery and RPD within advisory limits?	Yes	No	N/A
	3. Were Samples used for MS/MSD field blanks?	Yes	No	N/A
	4. Were laboratory reported results correctly calculated from raw data?	Yes	No	N/A
	5. Were any qualifications required, based on results of MS/MSD samples in conjunction with other QC information?	Yes	No	N/A

Comments/Qualifications:

1-1 / 1-6

31014-MS/MSD

low 73.01-53.00 / 71.42 = 28.0% ✓

101.9-53.00 / 70.96 = 68.9% ✓

% Rs 50-150
RSD <50

DATA VALIDATION WORKSHEETS
SEMIVOLATILE ORGANICS

Reviewer: Kitchings **Date:** 4/19

Project: TRC-419 **SDG:** 1103258 **Matrix/No. Samples:** S-17

VIII.	Laboratory Control Sample (LCS)			
	1. Were LCS samples run at correct frequency for each matrix samples?	Yes	No	N/A
	2. Were LCS calculations performed correctly, and did laboratory reported values match raw data? Were recoveries within laboratory QC limits?	Yes	No	N/A
	4. Were any qualifications required based on LCS data in conjunction with other QC information?	Yes	No	N/A
	Comments/Qualifications: 1014-BS1 $\frac{51.06}{66.67} = 76.62\%$			
IX.	**Internal Standards**			
	1. Were standard area counts within a factor of two (-50% to +100%) from associated calibration standard?	Yes	No	N/A
	2. Were retention times of internal standard within + or - 30 seconds of retention time of associated calibration check?	Yes	No	N/A
	3. Were any qualifications required based on internal standard results?	Yes	No	N/A
	Comments/Qualifications:			
X.	**Target Compound Identification**			
	1. Are relative retention times (RRTs) within + or - 0.06 RRT units of standard RRT?	Yes	No	N/A
	2. Do sample compound spectra meet specified criteria in relation to laboratory standard spectra?	Yes	No	N/A
	3. Were all compounds accounted for on chromatogram?	Yes	No	N/A
	Comments/Qualifications: Level III - no raw data			

DATA VALIDATION WORKSHEETS
SEMIVOLATILE ORGANICS

Reviewer: Kitchings **Date:** 4/19

Project: FTC-419 **SDG:** 1103258 **Matrix/No. Samples:** S-17

XI. Compound Quantitation and Reported Contract Required Quantitation Limits (CRQLs)			
1. Were sample results correctly calculated and reported by laboratory?	Yes	No	N/A
2. Were correct internal standard quantitation ion and RRF used to quantify all compounds for all samples?	Yes	No	N/A
3. Were CRQLs adjusted to reflect sample dilutions and dry weight factors not accounted for by the method?	Yes	No	N/A
4. Were any laboratory QA/QC sample results calculated from peaks derived using manual integration?	Yes	No	N/A
5. Were any qualifications required based on this information?	Yes	No	N/A
Comments/Qualifications: Level III - no raw data			

XII. Field QC			
1. Were any Field Duplicates associated with this SDG?	Yes	No	N/A
a. If Yes, were RPDs acceptable (50% for water samples, 100% for soil samples)?	Yes	No	N/A
2. Were any field blanks or equipment rinsates associated with this SDG?	Yes	No	N/A
a. If yes, were any compounds reported in samples >IDL?	Yes	No	N/A
b. Were any qualifications required based on this information?	Yes	No	N/A

Comments/Qualifications:

FD

20-01 20-019

16.6 17.3

-4.17

XIII. Overall Assessment of Data			
1. Are there any specific concerns or limitations regarding the data in this SDG?	Yes	No	N/A
Comments/Qualifications:			

SDG: 1103258 Project: FTC Bldg 419

Method: Semivolatiles PAHs 8270C Matrix/No. Samples: Soil-17

Validation Samples: SB-14-01 SB-15-02 SB-17-01 SB-18-02 SB-20-01
SB-13-01 SB-14-02 SB-16-01 SB-17-02 SB-19-01 SB-20-019
SB-13-02 SB-15-01 SB-16-02 SB-18-01 SB-19-02 SB-20-02

Data Validation Report Summary

		Status Code	Comments
1.	Sample Preservation, Handling, and Transport	A	
2.	Chain of Custody	A	
3.	Holding Times	A	
4.	GC/MS Tune/Inst Perf	A	
5.	Calibrations	A	
6.	Blanks	A	
7.	Blank Spike/LCS	X	
8.	Matrix Spike	X	
9.	Surrogates	X	
10.	Internal Standards	X	
11.	Compound Identification	A	
12.	System Performance	A	
13.	Field QC Samples	A	
14.	Overall Assessment	X	

Status Codes:
A = Acceptable
R = Data Rejected
X = Data acceptable but qualified due to problems

Qualifications:

7a • High recoveries for the nitrobenzene-d5 surrogate in Samples SB-13-02; SB-16-01 & SB-16-02 resulted in "J" qualifiers for all detects in those samples.

11a. High recoveries in the LCS resulted in "J" qualifiers for the following:

~~Acenaphthylene~~ Acenaphthene	Anthracene	Benzo(b)...	fluorene
	13-01, 14-01	13-01, 14-01	~~13-01~~ 14-01
		15-02,	16-01, 16-02
			17-01, 17-02
			18-02,

8a benzo(b)... had high ms/msd recoveries & was qualified as "J" in 13-01, 14-01 & 15-02.

~~Significant Findings/Recommendations~~:

10a Low recoveries for IS-perylene-d12 for samples SB-13-02, SB-14-01, SB-14-02, SB-16-01 & SB-17-01 resulted in "UJ/J" qualifiers for the associated compounds.

Overall Data Quality:

Accept as qualified.

Validator's Signature: J. Thomas K Hodges Date: 4/19/2011

ANALYSIS DATA SHEET

SB-13-01

Laboratory:	Empirical Laboratories, LLC		SDG:	1103258	
Client:	SES, Inc. (S750)		Project:	FTS UST 2008-2010	
Matrix:	Solid	Laboratory ID:	1103258-02	File ID:	0325802.D
Sampled:	03/30/11 08:55	Prepared:	03/31/11 12:30	Analyzed:	04/01/11 19:24
Solids:	91.51	Preparation:	EXT_3546	Dilution:	1
Batch:	1C31013	Sequence: 1D09302	Calibration:	1032006	Instrument: MS-BNA1

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
83-32-9	Acenaphthene		27.3	347	Q, U
208-96-8	Acenaphthylene	210	21.0	347	J
120-12-7	Anthracene	56.8	28.4	347	Q, J
56-55-3	Benzo(a)anthracene	918	37.8	347	
50-32-8	Benzo(a)pyrene	1010	24.2	347	
205-99-2	Benzo(b)fluoranthene	1590	33.6	347	N, Q
191-24-2	Benzo(g,h,i)perylene	490	73.6	347	N
207-08-9	Benzo(k)fluoranthene	567	41.0	347	
218-01-9	Chrysene	1020	32.6	347	
53-70-3	Dibenz(a,h)anthracene	127	63.0	347	J
206-44-0	Fluoranthene	981	56.7	347	
86-73-7	Fluorene		27.3	347	Q, U
193-39-5	Indeno(1,2,3-cd)pyrene	359	48.3	347	N
90-12-0	1-Methylnaphthalene		105	347	U
91-57-6	2-Methylnaphthalene	49.0	36.8	347	J
91-20-3	Naphthalene	46.9	33.6	347	J
85-01-8	Phenanthrene	128	24.2	347	J
129-00-0	Pyrene	2690	42.0	347	

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
2-Fluorobiphenyl	3502	2903	82.9	45 - 105	
Nitrobenzene-d5	3502	3322	94.8	35 - 100	
Terphenyl-d14	3502	3759	107	30 - 125	

ANALYSIS DATA SHEET

SB-13-02

Laboratory:	Empirical Laboratories, LLC		SDG:	1103258	
Client:	SES, Inc. (S750)		Project:	FTS UST 2008-2010	
Matrix:	Soil	Laboratory ID:	1103258-03	File ID:	0325803D.D
Sampled:	03/30/11 09:05	Prepared:	03/31/11 12:30	Analyzed:	04/02/11 22:21
Solids:	80.24	Preparation:	EXT_3546	Dilution:	5
Batch:	1C31013	Sequence:	1D09303	Calibration:	1032006
Instrument:	MS-BNA1				

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q	Rev Qual
83-32-9	Acenaphthene		154	1950	Q, U	U
208-96-8	Acenaphthylene		118	1950	U	
120-12-7	Anthracene		160	1950	Q, U	
56-55-3	Benzo(a)anthracene		213	1950	U	
50-32-8	Benzo(a)pyrene		136	1950	S, U	UJ 10a
205-99-2	Benzo(b)fluoranthene		189	1950	X, Q, S, U	UJ 10a
191-24-2	Benzo(g,h,i)perylene		414	1950	S, U	
207-08-9	Benzo(k)fluoranthene		231	1950	S, U	
218-01-9	Chrysene		183	1950	U	U
53-70-3	Dibenz(a,h)anthracene		355	1950	S, U	UJ 10a
206-44-0	Fluoranthene		319	1950	U	U
86-73-7	Fluorene		154	1950	Q, U	U
193-39-5	Indeno(1,2,3-cd)pyrene		272	1950	S, U	UJ 10a
90-12-0	1-Methylnaphthalene	5460	592	1950	D	J 7a
91-57-6	2-Methylnaphthalene	8400	207	1950	D	J 7a
91-20-3	Naphthalene	2690	189	1950	D	J 7a
85-01-8	Phenanthrene	1640	136	1950	J, D	J 7a
129-00-0	Pyrene	838	237	1950	J, D	J 7a

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
2-Fluorobiphenyl	3944	3581	90.8	45 - 105	
Nitrobenzene-d5	3944	7463	189	35 - 100	*
Terphenyl-d14	3944	4784	121	30 - 125	

ANALYSIS DATA SHEET

SB-14-01

Laboratory:	Empirical Laboratories, LLC		SDG:	1103258	
Client:	SES, Inc. (S750)		Project:	FTS UST 2008-2010	
Matrix:	Soil	Laboratory ID:	1103258-04	File ID:	0325804.D
Sampled:	03/30/11 09:30	Prepared:	03/31/11 12:30	Analyzed:	04/02/11 22:50
Solids:	90.80	Preparation:	EXT_3546	Dilution:	1
Batch:	1C31013	Sequence:	1D09303	Calibration:	1032006
				Instrument:	MS-BNA1

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q	Rev Qual
83-32-9	Acenaphthene		28.1	356	Q, U	U
208-96-8	Acenaphthylene	560	21.6	356		~~J~~ Ha
120-12-7	Anthracene	139	29.2	356	Q, J	J 11a
56-55-3	Benzo(a)anthracene	2890	38.9	356		
50-32-8	Benzo(a)pyrene	3100	24.8	356	S	J 10a
205-99-2	Benzo(b)fluoranthene	3560	34.6	356	Q, S, X	J 11a, 8a
191-24-2	Benzo(g,h,i)perylene	1730	75.6	356	S	J 10a
207-08-9	Benzo(k)fluoranthene	1640	42.1	356	S	↓ ↓
218-01-9	Chrysene	2880	33.5	356		
53-70-3	Dibenz(a,h)anthracene	495	64.8	356	S	J 10a
206-44-0	Fluoranthene	1590	58.3	356		
86-73-7	Fluorene	113	28.1	356	Q, J	J 11a
193-39-5	Indeno(1,2,3-cd)pyrene	1430	49.7	356	S	J 10a
90-12-0	1-Methylnaphthalene		108	356	U	J U
91-57-6	2-Methylnaphthalene	149	37.8	356	J	J
91-20-3	Naphthalene	175	34.6	356	J	
85-01-8	Phenanthrene	271	24.8	356	J	
129-00-0	Pyrene	5850	43.2	356		

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
2-Fluorobiphenyl	3599	2867	79.7	45 - 105	
Nitrobenzene-d5	3599	3144	87.3	35 - 100	
Terphenyl-d14	3599	4893	136	30 - 125	*

ANALYSIS DATA SHEET

SB-14-02

Laboratory:	Empirical Laboratories, LLC		SDG:	1103258	
Client:	SES, Inc. (S750)		Project:	FTS UST 2008-2010	
Matrix:	Soil	Laboratory ID:	1103258-05	File ID:	0325805.D
Sampled:	03/30/11 09:40	Prepared:	03/31/11 12:30	Analyzed:	04/01/11 20:50
Solids:	38.08	Preparation:	EXT_3546	Dilution:	1
Batch:	1C31013	Sequence:	1D09302	Calibration:	1032006
Instrument:	MS-BNA1				

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q	Rev Qual
83-32-9	Acenaphthene		67.4	855	Q, U	U
208-96-8	Acenaphthylene		51.8	855	U	U
120-12-7	Anthracene		70.0	855	Q, U	U
56-55-3	Benzo(a)anthracene		93.3	855	U	U
50-32-8	Benzo(a)pyrene		59.6	855	S, U	UJ 10a
205-99-2	Benzo(b)fluoranthene		82.9	855	Q, S, U	↓ ↓
191-24-2	Benzo(g,h,i)perylene		181	855	S, U	
207-08-9	Benzo(k)fluoranthene		101	855	S, U	↓
218-01-9	Chrysene		80.3	855	U	U
53-70-3	Dibenz(a,h)anthracene		155	855	S, U	UJ 10a
206-44-0	Fluoranthene		140	855	U	U
86-73-7	Fluorene		67.4	855	Q, U	U
193-39-5	Indeno(1,2,3-cd)pyrene		119	855	S, U	UJ 10a
90-12-0	1-Methylnaphthalene		259	855	U	U
91-57-6	2-Methylnaphthalene		90.7	855	U	↓
91-20-3	Naphthalene		82.9	855	U	
85-01-8	Phenanthrene		59.6	855	U	
129-00-0	Pyrene	197	104	855	J	J

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
2-Fluorobiphenyl	8638	6739	78.0	45 - 105	
Nitrobenzene-d5	8638	7491	86.7	35 - 100	
Terphenyl-d14	8638	9521	110	30 - 125	

ANALYSIS DATA SHEET

SB-15-01

Laboratory: Empirical Laboratories, LLC
SDG: 1103258
Client: SES, Inc. (S750)
Project: FTS UST 2008-2010
Matrix: Soil
Laboratory ID: 1103258-06
File ID: 0325806.D
Sampled: 03/30/11 10:10
Prepared: 03/31/11 12:30
Analyzed: 04/02/11 23:48
Solids: 83.55
Preparation: EXT_3546
Dilution: 1
Batch: 1C31013
Sequence: 1D09303
Calibration: 1032006
Instrument: MS-BNA1

Rev Qual u

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
83-32-9	Acenaphthene		29.7	377	Q, U
208-96-8	Acenaphthylene		22.9	377	U
120-12-7	Anthracene		30.9	377	Q, U
56-55-3	Benzo(a)anthracene		41.2	377	U
50-32-8	Benzo(a)pyrene		26.3	377	U
205-99-2	Benzo(b)fluoranthene		36.6	377	Q, X, U
191-24-2	Benzo(g,h,i)perylene		80.0	377	U
207-08-9	Benzo(k)fluoranthene		44.6	377	U
218-01-9	Chrysene		35.4	377	U
53-70-3	Dibenz(a,h)anthracene		68.6	377	U
206-44-0	Fluoranthene		61.7	377	U
86-73-7	Fluorene		29.7	377	Q, U
193-39-5	Indeno(1,2,3-cd)pyrene		52.6	377	U
90-12-0	1-Methylnaphthalene		114	377	U
91-57-6	2-Methylnaphthalene		40.0	377	U
91-20-3	Naphthalene		36.6	377	U
85-01-8	Phenanthrene		26.3	377	U
129-00-0	Pyrene		45.7	377	U

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
2-Fluorobiphenyl	3812	3652	95.8	45 - 105	
Nitrobenzene-d5	3812	3654	95.9	35 - 100	
Terphenyl-d14	3812	4127	108	30 - 125	

ANALYSIS DATA SHEET

SB-15-02

Laboratory: Empirical Laboratories, LLC
SDG: 1103258
Client: SES, Inc. (S750)
Project: FTS UST 2008-2010
Matrix: Soil
Laboratory ID: 1103258-07
File ID: 0325807.D
Sampled: 03/30/11 10:15
Prepared: 03/31/11 12:30
Analyzed: 04/03/11 00:17
Solids: 81.04
Preparation: EXT_3546
Dilution: 1
Batch: 1C31013
Sequence: 1D09303
Calibration: 1032006
Instrument: MS-BNA1

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
83-32-9	Acenaphthene		31.2	397	Q, U
208-96-8	Acenaphthylene	47.2	24.0	397	J
120-12-7	Anthracene		32.5	397	Q, U
56-55-3	Benzo(a)anthracene	332	43.3	397	J
50-32-8	Benzo(a)pyrene	223	27.6	397	J
205-99-2	Benzo(b)fluoranthene	337	38.5	397	Q, X, J
191-24-2	Benzo(g,h,i)perylene	118	84.1	397	J
207-08-9	Benzo(k)fluoranthene	143	46.9	397	J
218-01-9	Chrysene	336	37.3	397	J
53-70-3	Dibenz(a,h)anthracene		72.1	397	U
206-44-0	Fluoranthene	397	64.9	397	J
86-73-7	Fluorene		31.2	397	Q, U
193-39-5	Indeno(1,2,3-cd)pyrene		55.3	397	U
90-12-0	1-Methylnaphthalene		120	397	U
91-57-6	2-Methylnaphthalene		42.1	397	U
91-20-3	Naphthalene		38.5	397	U
85-01-8	Phenanthrene	139	27.6	397	J
129-00-0	Pyrene	640	48.1	397	

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
2-Fluorobiphenyl	4006	3494	87.2	45 - 105	
Nitrobenzene-d5	4006	3131	78.1	35 - 100	
Terphenyl-d14	4006	3889	97.1	30 - 125	

Rev Qual

J J J

ANALYSIS DATA SHEET

SB-16-01

Laboratory:	Empirical Laboratories, LLC			SDG:	1103258
Client:	SES, Inc. (S750)			Project:	FTS UST 2008-2010
Matrix:	Soil	Laboratory ID:	1103258-08	File ID:	0325808D.D
Sampled:	03/30/11 10:30	Prepared:	03/31/11 12:30	Analyzed:	04/03/11 00:45
Solids:	85.95	Preparation:	EXT_3546	Dilution:	5
Batch:	1C31013	Sequence:	1D09303	Calibration:	1032006
Instrument:	MS-BNA1				

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q	Rev Qual
83-32-9	Acenaphthene		149	1890	Q, U	U
208-96-8	Acenaphthylene		115	1890	U	
120-12-7	Anthracene		155	1890	Q, U	
56-55-3	Benzo(a)anthracene		207	1890	U	
50-32-8	Benzo(a)pyrene		132	1890	S, U	UJ 10a
205-99-2	Benzo(b)fluoranthene		184	1890	Q, S, X, U	
191-24-2	Benzo(g,h,i)perylene		402	1890	S, U	
207-08-9	Benzo(k)fluoranthene		224	1890	S, U	
218-01-9	Chrysene		178	1890	U	U
53-70-3	Dibenz(a,h)anthracene		344	1890	S, U	UJ 10a
206-44-0	Fluoranthene		310	1890	U	U
86-73-7	Fluorene	1620	149	1890	Q, J, D	J 7a,b
193-39-5	Indeno(1,2,3-cd)pyrene		264	1890	S, U	UJ 10a
90-12-0	1-Methylnaphthalene	9880	574	1890	D	J 7a
91-57-6	2-Methylnaphthalene	15500	201	1890	D	
91-20-3	Naphthalene	4910	184	1890	D	
85-01-8	Phenanthrene	4120	132	1890	D	
129-00-0	Pyrene	1020	230	1890	J, D	

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
2-Fluorobiphenyl	3827	3857	101	45 - 105	
Nitrobenzene-d5	3827	5102	133	35 - 100	*
Terphenyl-d14	3827	4699	123	30 - 125	

ANALYSIS DATA SHEET

SB-16-02

Laboratory:	Empirical Laboratories, LLC		SDG:	1103258	
Client:	SES, Inc. (S750)		Project:	FTS UST 2008-2010	
Matrix:	Soil	Laboratory ID:	1103258-09	File ID:	0325809D.D
Sampled:	03/30/11 10:40	Prepared:	03/31/11 12:30	Analyzed:	04/03/11 01:14
Solids:	76.43	Preparation:	EXT_3546	Dilution:	5
Batch:	1C31013	Sequence:	1D09303	Calibration:	1032006
Instrument:	MS-BNA1				

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
83-32-9	Acenaphthene		169	2140	Q, U
208-96-8	Acenaphthylene		130	2140	U
120-12-7	Anthracene		175	2140	Q, U
56-55-3	Benzo(a)anthracene		234	2140	U
50-32-8	Benzo(a)pyrene		149	2140	U
205-99-2	Benzo(b)fluoranthene		208	2140	Q, X, U
191-24-2	Benzo(g,h,i)perylene		455	2140	U
207-08-9	Benzo(k)fluoranthene		253	2140	U
218-01-9	Chrysene		201	2140	U
53-70-3	Dibenz(a,h)anthracene		390	2140	U
206-44-0	Fluoranthene		351	2140	U
86-73-7	Fluorene	1650	169	2140	Q, J, D
193-39-5	Indeno(1,2,3-cd)pyrene		299	2140	U
90-12-0	1-Methylnaphthalene	9240	650	2140	D
91-57-6	2-Methylnaphthalene	14600	227	2140	D
91-20-3	Naphthalene	4160	208	2140	D
85-01-8	Phenanthrene	3880	149	2140	D
129-00-0	Pyrene	877	260	2140	J, D

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
2-Fluorobiphenyl	4332	4379	101	45 - 105	
Nitrobenzene-d5	4332	4802	111	35 - 100	*
Terphenyl-d14	4332	4848	112	30 - 125	

ANALYSIS DATA SHEET

SB-17-01

Laboratory:	Empirical Laboratories, LLC			SDG:	1103258
Client:	SES, Inc. (S750)			Project:	FTS UST 2008-2010
Matrix:	Soil	Laboratory ID:	1103258-10	File ID:	0325810D.D
Sampled:	03/30/11 10:55	Prepared:	03/31/11 12:30	Analyzed:	04/03/11 01:43
Solids:	77.36	Preparation:	EXT_3546	Dilution:	5
Batch:	1C31013	Sequence:	1D09303	Calibration:	1032006
Instrument:	MS-BNA1				

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
83-32-9	Acenaphthene		160	2020	Q, U
208-96-8	Acenaphthylene		123	2020	U
120-12-7	Anthracene		166	2020	Q, U
56-55-3	Benzo(a)anthracene		221	2020	U
50-32-8	Benzo(a)pyrene		141	2020	S, U
205-99-2	Benzo(b)fluoranthene		196	2020	Q, S, X, U
191-24-2	Benzo(g,h,i)perylene		430	2020	S, U
207-08-9	Benzo(k)fluoranthene		239	2020	S, U
218-01-9	Chrysene		190	2020	U
53-70-3	Dibenz(a,h)anthracene		368	2020	S, U
206-44-0	Fluoranthene		331	2020	U
86-73-7	Fluorene	759	160	2020	Q, J, D
193-39-5	Indeno(1,2,3-cd)pyrene		282	2020	S, U
90-12-0	1-Methylnaphthalene	2130	614	2020	D
91-57-6	2-Methylnaphthalene	3030	215	2020	D
91-20-3	Naphthalene	928	196	2020	J, D
85-01-8	Phenanthrene	876	141	2020	J, D
129-00-0	Pyrene	874	245	2020	J, D

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
2-Fluorobiphenyl	4090	3256	79.6	45 - 105	
Nitrobenzene-d5	4090	3605	88.1	35 - 100	
Terphenyl-d14	4090	4803	117	30 - 125	

ANALYSIS DATA SHEET

SB-17-02

Laboratory: Empirical Laboratories, LLC
SDG: 1103258
Client: SES, Inc. (S750)
Project: FTS UST 2008-2010
Matrix: Soil
Laboratory ID: 1103258-11
File ID: 0325811.D
Sampled: 03/30/11 11:00
Prepared: 03/31/11 12:30
Analyzed: 04/03/11 18:37
Solids: 53.04
Preparation: EXT_3546
Dilution: 1
Batch: 1C31013
Sequence: 1D09304
Calibration: 1032006
Instrument: MS-BNA1

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
83-32-9	Acenaphthene		48.1	610	Q, U
208-96-8	Acenaphthylene		37.0	610	U
120-12-7	Anthracene		49.9	610	Q, U
56-55-3	Benzo(a)anthracene		66.5	610	U
50-32-8	Benzo(a)pyrene		42.5	610	U
205-99-2	Benzo(b)fluoranthene		59.2	610	Q, U
191-24-2	Benzo(g,h,i)perylene		129	610	U
207-08-9	Benzo(k)fluoranthene		72.1	610	U
218-01-9	Chrysene		57.3	610	U
53-70-3	Dibenz(a,h)anthracene		111	610	U
206-44-0	Fluoranthene		99.8	610	U
86-73-7	Fluorene	169	48.1	610	Q, J
193-39-5	Indeno(1,2,3-cd)pyrene		85.0	610	U
90-12-0	1-Methylnaphthalene	1430	185	610	
91-57-6	2-Methylnaphthalene	2420	64.7	610	
91-20-3	Naphthalene	1030	59.2	610	
85-01-8	Phenanthrene	231	42.5	610	J
129-00-0	Pyrene		73.9	610	U

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
2-Fluorobiphenyl	6162	4845	78.6	45 - 105	
Nitrobenzene-d5	6162	5080	82.5	35 - 100	
Terphenyl-d14	6162	5691	92.4	30 - 125	

ANALYSIS DATA SHEET

SB-18-01

Laboratory:	Empirical Laboratories, LLC			SDG:	1103258
Client:	SES, Inc. (S750)			Project:	FTS UST 2008-2010
Matrix:	Soil	Laboratory ID:	1103258-12	File ID:	0325812.D
Sampled:	03/30/11 11:15	Prepared:	03/31/11 12:30	Analyzed:	04/03/11 18:08
Solids:	59.62	Preparation:	EXT_3546	Dilution:	5
Batch:	1C31013	Sequence:	1D09304	Calibration:	1032006
Instrument:	MS-BNA1				

Rev Qual

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
83-32-9	Acenaphthene		210	2660	Q, U
208-96-8	Acenaphthylene		161	2660	U
120-12-7	Anthracene		218	2660	Q, U
56-55-3	Benzo(a)anthracene		290	2660	U
50-32-8	Benzo(a)pyrene		185	2660	U
205-99-2	Benzo(b)fluoranthene		258	2660	Q, U
191-24-2	Benzo(g,h,i)perylene		565	2660	U
207-08-9	Benzo(k)fluoranthene		315	2660	U
218-01-9	Chrysene		250	2660	U
53-70-3	Dibenz(a,h)anthracene		484	2660	U
206-44-0	Fluoranthene		435	2660	U
86-73-7	Fluorene		210	2660	Q, U
193-39-5	Indeno(1,2,3-cd)pyrene		371	2660	U
90-12-0	1-Methylnaphthalene	2680	806	2660	D
91-57-6	2-Methylnaphthalene	3970	282	2660	D
91-20-3	Naphthalene	2110	258	2660	J, D
85-01-8	Phenanthrene	738	185	2660	J, D
129-00-0	Pyrene	484	323	2660	J, D

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
2-Fluorobiphenyl	5376	3470	64.5	45 - 105	
Nitrobenzene-d5	5376	4366	81.2	35 - 100	
Terphenyl-d14	5376	3938	73.2	30 - 125	

ANALYSIS DATA SHEET

SB-18-02

Laboratory:	Empirical Laboratories, LLC			SDG:	1103258
Client:	SES, Inc. (S750)			Project:	FTS UST 2008-2010
Matrix:	Soil	Laboratory ID:	1103258-13	File ID:	0325813.D
Sampled:	03/30/11 11:25	Prepared:	03/31/11 12:30	Analyzed:	04/02/11 19:02
Solids:	80.61	Preparation:	EXT_3546	Dilution:	1
Batch:	1C31013	Sequence:	1D09303	Calibration:	1032006
Instrument:	MS-BNA1				

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q	Rev Qual
83-32-9	Acenaphthene		31.8	404	Q, U	U
208-96-8	Acenaphthylene		24.5	404	U	
120-12-7	Anthracene		33.1	404	Q, U	
56-55-3	Benzo(a)anthracene		44.1	404	U	
50-32-8	Benzo(a)pyrene		28.2	404	U	
205-99-2	Benzo(b)fluoranthene		39.2	404	Q, X, U	
191-24-2	Benzo(g,h,i)perylene		85.7	404	U	
207-08-9	Benzo(k)fluoranthene		47.7	404	U	
218-01-9	Chrysene		37.9	404	U	
53-70-3	Dibenz(a,h)anthracene		73.5	404	U	
206-44-0	Fluoranthene		66.1	404	U	
86-73-7	Fluorene	80.1	31.8	404	Q, J	J 11a
193-39-5	Indeno(1,2,3-cd)pyrene		56.3	404	U	U
90-12-0	1-Methylnaphthalene	406	122	404		
91-57-6	2-Methylnaphthalene	655	42.8	404		
91-20-3	Naphthalene	254	39.2	404	J	J
85-01-8	Phenanthrene	155	28.2	404	J	J
129-00-0	Pyrene		49.0	404	U	U

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
2-Fluorobiphenyl	4081	3464	84.9	45 - 105	
Nitrobenzene-d5	4081	4002	98.1	35 - 100	
Terphenyl-d14	4081	4041	99.0	30 - 125	

ANALYSIS DATA SHEET

SB-19-01

Laboratory:	Empirical Laboratories, LLC			SDG:	1103258
Client:	SES, Inc. (S750)			Project:	FTS UST 2008-2010
Matrix:	Soil	Laboratory ID:	1103258-14	File ID:	0325814.D
Sampled:	03/30/11 14:00	Prepared:	03/31/11 12:30	Analyzed:	04/02/11 19:30
Solids:	91.10	Preparation:	EXT_3546	Dilution:	1
Batch:	1C31013	Sequence:	1D09303	Calibration:	1032006
Instrument:	MS-BNA1				

Rev Qual

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
83-32-9	Acenaphthene		27.8	353	Q, U
208-96-8	Acenaphthylene		21.4	353	U
120-12-7	Anthracene		28.9	353	Q, U
56-55-3	Benzo(a)anthracene		38.5	353	U
50-32-8	Benzo(a)pyrene		24.6	353	U
205-99-2	Benzo(b)fluoranthene		34.2	353	Q, X, U
191-24-2	Benzo(g,h,i)perylene		74.8	353	U
207-08-9	Benzo(k)fluoranthene		41.7	353	U
218-01-9	Chrysene		33.1	353	U
53-70-3	Dibenz(a,h)anthracene		64.2	353	U
206-44-0	Fluoranthene		57.7	353	U
86-73-7	Fluorene		27.8	353	Q, U
193-39-5	Indeno(1,2,3-cd)pyrene		49.2	353	U
90-12-0	1-Methylnaphthalene		107	353	U
91-57-6	2-Methylnaphthalene		37.4	353	U
91-20-3	Naphthalene		34.2	353	U
85-01-8	Phenanthrene		24.6	353	U
129-00-0	Pyrene		42.8	353	U

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
2-Fluorobiphenyl	3564	3473	97.4	45 - 105	
Nitrobenzene-d5	3564	3634	102	35 - 100	*
Terphenyl-d14	3564	4151	116	30 - 125	

ANALYSIS DATA SHEET

SB-19-02

Laboratory:	Empirical Laboratories, LLC			SDG:	1103258
Client:	SES, Inc. (S750)			Project:	FTS UST 2008-2010
Matrix:	Soil	Laboratory ID:	1103258-15	File ID:	0325815.D
Sampled:	03/30/11 14:05	Prepared:	03/31/11 12:30	Analyzed:	04/03/11 20:03
Solids:	83.85	Preparation:	EXT_3546	Dilution:	1
Batch:	1C31013	Sequence:	1D09304	Calibration:	1032006
Instrument:	MS-BNA1				

Rev Qual

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
83-32-9	Acenaphthene		29.8	378	Q, U
208-96-8	Acenaphthylene		22.9	378	U
120-12-7	Anthracene		31.0	378	Q, U
56-55-3	Benzo(a)anthracene		41.3	378	U
50-32-8	Benzo(a)pyrene		26.4	378	U
205-99-2	Benzo(b)fluoranthene		36.7	378	Q, U
191-24-2	Benzo(g,h,i)perylene		80.3	378	U
207-08-9	Benzo(k)fluoranthene		44.7	378	U
218-01-9	Chrysene		35.5	378	U
53-70-3	Dibenz(a,h)anthracene		68.8	378	U
206-44-0	Fluoranthene		61.9	378	U
86-73-7	Fluorene		29.8	378	Q, U
193-39-5	Indeno(1,2,3-cd)pyrene		52.7	378	U
90-12-0	1-Methylnaphthalene		115	378	U
91-57-6	2-Methylnaphthalene		40.1	378	U
91-20-3	Naphthalene		36.7	378	U
85-01-8	Phenanthrene		26.4	378	U
129-00-0	Pyrene	53.0	45.9	378	J

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
2-Fluorobiphenyl	3822	3196	83.6	45 - 105	
Nitrobenzene-d5	3822	3394	88.8	35 - 100	
Terphenyl-d14	3822	4196	110	30 - 125	

ANALYSIS DATA SHEET

SB-20-01

Laboratory:	Empirical Laboratories, LLC		SDG:	1103258	
Client:	SES, Inc. (S750)		Project:	FTS UST 2008-2010	
Matrix:	Soil	Laboratory ID:	1103258-16	File ID:	0325816.D
Sampled:	03/30/11 14:15	Prepared:	03/31/11 12:30	Analyzed:	04/03/11 21:01
Solids:	77.08	Preparation:	EXT_3546	Dilution:	1
Batch:	1C31013	Sequence:	1D09304	Calibration:	1032006
				Instrument:	MS-BNA1

Rev Qual u

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
83-32-9	Acenaphthene		32.9	417	Q, U
208-96-8	Acenaphthylene		25.3	417	U
120-12-7	Anthracene		34.1	417	Q, U
56-55-3	Benzo(a)anthracene		45.5	417	U
50-32-8	Benzo(a)pyrene		29.1	417	U
205-99-2	Benzo(b)fluoranthene		40.4	417	Q, U
191-24-2	Benzo(g,h,i)perylene		88.5	417	U
207-08-9	Benzo(k)fluoranthene		49.3	417	U
218-01-9	Chrysene		39.2	417	U
53-70-3	Dibenz(a,h)anthracene		75.8	417	U
206-44-0	Fluoranthene		68.2	417	U
86-73-7	Fluorene		32.9	417	Q, U
193-39-5	Indeno(1,2,3-cd)pyrene		58.1	417	U
90-12-0	1-Methylnaphthalene		126	417	U
91-57-6	2-Methylnaphthalene		44.2	417	U
91-20-3	Naphthalene		40.4	417	U
85-01-8	Phenanthrene		29.1	417	U
129-00-0	Pyrene		50.5	417	U

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
2-Fluorobiphenyl	4212	3509	83.3	45 - 105	
Nitrobenzene-d5	4212	3656	86.8	35 - 100	
Terphenyl-d14	4212	4937	117	30 - 125	

ANALYSIS DATA SHEET

SB-20-019

Laboratory:	Empirical Laboratories, LLC			SDG:	1103258
Client:	SES, Inc. (S750)			Project:	FTS UST 2008-2010
Matrix:	Soil	Laboratory ID:	1103258-17	File ID:	0325817.D
Sampled:	03/30/11 14:15	Prepared:	03/31/11 12:30	Analyzed:	04/03/11 20:32
Solids:	69.39	Preparation:	EXT_3546	Dilution:	1
Batch:	1C31013	Sequence:	1D09304	Calibration:	1032006
Instrument:	MS-BNA1				

Rev Qual U → U

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
83-32-9	Acenaphthene		35.6	451	Q, U
208-96-8	Acenaphthylene		27.4	451	U
120-12-7	Anthracene		36.9	451	Q, U
56-55-3	Benzo(a)anthracene		49.3	451	U
50-32-8	Benzo(a)pyrene		31.5	451	U
205-99-2	Benzo(b)fluoranthene		43.8	451	Q, U
191-24-2	Benzo(g,h,i)perylene		95.8	451	U
207-08-9	Benzo(k)fluoranthene		53.4	451	U
218-01-9	Chrysene		42.4	451	U
53-70-3	Dibenz(a,h)anthracene		82.1	451	U
206-44-0	Fluoranthene		73.9	451	U
86-73-7	Fluorene		35.6	451	Q, U
193-39-5	Indeno(1,2,3-cd)pyrene		62.9	451	U
90-12-0	1-Methylnaphthalene		137	451	U
91-57-6	2-Methylnaphthalene		47.9	451	U
91-20-3	Naphthalene	115	43.8	451	J
85-01-8	Phenanthrene	74.9	31.5	451	J
129-00-0	Pyrene		54.7	451	U

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
2-Fluorobiphenyl	4560	3832	84.0	45 - 105	
Nitrobenzene-d5	4560	4281	93.9	35 - 100	
Terphenyl-d14	4560	4624	101	30 - 125	

ANALYSIS DATA SHEET

SB-20-02

Laboratory:	Empirical Laboratories, LLC			SDG:	1103258
Client:	SES, Inc. (S750)			Project:	FTS UST 2008-2010
Matrix:	Soil	Laboratory ID:	1103258-18RE1	File ID:	0325818.D
Sampled:	03/30/11 14:20	Prepared:	04/01/11 11:45	Analyzed:	04/03/11 17:39
Solids:	77.42	Preparation:	EXT_3546	Dilution:	1
Batch:	1C31013	Sequence:	1D09304	Calibration:	1032006
Instrument:	MS-BNA1				

Rev Qual u

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
83-32-9	Acenaphthene		32.3	410	Q, U
208-96-8	Acenaphthylene		24.8	410	U
120-12-7	Anthracene		33.5	410	Q, U
56-55-3	Benzo(a)anthracene		44.7	410	U
50-32-8	Benzo(a)pyrene		28.6	410	U
205-99-2	Benzo(b)fluoranthene		39.7	410	Q, U
191-24-2	Benzo(g,h,i)perylene		86.9	410	U
207-08-9	Benzo(k)fluoranthene		48.4	410	U
218-01-9	Chrysene		38.5	410	U
53-70-3	Dibenz(a,h)anthracene		74.5	410	U
206-44-0	Fluoranthene		67.1	410	U
86-73-7	Fluorene		32.3	410	Q, U
193-39-5	Indeno(1,2,3-cd)pyrene		57.1	410	U
90-12-0	1-Methylnaphthalene		124	410	U
91-57-6	2-Methylnaphthalene		43.5	410	U
91-20-3	Naphthalene		39.7	410	U
85-01-8	Phenanthrene		28.6	410	U
129-00-0	Pyrene		49.7	410	U

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
2-Fluorobiphenyl	4140	2171	52.4	45 - 105	
Nitrobenzene-d5	4140	2088	50.4	35 - 100	
Terphenyl-d14	4140	1975	47.7	30 - 125	

DATA VALIDATION WORKSHEETS
SEMIVOLATILE ORGANICS

Reviewer: Kitchings **Date:** 4/19

Project: FTC-419 **SDG:** 1103258 **Matrix/No. Samples:** S-17

I.	**Technical Holding Times**			
A.	**Sample Preservation, Handling and Transport**			
	1. Have all samples been preserved correctly?	(Yes)	No	N/A
	2. Have sample temperatures been kept at 4° C (+ or - 2 °)?	(Yes)	No	N/A
	3. Were all samples received in proper condition?	(Yes)	No	N/A
	4. Were any qualifications required based on this information?	Yes	(No)	N/A
	Coolers @ 2.4 °C.			
B.	**Chain of Custody**			
	1. Were all samples properly recorded on COCs?	(Yes)	No	N/A
	2. Were correct analyses performed on samples?	(Yes)	No	N/A
C.	**Holding Times**			
	1. Were samples extracted and analyzed within acceptable holding times?	(Yes)	No	N/A
	2. Were any qualifications required based on this information?	Yes	(No)	N/A

SAMPLED	PREPPED	ANALYZED
3/30	3/31	4/1

II.	**GC/MS Instrument Performance Check**			
	1. Were instrument performance check samples run for each analysis period?	(Yes)	No	N/A
	2. Were ion abundance criteria met for DTFPP analysis?	(Yes)	No	N/A
	3. Do laboratory forms match raw data?	Yes	No	(N/A)
	4. Were any qualifications required based on this information?	Yes	(No)	N/A

Comments/Qualifications:

1/26.
198 base
all criteria met.

4/1 13-01, 14-02 → 4/2 18-02 etc. → 4/3 20-2 etc.

DATA VALIDATION WORKSHEETS
SEMIVOLATILE ORGANICS

Reviewer: Kitchings **Date:** 4/19

Project: FTC-419 **SDG:** 1103258 **Matrix/No. Samples:** S-17

III.	Initial Calibration			
	1. Were correct concentrations of standards used for initial calibration? Were samples analyzed within 12 hours of associated instrument performance check?	(Yes)	No	N/A
	2. Were initial calibration RRFs for all volatile target compounds and system monitoring compounds >or = 0.05? Do recalculations for RRFs agree with reported values?	(Yes)	No	N/A
	3. Were %RSDs < or = 30% for all volatile target compounds? Do recalculations for RSDs agree with reported values?	(Yes)	No	N/A
	4. Were any qualifications required based on this information?	Yes	(No)	N/A

Comments/Qualifications:

1/26
1103258 benzo(a)anth.

RRFs > 0.5
RSD < 14%

1.162
1.112
1.213
1.173 = 1.139
1.123
1.174
1.086
1.065 / 9.108 / 8

.00053
73
548
116
26 | .01768 = .0503
123 7 1.139
281
548

= 4.4%

IV.	Continuing Calibration			
	1. Were continuing calibration samples run at the required frequency, and compared to the correct initial calibration?	(Yes)	No	N/A
	2. Did calculations from raw data agree with laboratory reported values for RRF and %D?	Yes	No	(N/A)
	3. Were continuing calibration RRFs for volatile organic compounds and system monitoring compounds (surrogates) > or = 0.05?	(Yes)	No	N/A
	4. Were %D between initial calibration RRF and the continuing calibration RRFs within + or - 25%?	(Yes)	No	N/A
	5. Were any qualifications required based on this information?	Yes	(No)	N/A

Comments/Qualifications:

4/2

4/1 @ 12:47
Chrysene $\frac{1.123 - 1.021}{1.123}$ = 9.1% < 16%

b(b)f. $\frac{1.331 - 1.100}{1.100}$ = 21% < 22%

4/3
b(a)pyrene $\frac{1.044 - 0.980}{1.044}$ = 6.1% < 17%

DATA VALIDATION WORKSHEETS
SEMIVOLATILE ORGANICS

Reviewer: Kitchings **Date:** 4/19

Project: FTC-419 **SDG:** 1103258 **Matrix/No. Samples:** S-17

V.	**Blanks**			
	1. Were any target or non-target compounds reported in laboratory prep or calibration blanks?	Yes	No	N/A
	2. Were method blank analyses performed at required frequency, and for each GC/MS system used to analyze samples for each type of analysis (i.e., matrix)?	Yes	No	N/A
	3. Were any qualifications required based on this information?	Yes	No	N/A

Comments/Qualifications:

4/2 1833

U's,

VI.	**System Monitoring Compounds (Surrogate Spikes)**			
	1. Were laboratory surrogate recoveries calculated and reported correctly?	Yes	No	N/A
	2. Were surrogate recoveries within acceptable limits?	Yes	No	N/A
	3. Were any qualifications required based on surrogate spike QC information?	Yes	No	N/A

Comments/Qualifications:

46-5

45-105 1 | 35-104 2 Nitrobenzene. | 30-125 3 Terphenyl

52.4 – allu'd. – 19-01-high | 14-01-high. – none effected

1010 "J" | 13-02-high. | 16-01-high | 16-02-high.

78.1 – 189.0 | 47.7 – 136

VII.	**Matrix Spikes/Matrix Spike Duplicates**			
	1. Were MS/MSD samples analyzed at required frequency for each ample matrix?	Yes	No	N/A
	2. Were MS/MSD results for recovery and RPD within advisory limits?	Yes	No	N/A
	3. Were Samples used for MS/MSD field blanks?	Yes	No	N/A
	4. Were laboratory reported results correctly calculated from raw data?	Yes	No	N/A
	5. Were any qualifications required, based on results of MS/MSD samples in conjunction with other QC information?	Yes	No	N/A

33-3

Comments/Qualifications:

	MS	MSD
~~benzo~~(b)	high	high.
benzo(ghi)	"	ok.
indeno	ok	high.

J

fluoranthene. 4586 - 980.9 / 3618 = 99.6%

4229 - 980.9 / 3548 = 91.5%

RPD = 357 / 3426.5 = 10.4%

DATA VALIDATION WORKSHEETS
SEMIVOLATILE ORGANICS

Reviewer: Kitchings **Date:** 4/19

Project: FTC-419 **SDG:** 1103258 **Matrix/No. Samples:** S-17

VIII.	Laboratory Control Sample (LCS)			
	1. Were LCS samples run at correct frequency for each matrix samples?	(Yes)	No	N/A
	2. Were LCS calculations performed correctly, and did laboratory reported values match raw data? Were recoveries within laboratory QC limits?	Yes	(No)	N/A
	4. Were any qualifications required based on LCS data in conjunction with other QC information?	(Yes)	No	N/A

Comments/Qualifications:

LCS 1013-BS1 Acenaphth.-high. b(a)anth. 3433/3333 = 103.0%
14-4 (= J) Anth. - high
Benzo(b) - high.
fluoren - high. naphth. 3337/3333 = 100.1%

IX.	Internal Standards			
	1. Were standard area counts within a factor of two (-50% to +100%) from associated calibration standard?	Yes	(No)	N/A
	2. Were retention times of internal standard within + or - 30 seconds of retention time of associated calibration check?	(Yes)	No	N/A
	3. Were any qualifications required based on internal standard results?	(Yes)	No	N/A

Comments/Qualifications:

14-02 - perylene - low
13-02 - " - "
14-01 " - "
16-01 " - "
17-01 " - "

- di-n-octyl
- b(b)f
- b(k)f
- b(a)pyrene
- indeno
- dibenz.
- b(ghi)

(UJ/J)

14-02 naphth. 1857989/2003854 = 92.7% 6.86/6.87

14-01 Chrys. 730811/950317 = 76.9% 13.89/13.90

X.	Target Compound Identification			
	1. Are relative retention times (RRTs) within + or - 0.06 RRT units of standard RRT?	Yes	No	(N/A)
	2. Do sample compound spectra meet specified criteria in relation to laboratory standard spectra?	Yes	No	N/A
	3. Were all compounds accounted for on chromatogram?	Yes	No	N/A

Comments/Qualifications: no raw data - level III

DATA VALIDATION WORKSHEETS
SEMIVOLATILE ORGANICS

Reviewer: Kitchings **Date:** 4/19

Project: FTC-419 **SDG:** 1103258 **Matrix/No. Samples:** S-17

XI. Compound Quantitation and Reported Contract Required Quantitation Limits (CRQLs)			
1. Were sample results correctly calculated and reported by laboratory?	Yes	No	N/A
2. Were correct internal standard quantitation ion and RRF used to quantify all compounds for all samples?	Yes	No	N/A
3. Were CRQLs adjusted to reflect sample dilutions and dry weight factors not accounted for by the method?	Yes	No	N/A
4. Were any laboratory QA/QC sample results calculated from peaks derived using manual integration?	Yes	No	N/A
5. Were any qualifications required based on this information?	Yes	No	N/A

Comments/Qualifications: level III – no raw data

XII. Field QC			
1. Were any Field Duplicates associated with this SDG?	Yes	No	N/A
a. If Yes, were RPDs acceptable (50% for water samples, 100% for soil samples)?	Yes	No	N/A
2. Were any field blanks or equipment rinsates associated with this SDG?	Yes	No	N/A
a. If yes, were any compounds reported in samples >IDL?	Yes	No	N/A
b. Were any qualifications required based on this information?	Yes	No	N/A

Comments/Qualifications: FP

20-01 20-019
U's
U - Phenan. 74.9
U - Naphths. 116

XIII. Overall Assessment of Data			
1. Are there any specific concerns or limitations regarding the data in this SDG?	Yes	No	N/A

Comments/Qualifications:

SDG: 1103247 Project: FTC Bldg 419

Method: Volatiles - BTEX 8260B Matrix/No. Samples: Soil - 25

Validation Samples: SB-02-02, SB-03-01, SB-06-01, SB08-01, SB-10-01, SB-12-01, SB-01-01, SB-04-01, SB-03-02, SB-06-02, SB08-02, SB-10-02, SB-12-02, SB-01-02, SB-04-02, SB-05-01, SB-07-01, SB-09-01, SB-11-01, SB-02-01, SB-03-01, SB-05-02, SB-07-02, SB-09-02, SB-11-02

Data Validation Report Summary

		Status Code	Comments
1.	Sample Preservation, Handling, and Transport	A	
2.	Chain of Custody	A	
3.	Holding Times	A	
4.	GC/MS Tune/Inst Perf	A	
5.	Calibrations	A	
6.	Blanks	A	
7.	Blank Spike/LCS	A	see comment #1
8.	Matrix Spike	N/A	
9.	Surrogates	X	
10.	Internal Standards	X	see comment #2
11.	Compound Identification	A	
12.	System Performance	A	
13.	Field QC Samples	A	
14.	Overall Assessment	N/A	

Status Codes:
A = Acceptable
R = Data Rejected
X = Data acceptable but qualified due to problems

Qualifications:

7a • SB-04-01 and SB-07-01 had low bfb surrogate recoveries, and SB-07-01 also had a high toluene-d8 recovery. Reanalysis were performed with similar results – the 07-01 sample also had a IS outside the QC limits – sample SB-04-01 RE and sample SB-07-01 were qualified as "UJ".

~~#1 • A high LCS recovery for toluene resulted in a "J" qualifier for that cpd. in sample SB-09-01.~~ J/K

10a • Low IS recoveries resulted in "J" qualifier for benzene in Sample SB-10-01;

Significant Findings/Recommendations:

#1 - LCS 31010 had a high recovery for toluene, both effected samples were non-detects - no quals required.

#2 - The 1,4-dcb-d4 had low recoveries for 04-01RE, 07-01 RE and 07-01, no cpds were effected no quals.

• SB-04-01 had low recoveries for all 3 IS's. This sample was rejected in favor of the RE - no quals.

Overall Data Quality:

Acceptable as qualified.

Validator's Signature: J. Thomas Kitching Date: 4/20/2011

EMPIRICAL LABORATORIES, LLC - CHAIN OF CUSTODY RECORD

SHIP TO: 621 Mainstream Drive, Suite 270 ♦ Nashville, TN 37228 ♦ 615-345-1115 ♦ (fax) 615-846-5426

14208

Send Results to:	Send Invoice to:
Name DOUG HAWN	Name
Company SES	Company
Address 10006 FLOYD CULLER	Address
City OAK RIDGE	City
State, Zip TN	State, Zip
Phone (865) 481-7637	Phone
Fax	Fax
E-mail DHAWN@SESCPROENV.COM	E-mail

Project No./Name: BLDG 419

Sampler's (Signature): William McNeal

Analysis Requirements: BTEX ONLY (VOC 8260) | PAH 8270, DRO 8015

Lab Use Only:

VOA Headspace	Y	N	(NA)
Field Filtered	Y	N	(NA)
Correct Containers	(Y)	N	NA
Discrepancies	Y	(N)	NA
Cust. Seals Intact	(Y)	N	NA
Containers Intact	(Y)	N	NA

Airbill #: 1235

CAR #:

Lab Use Only Lab #	Date/Time Sampled	Sample Description	Sample Matrix			Comments	No. of Bottles	Lab Use Only Containers/Pres.
1103247-01	03/29/11 0950	SB-01-01	SOIL	X	X	ON VOC SAMPLES BTEX ONLY	4	1M x 30
-02	LAB PREPPED TRIP		WATER	X		LAB PROVIDED	2	2 VOA
-03	03/29/11 0955	SB-01-02	SOIL	X	X	ON VOC SAMPLES BTEX ONLY	4	1M x 30
-04	03/29/11 1035	SB-02-01		X	X			
-05	03/29/11 1040	SB-02-02		X	X			
-06	03/29/11 1100	SB-04-01		X	X			
-07	03/29/11 1105	SB-04-02		X	X			
-08	03/29/11 1120	SB-03-01		X	X			
-09	03/29/11 1120	SB-03-019		X	X			
-10	03/29/11 1135	SB-03-02		X	X			
-11	03/29/11 1315	SB-05-01		X	X			
-12	03/29/11 1320	SB-05-02	SOIL	X	X	ON VOC SAMPLES BTEX ONLY	4	

	Date/Time	Received By: (Signature)
Sample Kit Prep'd by: (Signature)		
Relinquished by: (Signature) William McNeal	03/29/11 1700	Received By: (Signature)
Relinquished by: (Signature)	Date/Time	Received By: (Signature)
Received for Laboratory by: (Signature)	Date/Time 3-30-11 08:30	Temperature 1.7 °C

REMARKS:

CALL DOUG HAWN UPON RECEIPT

** 48 HOUR TAT **

Details:

Page 1 of 3

Cooler No. 1 of 2

Date Shipped 03/29/11

Shipped By FEDEX

Turnaround 48 HOUR

Distribution: Original and yellow copies accompany sample shipment to laboratory; Pink retained by samplers.

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1103247

EMPIRICAL LABORATORIES, LLC - CHAIN OF CUSTODY RECORD

SHIP TO: 621 Mainstream Drive, Suite 270 ♦ Nashville, TN 37228 ♦ 615-345-1115 ♦ (fax) 615-846-5426

14209

Send Results to:	Send Invoice to:
Name DOUG HAWN	Name
Company SES	Company
Address 1006 FLOYD CULLER	Address
City OAK RIDGE	City
State, Zip TN	State, Zip
Phone (865) 481-7837	Phone
Fax	Fax
E-mail	E-mail

Project No./Name:	Sampler's (Signature):
BLDG 419	[signature]

Analysis Requirements:

VOC 8260 - BTEX ONLY

PAH 8270 - 8260 8015

Lab Use Only:

VOA Headspace	Y	N	(NA)
Field Filtered	Y	N	(NA)
Correct Containers	(Y)	N	NA
Discrepancies	Y	(N)	NA
Cust. Seals Intact	(Y)	N	NA
Containers Intact	(Y)	N	NA

Airbill #: 1235

CAR #:

Lab Use Only Lab #	Date/Time Sampled	Sample Description	Sample Matrix	Comments	No. of Bottles	Lab Use Only Containers/Pres.
1103247 -13	03/29/11 1340	SB-06-01	SOIL	BTEX ONLY ON ENCORE	4	1 MT 30
-14	03/29/11 1345	SB-06-02	"	BTEX ON VOC SAMPLE		
-15	03/29/11 1405	SB-07-01				
-16	03/29/11 1410	SB-07-02				
-17	03/29/11 1435	SB-08-01				
-18	03/29/11 1445	SB-08-02				
-19	03/29/11 1500	SB-09-01				
-20	03/29/11 1510	SB-09-02				
-21	03/29/11 1540	SB-10-01				
03/30/11 -22 ~~-23~~	03/29/11 1545	SB-10-02				
-23	03/29/11 1610	SB-11-01				
-24	03/29/11 1615	SB-11-02	SOIL	BTEX ONLY ON VOC SAMPLE	4	

	Date/Time	Received By: (Signature)
Sample Kit Prep'd by: (Signature)		
Relinquished by: (Signature) [signature]	Date/Time 03/29/11 1700	Received By: (Signature)
Relinquished by: (Signature)	Date/Time	Received By: (Signature)
Received for Laboratory by: (Signature) [signature]	Date/Time 3-30-11 06:30	Temperature 1.7 °C

REMARKS:

CALL DOUG HAWN UPON RECEIPT

** 48 HOUR TAT **

Details:

Page 2 of 3

Cooler No. 1 of 2

Date Shipped 03/29/11

Shipped By FEDEX

Turnaround 48 HOUR

Distribution: Original and yellow copies accompany sample shipment to laboratory; Pink retained by samplers.

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1103247

EMPIRICAL LABORATORIES, LLC - CHAIN OF CUSTODY RECORD

SHIP TO: 621 Mainstream Drive, Suite 270 ♦ Nashville, TN 37228 ♦ 615-345-1115 ♦ (fax) 615-846-5426

14210

Send Results to:	Send Invoice to:
Name DOUG HAWIN	Name
Company TOC. FLOYD CULLER	Company
Address SES	Address
City OAK RIDGE	City
State, Zip TN	State, Zip
Phone (865) 481-7837	Phone
Fax	Fax
E-mail DHAWIN@SECPCDEN.COM	E-mail
Project No./Name: BLDG 419	**Sampler's (Signature):** William McNeal

Analysis Requirements: VOC 8260 BTEX ONLY; PAH 8270 DRO 8015

Lab Use Only:

VOA Headspace	Y	N	(NA)
Field Filtered	Y	N	(NA)
Correct Containers	(Y)	N	NA
Discrepancies	Y	(N)	NA
Cust. Seals Intact	(Y)	N	NA
Containers Intact	(Y)	N	NA

Airbill #: 1238

CAR #:

Lab Use Only Lab #	Date/Time Sampled	Sample Description	Sample Matrix	Comments	No. of Bottles	Lab Use Only Containers/Pres.
1103247-25	03/29/11 1640	SB-12-01	SOIL	BTEX ONLY	4	1M+3O
-26	03/29/11 1650	SB-12-02	SOIL	BTEX ONLY	4	↓
-27	LAB PREPARED	TRIP BLANK	WATER		2	2 HCl

	Date/Time	Received By: (Signature)
Sample Kit Prep'd by: (Signature)		
Relinquished by: (Signature) William McNeal	Date/Time 03/29/11 1700	Received By: (Signature)
Relinquished by: (Signature)	Date/Time	Received By: (Signature)
Received for Laboratory by: (Signature)	Date/Time 3-30-11 08:30	Temperature 1.7°C

REMARKS:

CALL DOUG HAWIN UPON RECEIPT

* 48 TAT *

Details:

Page 3 of 3

Cooler No. 1 of 2

Date Shipped FEDEX

Shipped By 03/29/11

Turnaround 48 TAT

Distribution: Original and yellow copies accompany sample shipment to laboratory; Pink retained by samplers.

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1103247

ANALYSIS DATA SHEET

SB-01-01

Laboratory:	Empirical Laboratories, LLC			SDG:	1103247
Client:	SES, Inc. (S750)			Project:	FTS UST 2008-2010
Matrix:	Soil	Laboratory ID:	1103247-01	File ID:	0324701.D
Sampled:	03/29/11 09:50	Prepared:	03/31/11 00:00	Analyzed:	03/31/11 08:54
Solids:	89.59	Preparation:	5035	Dilution:	1
Batch:	1D04001	Sequence:	1D09401	Calibration:	1081001
Instrument:	MS-VOA6				

Rev 2nd LL

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
71-43-2	Benzene		0.490	5.22	U
100-41-4	Ethylbenzene		0.782	5.22	U
108-88-3	Toluene		0.897	5.22	U
1330-20-7	Xylenes (total)		0.730	5.22	U

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
Bromofluorobenzene	31.30	32.14	103	85 - 120	
Dibromofluoromethane	31.30	32.40	104	80 - 125	
1,2-Dichloroethane-d4	31.30	32.98	105	75 - 140	
Toluene-d8	31.30	31.92	102	85 - 115	

ANALYSIS DATA SHEET

SB-01-02

Laboratory:	Empirical Laboratories, LLC			SDG:	1103247
Client:	SES, Inc. (S750)			Project:	FTS UST 2008-2010
Matrix:	Solid	Laboratory ID:	1103247-03	File ID:	0324703.D
Sampled:	03/29/11 09:55	Prepared:	03/31/11 00:00	Analyzed:	03/31/11 09:18
Solids:	85.52	Preparation:	5035	Dilution:	1
Batch:	1D04001	Sequence:	1D09401	Calibration:	1081001
Instrument:	MS-VOA6				

Rev Dual U

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
71-43-2	Benzene		0.467	4.97	U
100-41-4	Ethylbenzene		0.746	4.97	U
108-88-3	Toluene		0.855	4.97	U
1330-20-7	Xylenes (total)		0.696	4.97	U

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
Bromofluorobenzene	29.83	29.81	99.9	85 - 120	
Dibromofluoromethane	29.83	29.93	100	80 - 125	
1,2-Dichloroethane-d4	29.83	30.19	101	75 - 140	
Toluene-d8	29.83	31.24	105	85 - 115	

ANALYSIS DATA SHEET

SB-02-01

Laboratory:	Empirical Laboratories, LLC			SDG:	1103247
Client:	SES, Inc. (S750)			Project:	FTS UST 2008-2010
Matrix:	Soil	Laboratory ID:	1103247-04	File ID:	0324704.D
Sampled:	03/29/11 10:35	Prepared:	03/31/11 00:00	Analyzed:	03/31/11 09:42
Solids:	94.48	Preparation:	5035	Dilution:	1
Batch:	1D04001	Sequence:	1D09401	Calibration:	1081001
Instrument:	MS-VOA6				

Rev Qual U

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
71-43-2	Benzene		0.514	5.47	U
100-41-4	Ethylbenzene		0.820	5.47	U
108-88-3	Toluene		0.940	5.47	U
1330-20-7	Xylenes (total)		0.765	5.47	U

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
Bromofluorobenzene	32.80	32.12	97.9	85 - 120	
Dibromofluoromethane	32.80	34.20	104	80 - 125	
1,2-Dichloroethane-d4	32.80	33.43	102	75 - 140	
Toluene-d8	32.80	33.95	104	85 - 115	

ANALYSIS DATA SHEET

SB-02-02

Laboratory:	Empirical Laboratories, LLC			SDG:	1103247
Client:	SES, Inc. (S750)			Project:	FTS UST 2008-2010
Matrix:	Soil	Laboratory ID:	1103247-05	File ID:	0324705.D
Sampled:	03/29/11 10:40	Prepared:	03/31/11 00:00	Analyzed:	03/31/11 10:06
Solids:	72.28	Preparation:	5035	Dilution:	1
Batch:	1D04001	Sequence:	1D09401	Calibration:	1081001
Instrument:	MS-VOA6				

Rev Qual U

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
71-43-2	Benzene		0.576	6.13	U
100-41-4	Ethylbenzene		0.920	6.13	U
108-88-3	Toluene		1.05	6.13	U
1330-20-7	Xylenes (total)		0.859	6.13	U

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
Bromofluorobenzene	36.80	36.99	101	85 - 120	
Dibromofluoromethane	36.80	37.29	101	80 - 125	
1,2-Dichloroethane-d4	36.80	37.98	103	75 - 140	
Toluene-d8	36.80	37.36	102	85 - 115	

ANALYSIS DATA SHEET

SB-04-01

Laboratory:	Empirical Laboratories, LLC			SDG:	1103247
Client:	SES, Inc. (S750)			Project:	FTS UST 2008-2010
Matrix:	Soil	Laboratory ID:	1103247-06	File ID:	0324706.D
Sampled:	03/29/11 11:00	Prepared:	03/31/11 00:00	Analyzed:	03/31/11 10:30
Solids:	88.11	Preparation:	5035	Dilution:	1
Batch:	1D04001	Sequence:	1D09401	Calibration:	1081001
Instrument:	MS-VOA6				

Rev Qual 14

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
71-43-2	Benzene		0.482	5.13	S, U
100-41-4	Ethylbenzene		0.770	5.13	S, U
108-88-3	Toluene		0.882	5.13	S, U
1330-20-7	Xylenes (total)		0.718	5.13	S, U

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
Bromofluorobenzene	30.78	25.76	83.7	85 - 120	*S
Dibromofluoromethane	30.78	33.43	109	80 - 125	S
1,2-Dichloroethane-d4	30.78	34.64	113	75 - 140	S
Toluene-d8	30.78	35.29	115	85 - 115	S

ANALYSIS DATA SHEET

SB-04-01

Laboratory:	Empirical Laboratories, LLC			SDG:	1103247
Client:	SES, Inc. (S750)			Project:	FTS UST 2008-2010
Matrix:	Soil	Laboratory ID:	1103247-06RE1	File ID:	0324706R.D
Sampled:	03/29/11 11:00	Prepared:	04/01/11 00:00	Analyzed:	04/01/11 10:06
Solids:	88.11	Preparation:	5035	Dilution:	1
Batch:	1D01016	Sequence:	1D09201	Calibration:	1081001
Instrument:	MS-VOA6				

Raw Qual RUJ7a

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
71-43-2	Benzene		0.481	5.12	U
100-41-4	Ethylbenzene		0.768	5.12	U
108-88-3	Toluene		0.881	5.12	U
1330-20-7	Xylenes (total)		0.717	5.12	U

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
Bromofluorobenzene	30.73	24.34	79.2	85 - 120	*X
Dibromofluoromethane	30.73	31.98	104	80 - 125	
1,2-Dichloroethane-d4	30.73	29.87	97.2	75 - 140	
Toluene-d8	30.73	37.95	123	85 - 115	*

ANALYSIS DATA SHEET

SB-04-02

Laboratory:	Empirical Laboratories, LLC			SDG:	1103247
Client:	SES, Inc. (S750)			Project:	FTS UST 2008-2010
Matrix:	Soil	Laboratory ID:	1103247-07	File ID:	0324707.D
Sampled:	03/29/11 11:05	Prepared:	03/31/11 00:00	Analyzed:	03/31/11 10:55
Solids:	84.70	Preparation:	5035	Dilution:	1
Batch:	1D04001	Sequence:	1D09401	Calibration:	1081001
Instrument:	MS-VOA6				

Rev Qual U

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
71-43-2	Benzene		0.558	5.94	U
100-41-4	Ethylbenzene		0.891	5.94	U
108-88-3	Toluene		1.02	5.94	U
1330-20-7	Xylenes (total)		0.831	5.94	U

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
Bromofluorobenzene	35.63	35.85	101	85 - 120	
Dibromofluoromethane	35.63	36.66	103	80 - 125	
1,2-Dichloroethane-d4	35.63	34.50	96.8	75 - 140	
Toluene-d8	35.63	35.77	100	85 - 115	

ANALYSIS DATA SHEET

SB-03-01

Laboratory:	Empirical Laboratories, LLC			SDG:	1103247
Client:	SES, Inc. (S750)			Project:	FTS UST 2008-2010
Matrix:	Soil	Laboratory ID:	1103247-08	File ID:	0324708.D
Sampled:	03/29/11 11:20	Prepared:	03/31/11 00:00	Analyzed:	03/31/11 11:19
Solids:	86.20	Preparation:	5035	Dilution:	1
Batch:	1D04001	Sequence:	1D09401	Calibration:	1081001
Instrument:	MS-VOA6				

Rev Qual U

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
71-43-2	Benzene		0.461	4.91	U
100-41-4	Ethylbenzene		0.736	4.91	U
108-88-3	Toluene		0.844	4.91	U
1330-20-7	Xylenes (total)		0.687	4.91	U

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
Bromofluorobenzene	29.45	29.30	99.5	85 - 120	
Dibromofluoromethane	29.45	29.90	102	80 - 125	
1,2-Dichloroethane-d4	29.45	30.34	103	75 - 140	
Toluene-d8	29.45	30.72	104	85 - 115	

ANALYSIS DATA SHEET

SB-03-019

Laboratory:	Empirical Laboratories, LLC			SDG:	1103247
Client:	SES, Inc. (S750)			Project:	FTS UST 2008-2010
Matrix:	Soil	Laboratory ID:	1103247-09	File ID:	0324709.D
Sampled:	03/29/11 11:20	Prepared:	03/31/11 00:00	Analyzed:	03/31/11 11:43
Solids:	85.54	Preparation:	5035	Dilution:	1
Batch:	1D04001	Sequence:	1D09401	Calibration:	1081001
Instrument:	MS-VOA6				

Rev Qual

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
71-43-2	Benzene		0.537	5.71	U
100-41-4	Ethylbenzene		0.856	5.71	U
108-88-3	Toluene		0.982	5.71	U
1330-20-7	Xylenes (total)		0.799	5.71	U

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
Bromofluorobenzene	34.25	34.03	99.3	85 - 120	
Dibromofluoromethane	34.25	34.73	101	80 - 125	
1,2-Dichloroethane-d4	34.25	35.93	105	75 - 140	
Toluene-d8	34.25	34.52	101	85 - 115	

ANALYSIS DATA SHEET

SB-03-02

Laboratory:	Empirical Laboratories, LLC			SDG:	1103247
Client:	SES, Inc. (S750)			Project:	FTS UST 2008-2010
Matrix:	Soil	Laboratory ID:	1103247-10	File ID:	0324710.D
Sampled:	03/29/11 11:35	Prepared:	03/31/11 00:00	Analyzed:	03/31/11 12:07
Solids:	85.04	Preparation:	5035	Dilution:	1
Batch:	1D04001	Sequence:	1D09401	Calibration:	1081001
Instrument:	MS-VOA6				

Rev Qual u

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
71-43-2	Benzene		0.492	5.23	U
100-41-4	Ethylbenzene		0.785	5.23	U
108-88-3	Toluene		0.900	5.23	U
1330-20-7	Xylenes (total)		0.732	5.23	U

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
Bromofluorobenzene	31.39	31.42	100	85 - 120	
Dibromofluoromethane	31.39	32.18	103	80 - 125	
1,2-Dichloroethane-d4	31.39	31.96	102	75 - 140	
Toluene-d8	31.39	32.81	105	85 - 115	

ANALYSIS DATA SHEET

SB-05-01

Laboratory:	Empirical Laboratories, LLC			SDG:	1103247
Client:	SES, Inc. (S750)			Project:	FTS UST 2008-2010
Matrix:	Soil	Laboratory ID:	1103247-11	File ID:	0324711.D
Sampled:	03/29/11 13:15	Prepared:	03/31/11 00:00	Analyzed:	03/31/11 12:31
Solids:	91.08	Preparation:	5035	Dilution:	1
Batch:	1D04001	Sequence:	1D09401	Calibration:	1081001
Instrument:	MS-VOA6				

Rev Qual U

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
71-43-2	Benzene		0.485	5.16	U
100-41-4	Ethylbenzene		0.774	5.16	U
108-88-3	Toluene		0.887	5.16	U
1330-20-7	Xylenes (total)		0.722	5.16	U

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
Bromofluorobenzene	30.96	30.20	97.6	85 - 120	
Dibromofluoromethane	30.96	34.50	111	80 - 125	
1,2-Dichloroethane-d4	30.96	34.26	111	75 - 140	
Toluene-d8	30.96	32.73	106	85 - 115	

ANALYSIS DATA SHEET

SB-05-02

Laboratory:	Empirical Laboratories, LLC			SDG:	1103247
Client:	SES, Inc. (S750)			Project:	FTS UST 2008-2010
Matrix:	Soil	Laboratory ID:	1103247-12	File ID:	0324712.D
Sampled:	03/29/11 13:20	Prepared:	03/31/11 00:00	Analyzed:	03/31/11 12:55
Solids:	83.51	Preparation:	5035	Dilution:	1
Batch:	1D04001	Sequence:	1D09401	Calibration:	1081001
Instrument:	MS-VOA6				

Rev Qual U

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
71-43-2	Benzene		0.569	6.05	U
100-41-4	Ethylbenzene		0.907	6.05	U
108-88-3	Toluene		1.04	6.05	U
1330-20-7	Xylenes (total)		0.847	6.05	U

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
Bromofluorobenzene	36.29	35.66	98.3	85 - 120	
Dibromofluoromethane	36.29	36.47	101	80 - 125	
1,2-Dichloroethane-d4	36.29	37.96	105	75 - 140	
Toluene-d8	36.29	38.17	105	85 - 115	

ANALYSIS DATA SHEET

SB-06-01

Laboratory:	Empirical Laboratories, LLC			SDG:	1103247
Client:	SES, Inc. (S750)			Project:	FTS UST 2008-2010
Matrix:	Soil	Laboratory ID:	1103247-13	File ID:	0324713.D
Sampled:	03/29/11 13:40	Prepared:	03/31/11 00:00	Analyzed:	03/31/11 13:20
Solids:	91.00	Preparation:	5035	Dilution:	1
Batch:	1D04001	Sequence:	1D09401	Calibration:	1081001
Instrument:	MS-VOA6				

Raw 2nd L

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
71-43-2	Benzene		0.534	5.68	U
100-41-4	Ethylbenzene		0.851	5.68	U
108-88-3	Toluene		0.976	5.68	U
1330-20-7	Xylenes (total)		0.795	5.68	U

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
Bromofluorobenzene	34.06	33.48	98.3	85 - 120	
Dibromofluoromethane	34.06	34.42	101	80 - 125	
1,2-Dichloroethane-d4	34.06	36.27	107	75 - 140	
Toluene-d8	34.06	34.56	101	85 - 115	

ANALYSIS DATA SHEET

SB-06-02

Laboratory:	Empirical Laboratories, LLC			SDG:	1103247
Client:	SES, Inc. (S750)			Project:	FTS UST 2008-2010
Matrix:	Soil	Laboratory ID:	1103247-14	File ID:	0324714.D
Sampled:	03/29/11 13:45	Prepared:	03/31/11 00:00	Analyzed:	03/31/11 13:45
Solids:	81.70	Preparation:	5035	Dilution:	1
Batch:	1D04001	Sequence:	1D09401	Calibration:	1081001
Instrument:	MS-VOA6				

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
71-43-2	Benzene		0.499	5.31	U
100-41-4	Ethylbenzene		0.797	5.31	U
108-88-3	Toluene		0.914	5.31	U
1330-20-7	Xylenes (total)		0.744	5.31	U

Rev Qual U

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
Bromofluorobenzene	31.88	29.46	92.4	85 - 120	
Dibromofluoromethane	31.88	32.54	102	80 - 125	
1,2-Dichloroethane-d4	31.88	33.15	104	75 - 140	
Toluene-d8	31.88	34.01	107	85 - 115	

ANALYSIS DATA SHEET

SB-07-01

Laboratory:	Empirical Laboratories, LLC			SDG:	1103247
Client:	SES, Inc. (S750)			Project:	FTS UST 2008-2010
Matrix:	Soil	Laboratory ID:	1103247-15	File ID:	0324715.D
Sampled:	03/29/11 14:05	Prepared:	03/31/11 00:00	Analyzed:	03/31/11 14:09
Solids:	77.91	Preparation:	5035	Dilution:	1
Batch:	1D04001	Sequence:	1D09401	Calibration:	1081001
Instrument:	MS-VOA6				

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
71-43-2	Benzene		0.689	7.33	U
100-41-4	Ethylbenzene		1.10	7.33	U
108-88-3	Toluene		1.26	7.33	U
1330-20-7	Xylenes (total)		1.03	7.33	U

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
Bromofluorobenzene	43.96	35.50	80.8	85 - 120	*
Dibromofluoromethane	43.96	45.43	103	80 - 125	
1,2-Dichloroethane-d4	43.96	44.95	102	75 - 140	
Toluene-d8	43.96	52.90	120	85 - 115	*

ANALYSIS DATA SHEET

SB-07-01

Laboratory:	Empirical Laboratories, LLC			SDG:	1103247
Client:	SES, Inc. (S750)			Project:	FTS UST 2008-2010
Matrix:	Soil	Laboratory ID:	1103247-15RE1	File ID:	0324715R.D
Sampled:	03/29/11 14:05	Prepared:	04/01/11 00:00	Analyzed:	04/01/11 10:30
Solids:	77.91	Preparation:	5035	Dilution:	1
Batch:	1D01016	Sequence:	1D09201	Calibration:	1081001
Instrument:	MS-VOA6				

Rev Qual R 16

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
71-43-2	Benzene		0.657	6.99	U
100-41-4	Ethylbenzene		1.05	6.99	U
108-88-3	Toluene		1.20	6.99	U
1330-20-7	Xylenes (total)		0.979	6.99	U

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
Bromofluorobenzene	41.95	35.42	84.4	85 - 120	*X
Dibromofluoromethane	41.95	44.92	107	80 - 125	
1,2-Dichloroethane-d4	41.95	46.25	110	75 - 140	
Toluene-d8	41.95	50.17	120	85 - 115	*

ANALYSIS DATA SHEET

SB-07-02

Laboratory:	Empirical Laboratories, LLC			SDG:	1103247
Client:	SES, Inc. (S750)			Project:	FTS UST 2008-2010
Matrix:	Soil	Laboratory ID:	1103247-16	File ID:	0324716.D
Sampled:	03/29/11 14:10	Prepared:	03/31/11 00:00	Analyzed:	03/31/11 14:34
Solids:	84.91	Preparation:	5035	Dilution:	1
Batch:	1D04001	Sequence:	1D09401	Calibration:	1081001
Instrument:	MS-VOA6				

Rev Qual U

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
71-43-2	Benzene		0.469	4.99	U
100-41-4	Ethylbenzene		0.749	4.99	U
108-88-3	Toluene		0.858	4.99	U
1330-20-7	Xylenes (total)		0.699	4.99	U

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
Bromofluorobenzene	29.94	30.29	101	85 - 120	
Dibromofluoromethane	29.94	31.36	105	80 - 125	
1,2-Dichloroethane-d4	29.94	30.72	103	75 - 140	
Toluene-d8	29.94	32.22	108	85 - 115	

ANALYSIS DATA SHEET

SB-08-01

Laboratory:	Empirical Laboratories, LLC			SDG:	1103247
Client:	SES, Inc. (S750)			Project:	FTS UST 2008-2010
Matrix:	Soil	Laboratory ID:	1103247-17	File ID:	0324717.D
Sampled:	03/29/11 14:35	Prepared:	03/31/11 00:00	Analyzed:	03/31/11 14:58
Solids:	83.78	Preparation:	5035	Dilution:	1
Batch:	1D04001	Sequence:	1D09401	Calibration:	1081001
Instrument:	MS-VOA6				

Rev Qual u

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
71-43-2	Benzene		0.479	5.09	U
100-41-4	Ethylbenzene		0.764	5.09	U
108-88-3	Toluene		0.876	5.09	U
1330-20-7	Xylenes (total)		0.713	5.09	U

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
Bromofluorobenzene	30.55	27.28	89.3	85 - 120	
Dibromofluoromethane	30.55	31.29	102	80 - 125	
1,2-Dichloroethane-d4	30.55	31.68	104	75 - 140	
Toluene-d8	30.55	33.24	109	85 - 115	

ANALYSIS DATA SHEET

SB-08-02

Laboratory:	Empirical Laboratories, LLC			SDG:	1103247
Client:	SES, Inc. (S750)			Project:	FTS UST 2008-2010
Matrix:	Soil	Laboratory ID:	1103247-18	File ID:	0324718.D
Sampled:	03/29/11 14:45	Prepared:	03/31/11 00:00	Analyzed:	03/31/11 15:22
Solids:	84.52	Preparation:	5035	Dilution:	1
Batch:	1D04001	Sequence:	1D09401	Calibration:	1081001
Instrument:	MS-VOA6				

Rev 2nd U

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
71-43-2	Benzene		0.473	5.03	U
100-41-4	Ethylbenzene		0.755	5.03	U
108-88-3	Toluene		0.865	5.03	U
1330-20-7	Xylenes (total)		0.704	5.03	U

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
Bromofluorobenzene	30.18	30.61	101	85 - 120	
Dibromofluoromethane	30.18	30.62	101	80 - 125	
1,2-Dichloroethane-d4	30.18	29.88	99.0	75 - 140	
Toluene-d8	30.18	31.20	103	85 - 115	

ANALYSIS DATA SHEET

SB-09-01

Laboratory:	Empirical Laboratories, LLC			SDG:	1103247
Client:	SES, Inc. (S750)			Project:	FTS UST 2008-2010
Matrix:	Soil	Laboratory ID:	1103247-19	File ID:	0324719.D
Sampled:	03/29/11 15:00	Prepared:	03/31/11 00:00	Analyzed:	03/31/11 15:46
Solids:	91.32	Preparation:	5035	Dilution:	1
Batch:	1D04001	Sequence:	1D09401	Calibration:	1081001
Instrument:	MS-VOA6				

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
71-43-2	Benzene		0.497	5.29	U
100-41-4	Ethylbenzene		0.793	5.29	U
108-88-3	Toluene	2.66	0.909	5.29	J
1330-20-7	Xylenes (total)		0.740	5.29	U

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
Bromofluorobenzene	31.71	30.07	94.8	85 - 120	
Dibromofluoromethane	31.71	31.91	101	80 - 125	
1,2-Dichloroethane-d4	31.71	32.62	103	75 - 140	
Toluene-d8	31.71	33.86	107	85 - 115	

ANALYSIS DATA SHEET

SB-09-02

Laboratory:	Empirical Laboratories, LLC			SDG:	1103247
Client:	SES, Inc. (S750)			Project:	FTS UST 2008-2010
Matrix:	Soil	Laboratory ID:	1103247-20	File ID:	0324720.D
Sampled:	03/29/11 15:10	Prepared:	03/31/11 00:00	Analyzed:	03/31/11 16:10
Solids:	80.66	Preparation:	5035	Dilution:	1
Batch:	1D04001	Sequence:	1D09401	Calibration:	1081001

Instrument: MS-VOA6

Rev Qual

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
71-43-2	Benzene		0.543	5.77	U
100-41-4	Ethylbenzene		0.866	5.77	U
108-88-3	Toluene		0.993	5.77	U
1330-20-7	Xylenes (total)		0.808	5.77	U

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
Bromofluorobenzene	34.63	35.09	101	85 - 120	
Dibromofluoromethane	34.63	34.64	100	80 - 125	
1,2-Dichloroethane-d4	34.63	32.92	95.0	75 - 140	
Toluene-d8	34.63	35.87	104	85 - 115	

ANALYSIS DATA SHEET

SB-10-01

Laboratory:	Empirical Laboratories, LLC			SDG:	1103247
Client:	SES, Inc. (S750)			Project:	FTS UST 2008-2010
Matrix:	Soil	Laboratory ID:	1103247-21	File ID:	0324721D.D
Sampled:	03/29/11 15:40	Prepared:	03/31/11 00:00	Analyzed:	03/31/11 19:03
Solids:	68.32	Preparation:	5035	Dilution:	500
Batch:	1C31010	Sequence:	1D09103	Calibration:	1084002
Instrument:	MS-VOA3				

Rev 2nd J 10a

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
71-43-2	Benzene	504	341	3630	S, J, D
100-41-4	Ethylbenzene	3780	545	3630	D
108-88-3	Toluene		624	3630	Q, U
1330-20-7	Xylenes (total)	23400	508	3630	D

U

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
Bromofluorobenzene	43.56	47.06	108	85 - 120	
Dibromofluoromethane	43.56	46.02	106	80 - 125	S
1,2-Dichloroethane-d4	43.56	42.75	98.1	75 - 140	S
Toluene-d8	43.56	41.04	94.2	85 - 115	

ANALYSIS DATA SHEET

SB-10-02

Laboratory:	Empirical Laboratories, LLC			SDG:	1103247
Client:	SES, Inc. (S750)			Project:	FTS UST 2008-2010
Matrix:	Soil	Laboratory ID:	1103247-22	File ID:	0324722.D
Sampled:	03/29/11 15:45	Prepared:	03/31/11 00:00	Analyzed:	03/31/11 16:34
Solids:	81.50	Preparation:	5035	Dilution:	1
Batch:	1D04001	Sequence:	1D09401	Calibration:	1081001
Instrument:	MS-VOA6				

Rev Qual U

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
71-43-2	Benzene		0.522	5.56	U
100-41-4	Ethylbenzene		0.834	5.56	U
108-88-3	Toluene		0.956	5.56	U
1330-20-7	Xylenes (total)		0.778	5.56	U

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
Bromofluorobenzene	33.34	33.93	102	85 - 120	
Dibromofluoromethane	33.34	33.64	101	80 - 125	
1,2-Dichloroethane-d4	33.34	34.06	102	75 - 140	
Toluene-d8	33.34	34.68	104	85 - 115	

ANALYSIS DATA SHEET

SB-11-01

Laboratory:	Empirical Laboratories, LLC			SDG:	1103247
Client:	SES, Inc. (S750)			Project:	FTS UST 2008-2010
Matrix:	Soil	Laboratory ID:	1103247-23	File ID:	0324723D.D
Sampled:	03/29/11 16:10	Prepared:	03/31/11 00:00	Analyzed:	03/31/11 19:27
Solids:	88.60	Preparation:	5035	Dilution:	50
Batch:	1C31010	Sequence:	1D09103	Calibration:	1084002
Instrument:	MS-VOA3				

Rev Qual U J U U

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
71-43-2	Benzene		21.6	230	U
100-41-4	Ethylbenzene	147	34.5	230	J, D
108-88-3	Toluene		39.5	230	Q, U
1330-20-7	Xylenes (total)	758	32.2	230	D

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
Bromofluorobenzene	27.57	27.42	99.4	85 - 120	
Dibromofluoromethane	27.57	25.32	91.8	80 - 125	
1,2-Dichloroethane-d4	27.57	27.66	100	75 - 140	
Toluene-d8	27.57	28.60	104	85 - 115	

ANALYSIS DATA SHEET

SB-11-02

Laboratory:	Empirical Laboratories, LLC			SDG:	1103247
Client:	SES, Inc. (S750)			Project:	FTS UST 2008-2010
Matrix:	Soil	Laboratory ID:	1103247-24	File ID:	0324724.D
Sampled:	03/29/11 16:15	Prepared:	03/31/11 00:00	Analyzed:	03/31/11 16:59
Solids:	83.17	Preparation:	5035	Dilution:	1
Batch:	1D04001	Sequence:	1D09401	Calibration:	1081001
Instrument:	MS-VOA6				

Rev 2nd

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
71-43-2	Benzene	6.61	0.512	5.45	
100-41-4	Ethylbenzene	2.99	0.817	5.45	J
108-88-3	Toluene		0.937	5.45	U
1330-20-7	Xylenes (total)	17.3	0.762	5.45	

J
U

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
Bromofluorobenzene	32.67	33.00	101	85 - 120	
Dibromofluoromethane	32.67	34.06	104	80 - 125	
1,2-Dichloroethane-d4	32.67	32.80	100	75 - 140	
Toluene-d8	32.67	33.76	103	85 - 115	

ANALYSIS DATA SHEET

SB-12-01

Laboratory:	Empirical Laboratories, LLC			SDG:	1103247
Client:	SES, Inc. (S750)			Project:	FTS UST 2008-2010
Matrix:	Soil	Laboratory ID:	1103247-25RE1	File ID:	0324725R.D
Sampled:	03/29/11 16:40	Prepared:	04/01/11 00:00	Analyzed:	04/01/11 10:54
Solids:	80.60	Preparation:	5035	Dilution:	1
Batch:	1D01016	Sequence:	1D09201	Calibration:	1081001
Instrument:	MS-VOA6				

Rev 2nd

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
71-43-2	Benzene		0.534	5.68	U
100-41-4	Ethylbenzene		0.852	5.68	U
108-88-3	Toluene		0.977	5.68	U
1330-20-7	Xylenes (total)		0.795	5.68	U

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
Bromofluorobenzene	34.09	34.03	99.8	85 - 120	X
Dibromofluoromethane	34.09	35.05	103	80 - 125	
1,2-Dichloroethane-d4	34.09	34.26	101	75 - 140	
Toluene-d8	34.09	36.13	106	85 - 115	

ANALYSIS DATA SHEET

SB-12-02

Laboratory:	Empirical Laboratories, LLC			SDG:	1103247
Client:	SES, Inc. (S750)			Project:	FTS UST 2008-2010
Matrix:	Soil	Laboratory ID:	1103247-26RE1	File ID:	0324726R.D
Sampled:	03/29/11 16:50	Prepared:	04/01/11 00:00	Analyzed:	04/01/11 11:19
Solids:	90.89	Preparation:	5035	Dilution:	1
Batch:	1D01016	Sequence:	1D09201	Calibration:	1081001
Instrument:	MS-VOA6				

Rev 2 Qual U

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
71-43-2	Benzene		0.468	4.98	U
100-41-4	Ethylbenzene		0.747	4.98	U
108-88-3	Toluene		0.857	4.98	U
1330-20-7	Xylenes (total)		0.698	4.98	U

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
Bromofluorobenzene	29.90	30.71	103	85 - 120	X
Dibromofluoromethane	29.90	30.95	104	80 - 125	
1,2-Dichloroethane-d4	29.90	30.46	102	75 - 140	
Toluene-d8	29.90	30.42	102	85 - 115	

DATA VALIDATION WORKSHEETS
VOLATILE ORGANICS

Reviewer: Kitchings **Date:** 4/20

Project: FTC 419 **SDG:** 1103247 **Matrix/No. Samples:** S-25

I.	**Technical Holding Times**			
	A. Sample Preservation, Handling and Transport			
	1. Have all samples been preserved correctly?	(Yes)	No	N/A
	2. Have sample temperatures been kept at 4° C (+ or - 2 °)?	Yes	No	(N/A)
	3. Were all samples received in proper condition?	(Yes)	No	N/A
	4. Were any qualifications required based on this information?	Yes	(No)	N/A
	Coolers @ 1.7° C., 1.9° C.			
	B. Chain of Custody			
	1. Were all samples properly recorded on COCs?	(Yes)	No	N/A
	2. Were correct analyses performed on samples?	(Yes)	No	N/A
	C. Holding Times			
	1. Were samples extracted and analyzed within acceptable holding times?	(Yes)	No	N/A
	2. Were any qualifications required based on this information?	Yes	(No)	N/A

SAMPLED	PREPPED	ANALYZED
3/29	SB-12-01, SB-11-01: 3/31	3/31
	RES: SB-04-01, 07-01, 12-01, 1202: 4/1	4/1
	Others: 3/31	3/31

II.	**GC/MS Instrument Performance Check**			
	1. Were instrument performance check samples run for each analysis period?	(Yes)	No	N/A
	2. Were ion abundance criteria met for BFB analysis?	(Yes)	No	N/A
	3. Do laboratory forms match raw data?	Yes	No	(N/A)
	4. Were any qualifications required based on this information?	Yes	(No)	N/A

Comments/Qualifications:

ICAL 3/17 → 3/31 @ 8:53 → 3/31 @ 11:51 → 4/1 @ 6:40

95 base

all criteria met.

DATA VALIDATION WORKSHEETS
VOLATILE ORGANICS

Reviewer: Kitchings **Date:** 4/20

Project: FTC 419 **SDG:** 1103247 **Matrix/No. Samples:** S-25

III.	Initial Calibration			
	1. Were correct concentrations of standards used for initial calibration? Were samples analyzed within 12 hours of associated instrument performance check?	Yes	No	N/A
	2. Were initial calibration RRFs for all volatile target compounds and system monitoring compounds >or = 0.05? Do recalculations for RRFs agree with reported values?	Yes	No	N/A
	3. Were %RSDs < or = 30% for all volatile target compounds? Do recalculations for RSDs agree with reported values?	Yes	No	N/A
	4. Were any qualifications required based on this information?	Yes	No	N/A

Comments/Qualifications:

toluene.

RRFs >1.0
RSDs <15%

1.596
1.594
1.560
1.757 = 1.544
1.493
1.568
1.384
1.399

12.351 / 8

RSD

.00270
250
26
4537
260
58
2560
2103

.10064 / 7

= .1199 / 1.544 = 7.8%

IV.	Continuing Calibration			
	1. Were continuing calibration samples run at the required frequency, and compared to the correct initial calibration?	Yes	No	N/A
	2. Did calculations from raw data agree with laboratory reported values for RRF and %D?	Yes	No	N/A
	3. Were continuing calibration RRFs for volatile organic compounds and system monitoring compounds (surrogates) > or = 0.05?	Yes	No	N/A
	4. Were %D between initial calibration RRF and the continuing calibration RRFs within + or - 25%?	Yes	No	N/A
	5. Were any qualifications required based on this information?	Yes	No	N/A

Comments/Qualifications:

3/31
SB-10-01 ~~[illegible]~~
SB-11-01 4002
<17%

4/1
SB-04-01 1001
RE's 07-01
12-01
12-02
<21%.

3/31
1001
others
<15%.

Ethylb. 3.479 - 3.208 / ~~1.890 - 1.744~~ / ~~1.744~~ / 3.208 = 8.4%

JK

DATA VALIDATION WORKSHEETS
VOLATILE ORGANICS

Reviewer: Kitchings **Date:** 4/20

Project: FTC419 **SDG:** 1103247 **Matrix/No. Samples:** S-25

V.	**Blanks**			
	1. Were any target or non-target compounds reported in laboratory prep or calibration blanks?	Yes	(No)	N/A
	2. Were method blank analyses performed at required frequency, and for each GC/MS system used to analyze samples for each type of analysis (i.e., matrix)?	(Yes)	No	N/A
	3. Were any qualifications required based on this information?	Yes	(No)	N/A

Comments/Qualifications:

1010 3/31 U's. 1016 4/1 U's, 4001 3/31 U's

VI.	**System Monitoring Compounds (Surrogate Spikes)**			
	1. Were laboratory surrogate recoveries calculated and reported correctly?	(Yes)	No	N/A
	2. Were surrogate recoveries within acceptable limits?	Yes	(No)	N/A
	3. Were any qualifications required based on surrogate spike QC information?	(Yes)	No	N/A

Comments/Qualifications:

range 79.2-108 bfb — range 91.8-111 dbfm — range 95.0-111 1,2 dce @4 — tol.-d8 range 94.2-123.0

(UJ) — used -06 RE 04-01 - low; rejected -15 RE 07-01 - low

(UJ) — rejected -06 04-01 - low; used -07 07-01 - low

RE 04-01 - high. RE 07-01 - high. 07-01 - high

VII.	**Matrix Spikes/Matrix Spike Duplicates**			
	1. Were MS/MSD samples analyzed at required frequency for each ample matrix?	Yes	No	N/A
	2. Were MS/MSD results for recovery and RPD within advisory limits?	Yes	No	N/A
	3. Were Samples used for MS/MSD field blanks?	Yes	No	N/A
	4. Were laboratory reported results correctly calculated from raw data?	Yes	No	N/A
	5. Were any qualifications required, based on results of MS/MSD samples in conjunction with other QC information?	Yes	No	N/A

Comments/Qualifications:

None performed.

DATA VALIDATION WORKSHEETS
VOLATILE ORGANICS

Reviewer: Kitchings **Date:** 4 | 20

Project: FTC 419 **SDG:** 1103247 **Matrix/No. Samples:** S-25

VIII.	Laboratory Control Sample (LCS)			
	1. Were LCS samples run at correct frequency for each matrix samples?	Yes	No	N/A
	2. Were LCS calculations performed correctly, and did laboratory reported values match raw data? Were recoveries within laboratory QC limits?	Yes	No	N/A
	4. Were any qualifications required based on LCS data in conjunction with other QC information?	Yes	No	N/A

Comments/Qualifications:

both n's.

LCS 31070

...-105 - 11.. high toluene → @126%

Benzene 55.87/50.00 = -1016

4-01-7, 12-01, 02

98.7-112

98.0-115

4001-BS1 Ethylb. 47.93 / 50.00 = 95.9

48.86 = 97.7

LCS 88.6-98.2

LCSD 93.8-101.0

RPDs - 1.93-5.67

RPD .93/93.345 = 0.1%

IX.	Internal Standards			
	1. Were standard area counts within a factor of two (-50% to ~~+100%~~ 200) from associated calibration standard?	Yes	No	N/A
	2. Were retention times of internal standard within + or - 30 seconds of retention time of associated calibration check?	Yes	No	N/A
	3. Were any qualifications required based on internal standard results?	Yes	No	N/A

Comments/Qualifications:

SB-10-01 - low fb - benzene qual as "J"

IS2 → 274660 / 505859 = 54.3%

10.796 / 10.79

04-01, 07-01 RE's 1,4 dcb - low no cpds effected.

SB09-02 IS1

642887 / 614378 = 104.6%

7.939 / 7.948

X.	Target Compound Identification			
	1. Are relative retention times (RRTs) within + or - 0.06 RRT units of standard RRT?	Yes	No	N/A
	2. Do sample compound spectra meet specified criteria in relation to laboratory standard spectra?	Yes	No	N/A
	3. Were all compounds accounted for on chromatogram?	Yes	No	N/A

Comments/Qualifications: Level III - no raw data.

DATA VALIDATION WORKSHEETS
VOLATILE ORGANICS

Reviewer: Kitchings **Date:** 4/20

Project: FTC 419 **SDG:** 1103247 **Matrix/No. Samples:** S - 25

XI.	Compound Quantitation and Reported Contract Required Quantitation Limits (CRQLs)			
	1. Were sample results correctly calculated and reported by laboratory?	Yes	No	N/A
	2. Were correct internal standard quantitation ion and RRF used to quantify all compounds for all samples?	Yes	No	N/A
	3. Were CRQLs adjusted to reflect sample dilutions and dry weight factors not accounted for by the method?	Yes	No	N/A
	4. Were any laboratory QA/QC sample results calculated from peaks derived using manual integration?	Yes	No	N/A
	5. Were any qualifications required based on this information?	Yes	No	N/A

Comments/Qualifications:
No raw data - level III

XII.	Field QC			
	1. Were any Field Duplicates associated with this SDG?	Yes	No	N/A
	a. If Yes, were RPDs acceptable (50% for water samples, 100% for soil samples)?	Yes	No	N/A
	2. Were any field blanks or equipment rinsates associated with this SDG?	Yes	No	N/A
	a. If yes, were any compounds reported in samples >IDL?	Yes	No	N/A
	b. Were any qualifications required based on this information?	Yes	No	N/A

Comments/Qualifications: SB-03-01 u's; SB-03-019 u's; TB - 3/31 all u's. Trip 3/31 u's,

XIII.	Overall Assessment of Data			
	1. Are there any specific concerns or limitations regarding the data in this SDG?	Yes	No	N/A

Comments/Qualifications:

SDG: 1103258 Project: FTC Bldg 419

Method: Volatiles BTEX 8260B Matrix/No. Samples: Soil - 17

Validation Samples: SB-14-01 SB-15-02 SB-17-01 SB-18-02 SB-20-01
SB-13-01 SB-14-02 SB-16-01 SB-17-02 SB-19-01 SB-20-01D
SB-13-02 SB-15-01 SB-16-02 SB-18-01 SB-19-02 SB-20-02

Data Validation Report Summary

		Status Code	Comments
1.	Sample Preservation, Handling, and Transport	A	
2.	Chain of Custody	A	
3.	Holding Times	A	
4.	GC/MS Tune/Inst Perf	A	
5.	Calibrations	A	
6.	Blanks	A	
7.	Blank Spike/LCS	A	
8.	Matrix Spike	A	See comment #2
9.	Surrogates	X	
10.	Internal Standards	A	See comment #1
11.	Compound Identification	X	
12.	System Performance	A	
13.	Field QC Samples	A	
14.	Overall Assessment	X	

Status Codes:
A = Acceptable
R = Data Rejected
X = Data acceptable but qualified due to problems

Qualifications:

16 · Ethylbenzene & xylenes results exceeded the ICL in sample SB-16-01. A dilution was analyzed with the results within the limits - the orig. results were rejected in favor of the dilution.

7a Low surrogate recoveries in samples SB-14-02, SB-16-01, 17-01, 19-02 resulted in "UJ/J" qualifiers. SB-14-02RE also had a low IS recovery and was rejected in favor of the original. 15-01RE had all surrogate recoveries w/in limits - acceptable orig. rejected. 16-01RE(DL), 20-01 had a high tol.-d-8 recovery - all results "U" no quals.

Significant Findings/Recommendations:

#1 The 1,4-dichlorobenzene d-4 internal standard was outside the QC limits for 14-02, 14-02RE, 15-01, 20-019RE, 20-019RE. No target cpds were effected - no quals required.

#2 The MS/MSD Recoveries were outside the QC limits - all LCS/LCSD recoveries were acceptable so no qualifiers were added.

Overall Data Quality:

Acceptable as qualified.

Validator's Signature: J. Thomas Hutchings Date: 4-19-2011

EMPIRICAL LABORATORIES, LLC - CHAIN OF CUSTODY RECORD

14211

SHIP TO: 621 Mainstream Drive, Suite 270 ♦ Nashville, TN 37228 ♦ 615-345-1115 ♦ (fax) 615-846-5426

Send Results to:
Name DOUG HAWN
Company SES
Address 100 FLOYD CULLER
City OAK RIDGE
State, Zip TN
Phone (865) 481-7837
Fax
E-mail DHAWN@SPECPACONV.COM

Send Invoice to:
Name
Company
Address
City
State, Zip
Phone
Fax
E-mail

Project No./Name: BLDG 419

Sampler's (Signature): Julia McNeal

Analysis Requirements:

Lab Use Only Lab #	Date/Time Sampled	Sample Description	Sample Matrix	VOC 8260 - BTEX ONLY	PAH 8270, DRO 8015	Comments	No. of Bottles	Lab Use Only Containers/Pres.
1103258-01	~~3/30/11~~ LAB PREPARED	TRIP BLANK 9503	WATER	X		LAB PREPARED	2	2 JHy
-02	3/30/11 0855	SB-13-01	SOIL	X	X	+ MS/MSD	8	2m + L8
-03	3/30/11 0905	SB-13-02		X	X		4	1m + 30
-04	3/30/11 0930	SB-14-01		X	X		4	
-05	3/30/11 0940	SB-14-02		X	X		4	
-06	3/30/11 1010	SB-15-01		X	X		4	
-07	3/30/11 1015	SB-15-02		X	X		4	
-08	3/30/11 1030	SB-16-01		X	X		4	
-09	3/30/11 1040	SB-16-02		X	X		4	
-10	3/30/11 1055	SB-17-01		X	X		4	
-11	3/30/11 1100	SB-17-02		X	X		4	
-12	3/30/11 1115	SB-18-01	SOIL	X	X		4	

Lab Use Only:

VOA Headspace	Y	(N)	NA
Field Filtered	Y	(N)	NA
Correct Containers	(Y)	N	NA
Discrepancies	Y	(N)	NA
Cust. Seals Intact	(X)	N	NA
Containers Intact	(X)	N	NA

Airbill #: 2514

CAR #:

	Date/Time	Received By: (Signature)
Sample Kit Prep'd by: (Signature)		
Relinquished by: (Signature) Julia McNeal	Date/Time 3/30/11 1700	Received By: (Signature)
Relinquished by: (Signature)	Date/Time	Received By: (Signature)
Received for Laboratory by: (Signature)	Date/Time 5-31-11 08:00	Temperature 2.4°C

REMARKS:
Please contact Doug Hawn upon receipt.

48 HOUR TAT

Details:
Page 1 of 2
Cooler No. 1 of 2
Date Shipped 3/30/11
Shipped By FEDEX
Turnaround 48hr

Distribution: Original and yellow copies accompany sample shipment to laboratory; Pink retained by samplers.

1103258

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EMPIRICAL LABORATORIES, LLC - CHAIN OF CUSTODY RECORD

SHIP TO: 621 Mainstream Drive, Suite 270 ♦ Nashville, TN 37228 ♦ 615-345-1115 ♦ (fax) 615-846-5426

14212

Send Results to:
Name DOUG HAWN
Company SES
Address 1006 FLOYD CULLER
City OAK RIDGE
State, Zip TN
Phone (865) 481-7837
Fax
E-mail

Send Invoice to:
Name SAME
Company
Address
City
State, Zip
Phone
Fax
E-mail

Project No./Name: BLDG 419

Sampler's (Signature): Lilian McNeal

Analysis Requirements:
VOC 8260 BTEX ONLY
PAH 8270C, DRO SCGS

Lab Use Only:

VOA Headspace	Y	(N)	NA
Field Filtered	Y	(N)	NA
Correct Containers	(Y)	N	NA
Discrepancies	Y	(N)	NA
Cust. Seals Intact	Y	N	NA
Containers Intact	Y	N	NA

Airbill #: 2519
CAR #:

Lab Use Only Lab #	Date/Time Sampled	Sample Description	Sample Matrix	VOC 8260 BTEX ONLY	PAH 8270C, DRO SCGS	Comments	No. of Bottles	Lab Use Only Containers/Pres.
1103258-13	3/30/11 1125	SB-18-02	SOIL	X	X		4	1MT30
-14	3/30/11 1400	SB-19-01		X	X		4	
-15	3/30/11 1405	SB-19-02		X	X		4	
-16	3/30/11 1415	SB-20-01		X	X		4	
-17	3/30/11 1415	SB-20-019		X	X		4	
-18	3/30/11 1420	SB-20-02	SOIL	X	X		4	
	3/30/11 1630	RS-01 LTM	~~WATER~~	*	*		5 LTM	

Sample Kit Prep'd by: (Signature)	Date/Time	Received By: (Signature)	
Relinquished by: (Signature) Lilian McNeal	Date/Time 3/30/11 1700	Received By: (Signature)	
Relinquished by: (Signature)	Date/Time	Received By: (Signature)	
Received for Laboratory by: (Signature)	Date/Time 3-31-11 08:00	Temperature 2.4 °C	

REMARKS:
Please contact Doug Hawn upon receipt

* 48 Hour TAT *

Details:
Page 2 of 2
Cooler No. 1 of 1
Date Shipped 3/30/11
Shipped By FedEx
Turnaround 48 HR

Distribution: Original and yellow copies accompany sample shipment to laboratory; Pink retained by samplers.

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1103258

ANALYSIS DATA SHEET

SB-13-01

Laboratory:	Empirical Laboratories, LLC			SDG:	1103258
Client:	SES, Inc. (S750)			Project:	FTS UST 2008-2010
Matrix:	Solid	Laboratory ID:	1103258-02	File ID:	0325802.D
Sampled:	03/30/11 08:55	Prepared:	03/31/11 00:00	Analyzed:	03/31/11 21:27
Solids:	91.51	Preparation:	5035	Dilution:	1
Batch:	1D01001	Sequence:	1D09107	Calibration:	1081001
Instrument:	MS-VOA6				

Rev Qual U

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
71-43-2	Benzene		0.526	5.60	N, U
100-41-4	Ethylbenzene		0.840	5.60	N, U
108-88-3	Toluene		0.963	5.60	N, U
1330-20-7	Xylenes (total)		0.784	5.60	N, U

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
Bromofluorobenzene	33.59	30.14	89.7	85 - 120	
Dibromofluoromethane	33.59	34.19	102	80 - 125	
1,2-Dichloroethane-d4	33.59	35.06	104	75 - 140	
Toluene-d8	33.59	36.99	110	85 - 115	

ANALYSIS DATA SHEET

SB-13-02

Laboratory:	Empirical Laboratories, LLC			SDG:	1103258
Client:	SES, Inc. (S750)			Project:	FTS UST 2008-2010
Matrix:	Soil	Laboratory ID:	1103258-03RE1	File ID:	0325803D.D
Sampled:	03/30/11 09:05	Prepared:	04/01/11 00:00	Analyzed:	04/01/11 17:01
Solids:	80.24	Preparation:	5035	Dilution:	50
Batch:	1D01016	Sequence:	1D09201	Calibration:	1081001
Instrument:	MS-VOA6				

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
71-43-2	Benzene	183	26.2	279	J, D
100-41-4	Ethylbenzene	2190	41.9	279	D
108-88-3	Toluene		48.0	279	U
1330-20-7	Xylenes (total)	10500	39.1	279	D

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
Bromofluorobenzene	33.50	39.26	117	85 - 120	X
Dibromofluoromethane	33.50	33.51	100	80 - 125	
1,2-Dichloroethane-d4	33.50	34.17	102	75 - 140	
Toluene-d8	33.50	33.78	101	85 - 115	

ANALYSIS DATA SHEET

SB-14-01

Laboratory:	Empirical Laboratories, LLC			SDG:	1103258
Client:	SES, Inc. (S750)			Project:	FTS UST 2008-2010
Matrix:	Soil	Laboratory ID:	1103258-04	File ID:	0325804.D
Sampled:	03/30/11 09:30	Prepared:	03/31/11 00:00	Analyzed:	03/31/11 21:52
Solids:	90.80	Preparation:	5035	Dilution:	1
Batch:	1D01001	Sequence:	1D09107	Calibration:	1081001
Instrument:	MS-VOA6				

Rev 2nd

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
71-43-2	Benzene		0.474	5.04	U
100-41-4	Ethylbenzene	1.12	0.756	5.04	J
108-88-3	Toluene		0.867	5.04	U
1330-20-7	Xylenes (total)		0.706	5.04	U

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
Bromofluorobenzene	30.26	26.19	86.5	85 - 120	
Dibromofluoromethane	30.26	31.59	104	80 - 125	
1,2-Dichloroethane-d4	30.26	30.94	102	75 - 140	
Toluene-d8	30.26	34.31	113	85 - 115	

ANALYSIS DATA SHEET

SB-14-02

Laboratory:	Empirical Laboratories, LLC			SDG:	1103258
Client:	SES, Inc. (S750)			Project:	FTS UST 2008-2010
Matrix:	Soil	Laboratory ID:	1103258-05	File ID:	0325805.D
Sampled:	03/30/11 09:40	Prepared:	03/31/11 00:00	Analyzed:	03/31/11 22:16
Solids:	38.08	Preparation:	5035	Dilution:	1
Batch:	1D01001	Sequence:	1D09107	Calibration:	1081001
Instrument:	MS-VOA6				

Rev 2nd UJ 7a

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
71-43-2	Benzene		1.63	17.3	U
100-41-4	Ethylbenzene		2.60	17.3	U
108-88-3	Toluene		2.98	17.3	U
1330-20-7	Xylenes (total)		2.43	17.3	U

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
Bromofluorobenzene	103.9	66.73	64.2	85 - 120	*
Dibromofluoromethane	103.9	109.1	105	80 - 125	
1,2-Dichloroethane-d4	103.9	108.5	104	75 - 140	
Toluene-d8	103.9	150.5	145	85 - 115	*

ANALYSIS DATA SHEET

SB-14-02

Laboratory:	Empirical Laboratories, LLC			SDG:	1103258
Client:	SES, Inc. (S750)			Project:	FTS UST 2008-2010
Matrix:	Soil	Laboratory ID:	1103258-05RE1	File ID:	0325805R.D
Sampled:	03/30/11 09:40	Prepared:	04/01/11 00:00	Analyzed:	04/01/11 09:41
Solids:	38.08	Preparation:	5035	Dilution:	1
Batch:	1D01016	Sequence:	1D09201	Calibration:	1081001
Instrument:	MS-VOA6				

Rev 2nd R. 16

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
71-43-2	Benzene		1.85	19.7	U
100-41-4	Ethylbenzene		2.95	19.7	U
108-88-3	Toluene		3.38	19.7	U
1330-20-7	Xylenes (total)		2.75	19.7	U

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
Bromofluorobenzene	117.9	88.74	75.2	85 - 120	*X
Dibromofluoromethane	117.9	128.0	109	80 - 125	
1,2-Dichloroethane-d4	117.9	122.1	104	75 - 140	
Toluene-d8	117.9	151.9	129	85 - 115	*

ANALYSIS DATA SHEET

SB-15-01

Laboratory:	Empirical Laboratories, LLC			SDG:	1103258
Client:	SES, Inc. (S750)			Project:	FTS UST 2008-2010
Matrix:	Soil	Laboratory ID:	1103258-06	File ID:	0325806.D
Sampled:	03/30/11 10:10	Prepared:	03/31/11 00:00	Analyzed:	03/31/11 22:40
Solids:	83.55	Preparation:	5035	Dilution:	1
Batch:	1D01001	Sequence:	1D09107	Calibration:	1081001
Instrument:	MS-VOA6				

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
71-43-2	Benzene		0.478	5.08	U
100-41-4	Ethylbenzene		0.762	5.08	U
108-88-3	Toluene		0.874	5.08	U
1330-20-7	Xylenes (total)		0.711	5.08	U

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
Bromofluorobenzene	30.48	25.01	82.0	85 - 120	*
Dibromofluoromethane	30.48	30.91	101	80 - 125	
1,2-Dichloroethane-d4	30.48	30.42	99.8	75 - 140	
Toluene-d8	30.48	35.45	116	85 - 115	*

ANALYSIS DATA SHEET

SB-15-01

Laboratory:	Empirical Laboratories, LLC		SDG:	1103258	
Client:	SES, Inc. (S750)		Project:	FTS UST 2008-2010	
Matrix:	Soil	Laboratory ID:	1103258-06RE2	File ID:	0325806D.D
Sampled:	03/30/11 10:10	Prepared:	04/02/11 00:00	Analyzed:	04/02/11 20:08
Solids:	83.55	Preparation:	5035	Dilution:	50
Batch:	1D02005	Sequence:	1D09402	Calibration:	1081001
Instrument:	MS-VOA6				

Rev Qual 16

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
71-43-2	Benzene		24.1	256	U
100-41-4	Ethylbenzene		38.4	256	U
108-88-3	Toluene		44.1	256	U
1330-20-7	Xylenes (total)		35.9	256	U

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
Bromofluorobenzene	30.74	30.98	101	85 - 120	
Dibromofluoromethane	30.74	31.47	102	80 - 125	
1,2-Dichloroethane-d4	30.74	28.28	92.0	75 - 140	
Toluene-d8	30.74	31.87	104	85 - 115	

ANALYSIS DATA SHEET

SB-15-02

Laboratory:	Empirical Laboratories, LLC			SDG:	1103258
Client:	SES, Inc. (S750)			Project:	FTS UST 2008-2010
Matrix:	Soil	Laboratory ID:	1103258-07RE1	File ID:	0325807R.D
Sampled:	03/30/11 10:15	Prepared:	04/01/11 00:00	Analyzed:	04/01/11 11:43
Solids:	81.04	Preparation:	5035	Dilution:	1
Batch:	1D01016	Sequence:	1D09201	Calibration:	1081001
Instrument:	MS-VOA6				

Rev Qual e

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
71-43-2	Benzene		0.502	5.34	U
100-41-4	Ethylbenzene		0.801	5.34	U
108-88-3	Toluene		0.918	5.34	U
1330-20-7	Xylenes (total)		0.747	5.34	U

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
Bromofluorobenzene	32.02	29.51	92.2	85 - 120	X
Dibromofluoromethane	32.02	33.32	104	80 - 125	
1,2-Dichloroethane-d4	32.02	32.17	100	75 - 140	
Toluene-d8	32.02	34.80	109	85 - 115	

ANALYSIS DATA SHEET

SB-16-01

Laboratory:	Empirical Laboratories, LLC			SDG:	1103258
Client:	SES, Inc. (S750)			Project:	FTS UST 2008-2010
Matrix:	Soil	Laboratory ID:	1103258-08	File ID:	0325808.D
Sampled:	03/30/11 10:30	Prepared:	03/31/11 00:00	Analyzed:	03/31/11 23:29
Solids:	85.95	Preparation:	5035	Dilution:	1
Batch:	1D01001	Sequence:	1D09107	Calibration:	1081001
Instrument:	MS-VOA6				

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
71-43-2	Benzene	143	0.440	4.68	
100-41-4	Ethylbenzene	533	0.701	4.68	E
108-88-3	Toluene	9.55	0.804	4.68	
1330-20-7	Xylenes (total)	1660	0.655	4.68	E

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
Bromofluorobenzene	28.06	38.40	137	85 - 120	*
Dibromofluoromethane	28.06	32.24	115	80 - 125	
1,2-Dichloroethane-d4	28.06	33.39	119	75 - 140	
Toluene-d8	28.06	24.51	87.4	85 - 115	

Rev 2 nd
J 7a
R 16
J 7a
R 16

ANALYSIS DATA SHEET

SB-16-01

Laboratory:	Empirical Laboratories, LLC			SDG:	1103258
Client:	SES, Inc. (S750)			Project:	FTS UST 2008-2010
Matrix:	Soil	Laboratory ID:	1103258-08RE1	File ID:	0325808D.D
Sampled:	03/30/11 10:30	Prepared:	04/01/11 00:00	Analyzed:	04/01/11 16:36
Solids:	85.95	Preparation:	5035	Dilution:	50
Batch:	1D01016	Sequence:	1D09201	Calibration:	1081001
Instrument:	MS-VOA6				

Rev 2nd

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q	
71-43-2	Benzene		24.1	256	U	R 16
100-41-4	Ethylbenzene	2290	38.4	256	D	
108-88-3	Toluene		44.0	256	U	R 16
1330-20-7	Xylenes (total)	4700	35.8	256	D	

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
Bromofluorobenzene	30.73	36.87	120	85 - 120	X
Dibromofluoromethane	30.73	30.92	101	80 - 125	
1,2-Dichloroethane-d4	30.73	30.36	98.8	75 - 140	
Toluene-d8	30.73	31.40	102	85 - 115	

ANALYSIS DATA SHEET

SB-16-02

Laboratory:	Empirical Laboratories, LLC		SDG:	1103258	
Client:	SES, Inc. (S750)		Project:	FTS UST 2008-2010	
Matrix:	Soil	Laboratory ID:	1103258-09	File ID:	0325809D.D
Sampled:	03/30/11 10:40	Prepared:	03/31/11 00:00	Analyzed:	04/01/11 02:43
Solids:	76.43	Preparation:	5035	Dilution:	100
Batch:	1D01001	Sequence: 1D09107	Calibration:	1081001	Instrument: MS-VOA6

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
71-43-2	Benzene	58.9	47.4	504	J, D
100-41-4	Ethylbenzene	385	75.6	504	J, D
108-88-3	Toluene		86.7	504	U
1330-20-7	Xylenes (total)	1820	70.6	504	D

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
Bromofluorobenzene	30.24	32.03	106	85 - 120	
Dibromofluoromethane	30.24	30.54	101	80 - 125	
1,2-Dichloroethane-d4	30.24	29.03	96.0	75 - 140	
Toluene-d8	30.24	31.00	103	85 - 115	

Rev
Qual
J
J
U

ANALYSIS DATA SHEET

SB-17-01

Laboratory:	Empirical Laboratories, LLC			SDG:	1103258
Client:	SES, Inc. (S750)			Project:	FTS UST 2008-2010
Matrix:	Soil	Laboratory ID:	1103258-10	File ID:	0325810.D
Sampled:	03/30/11 10:55	Prepared:	03/31/11 00:00	Analyzed:	03/31/11 23:53
Solids:	77.36	Preparation:	5035	Dilution:	1
Batch:	1D01001	Sequence:	1D09107	Calibration:	1081001
Instrument:	MS-VOA6				

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q	Raw Qual
71-43-2	Benzene	1.83	0.517	5.50	J	J 7a
100-41-4	Ethylbenzene	28.9	0.824	5.50		J 7a
108-88-3	Toluene		0.945	5.50	U	UJ 7a
1330-20-7	Xylenes (total)	94.3	0.769	5.50		J 7a

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
Bromofluorobenzene	32.97	31.68	96.1	85 - 120	
Dibromofluoromethane	32.97	35.13	107	80 - 125	
1,2-Dichloroethane-d4	32.97	36.15	110	75 - 140	
Toluene-d8	32.97	25.35	76.9	85 - 115	*

ANALYSIS DATA SHEET

SB-17-02

Laboratory:	Empirical Laboratories, LLC			SDG:	1103258
Client:	SES, Inc. (S750)			Project:	FTS UST 2008-2010
Matrix:	Soil	Laboratory ID:	1103258-11	File ID:	0325811D.D
Sampled:	03/30/11 11:00	Prepared:	03/31/11 00:00	Analyzed:	04/01/11 03:07
Solids:	53.04	Preparation:	5035	Dilution:	100
Batch:	1D01001	Sequence:	1D09107	Calibration:	1081001
Instrument:	MS-VOA6				

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
71-43-2	Benzene		100	1060	U
100-41-4	Ethylbenzene		160	1060	U
108-88-3	Toluene		183	1060	U
1330-20-7	Xylenes (total)	502	149	1060	J, D

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
Bromofluorobenzene	63.84	66.77	105	85 - 120	
Dibromofluoromethane	63.84	64.29	101	80 - 125	
1,2-Dichloroethane-d4	63.84	62.42	97.8	75 - 140	
Toluene-d8	63.84	65.72	103	85 - 115	

Rev Qual U U U J

ANALYSIS DATA SHEET

SB-18-01

Laboratory:	Empirical Laboratories, LLC		SDG:	1103258	
Client:	SES, Inc. (S750)		Project:	FTS UST 2008-2010	
Matrix:	Soil	Laboratory ID:	1103258-12	File ID:	0325812D.D
Sampled:	03/30/11 11:15	Prepared:	03/31/11 00:00	Analyzed:	04/01/11 03:31
Solids:	59.62	Preparation:	5035	Dilution:	100
Batch:	1D01001	Sequence:	1D09107	Calibration:	1081001
Instrument:	MS-VOA6				

Rev Qual J U U J

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
71-43-2	Benzene	84.3	83.3	887	J, D
100-41-4	Ethylbenzene		133	887	U
108-88-3	Toluene		152	887	U
1330-20-7	Xylenes (total)	563	124	887	J, D

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
Bromofluorobenzene	53.19	55.35	104	85 - 120	
Dibromofluoromethane	53.19	52.82	99.3	80 - 125	
1,2-Dichloroethane-d4	53.19	54.56	103	75 - 140	
Toluene-d8	53.19	55.01	103	85 - 115	

ANALYSIS DATA SHEET

SB-18-02

Laboratory:	Empirical Laboratories, LLC		SDG:	1103258	
Client:	SES, Inc. (S750)		Project:	FTS UST 2008-2010	
Matrix:	Soil	Laboratory ID:	1103258-13	File ID:	0325813D.D
Sampled:	03/30/11 11:25	Prepared:	03/31/11 00:00	Analyzed:	04/01/11 03:56
Solids:	80.61	Preparation:	5035	Dilution:	100
Batch:	1D01001	Sequence: 1D09107	Calibration:	1081001	Instrument: MS-VOA6

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
71-43-2	Benzene	173	68.1	725	J, D
100-41-4	Ethylbenzene	276	109	725	J, D
108-88-3	Toluene		125	725	U
1330-20-7	Xylenes (total)	2590	101	725	D

Rev Qual
J
J
U

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
Bromofluorobenzene	43.48	45.96	106	85 - 120	
Dibromofluoromethane	43.48	43.72	101	80 - 125	
1,2-Dichloroethane-d4	43.48	43.48	100	75 - 140	
Toluene-d8	43.48	45.36	104	85 - 115	

ANALYSIS DATA SHEET

SB-19-01

Laboratory:	Empirical Laboratories, LLC			SDG:	1103258
Client:	SES, Inc. (S750)			Project:	FTS UST 2008-2010
Matrix:	Soil	Laboratory ID:	1103258-14	File ID:	0325814.D
Sampled:	03/30/11 14:00	Prepared:	03/31/11 00:00	Analyzed:	04/01/11 00:17
Solids:	91.10	Preparation:	5035	Dilution:	1
Batch:	1D01001	Sequence:	1D09107	Calibration:	1081001
Instrument:	MS-VOA6				

Rev 2nd u

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
71-43-2	Benzene		0.458	4.87	U
100-41-4	Ethylbenzene		0.731	4.87	U
108-88-3	Toluene		0.838	4.87	U
1330-20-7	Xylenes (total)		0.682	4.87	U

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
Bromofluorobenzene	29.25	31.28	107	85 - 120	
Dibromofluoromethane	29.25	30.28	104	80 - 125	
1,2-Dichloroethane-d4	29.25	29.77	102	75 - 140	
Toluene-d8	29.25	30.74	105	85 - 115	

ANALYSIS DATA SHEET

SB-19-02

Laboratory:	Empirical Laboratories, LLC			SDG:	1103258
Client:	SES, Inc. (S750)			Project:	FTS UST 2008-2010
Matrix:	Soil	Laboratory ID:	1103258-15RE1	File ID:	0325815R.D
Sampled:	03/30/11 14:05	Prepared:	04/01/11 00:00	Analyzed:	04/01/11 13:46
Solids:	83.85	Preparation:	5035	Dilution:	1
Batch:	1D01016	Sequence:	1D09201	Calibration:	1081001
Instrument:	MS-VOA6				

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
71-43-2	Benzene		0.619	6.58	U
100-41-4	Ethylbenzene		0.987	6.58	U
108-88-3	Toluene		1.13	6.58	U
1330-20-7	Xylenes (total)		0.921	6.58	U

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
Bromofluorobenzene	39.49	34.57	87.5	85 - 120	X
Dibromofluoromethane	39.49	42.48	108	80 - 125	
1,2-Dichloroethane-d4	39.49	42.63	108	75 - 140	
Toluene-d8	39.49	47.51	120	85 - 115	*

ANALYSIS DATA SHEET

SB-20-01

Laboratory:	Empirical Laboratories, LLC			SDG:	1103258
Client:	SES, Inc. (S750)			Project:	FTS UST 2008-2010
Matrix:	Soil	Laboratory ID:	1103258-16	File ID:	0325816.D
Sampled:	03/30/11 14:15	Prepared:	03/31/11 00:00	Analyzed:	04/01/11 01:05
Solids:	77.08	Preparation:	5035	Dilution:	1
Batch:	1D01001	Sequence:	1D09107	Calibration:	1081001
Instrument:	MS-VOA6				

Rev 2nd

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
71-43-2	Benzene		0.601	6.40	U
100-41-4	Ethylbenzene		0.960	6.40	U
108-88-3	Toluene		1.10	6.40	U
1330-20-7	Xylenes (total)		0.896	6.40	U

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
Bromofluorobenzene	38.38	33.21	86.5	85 - 120	
Dibromofluoromethane	38.38	40.06	104	80 - 125	
1,2-Dichloroethane-d4	38.38	40.43	105	75 - 140	
Toluene-d8	38.38	45.63	119	85 - 115	*

ANALYSIS DATA SHEET

SB-20-019

Laboratory:	Empirical Laboratories, LLC			SDG:	1103258
Client:	SES, Inc. (S750)			Project:	FTS UST 2008-2010
Matrix:	Soil	Laboratory ID:	1103258-17	File ID:	0325817.D
Sampled:	03/30/11 14:15	Prepared:	03/31/11 00:00	Analyzed:	04/01/11 01:30
Solids:	69.39	Preparation:	5035	Dilution:	1
Batch:	1D01001	Sequence:	1D09107	Calibration:	1081001
Instrument:	MS-VOA6				

Raw Qual UJ 7a

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
71-43-2	Benzene		0.649	6.90	U
100-41-4	Ethylbenzene		1.04	6.90	U
108-88-3	Toluene		1.19	6.90	U
1330-20-7	Xylenes (total)		0.966	6.90	U

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
Bromofluorobenzene	41.41	32.93	79.5	85 - 120	*
Dibromofluoromethane	41.41	43.54	105	80 - 125	
1,2-Dichloroethane-d4	41.41	44.48	107	75 - 140	
Toluene-d8	41.41	52.04	126	85 - 115	*

ANALYSIS DATA SHEET

SB-20-019

Laboratory:	Empirical Laboratories, LLC		SDG:	1103258	
Client:	SES, Inc. (S750)		Project:	FTS UST 2008-2010	
Matrix:	Soil	Laboratory ID:	1103258-17RE1	File ID:	0325817R.D
Sampled:	03/30/11 14:15	Prepared:	04/01/11 00:00	Analyzed:	04/01/11 12:08
Solids:	69.39	Preparation:	5035	Dilution:	1
Batch:	1D01016	Sequence:	1D09201	Calibration:	1081001
Instrument:	MS-VOA6				

Rev Qual R 16

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
71-43-2	Benzene		0.673	7.16	U
100-41-4	Ethylbenzene		1.07	7.16	U
108-88-3	Toluene		1.23	7.16	U
1330-20-7	Xylenes (total)		1.00	7.16	U

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
Bromofluorobenzene	42.97	35.27	82.1	85 - 120	*X
Dibromofluoromethane	42.97	46.30	108	80 - 125	
1,2-Dichloroethane-d4	42.97	45.53	106	75 - 140	
Toluene-d8	42.97	51.64	120	85 - 115	*

ANALYSIS DATA SHEET

SB-20-02

Laboratory:	Empirical Laboratories, LLC			SDG:	1103258
Client:	SES, Inc. (S750)			Project:	FTS UST 2008-2010
Matrix:	Soil	Laboratory ID:	1103258-18RE1	File ID:	0325818R.D
Sampled:	03/30/11 14:20	Prepared:	04/01/11 00:00	Analyzed:	04/01/11 13:21
Solids:	77.42	Preparation:	5035	Dilution:	1
Batch:	1D01016	Sequence:	1D09201	Calibration:	1081001
Instrument:	MS-VOA6				

Rev Qual → U

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
71-43-2	Benzene		0.653	6.94	U
100-41-4	Ethylbenzene		1.04	6.94	U
108-88-3	Toluene		1.19	6.94	U
1330-20-7	Xylenes (total)		0.972	6.94	U

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
Bromofluorobenzene	41.67	42.74	103	85 - 120	X
Dibromofluoromethane	41.67	44.12	106	80 - 125	
1,2-Dichloroethane-d4	41.67	43.16	104	75 - 140	
Toluene-d8	41.67	43.28	104	85 - 115	

DATA VALIDATION WORKSHEETS
VOLATILE ORGANICS

Reviewer: Kitchings **Date:** 4/19

Project: ~~1103258~~ FTG 419 **SDG:** 1103258 **Matrix/No. Samples:** S-17

I.	**Technical Holding Times**			
	A. Sample Preservation, Handling and Transport			
	1. Have all samples been preserved correctly?	(Yes)	No	N/A
	2. Have sample temperatures been kept at 4° C (+ or - 2 °)?	(Yes)	No	N/A
	3. Were all samples received in proper condition?	(Yes)	No	N/A
	4. Were any qualifications required based on this information?	Yes	(No)	N/A
	Coolers @ 2.4° C.			
	B. Chain of Custody			
	1. Were all samples properly recorded on COCs?	(Yes)	No	N/A
	2. Were correct analyses performed on samples?	(Yes)	No	N/A
	C. Holding Times			
	1. Were samples extracted and analyzed within acceptable holding times?	(Yes)	No	N/A
	2. Were any qualifications required based on this information?	Yes	(No)	N/A

SAMPLED	PREPPED	ANALYZED
3/30	↘	3/31 4/1 4/2

II.	**GC/MS Instrument Performance Check**			
	1. Were instrument performance check samples run for each analysis period?	(Yes)	No	N/A
	2. Were ion abundance criteria met for BFB analysis?	(Yes)	No	N/A
	3. Do laboratory forms match raw data?	Yes	No	(N/A)
	4. Were any qualifications required based on this information?	Yes	(No)	N/A

Comments/Qualifications:

3/7 9017 → 3/31 9201 → 4/1 9402 → 4/2

95 base

all criteria met.

DATA VALIDATION WORKSHEETS
VOLATILE ORGANICS

Reviewer: Kitchings **Date:** 4/19

Project: FTC-419 **SDG:** 1103258 **Matrix/No. Samples:** S-17

III.	Initial Calibration			
	1. Were correct concentrations of standards used for initial calibration? Were samples analyzed within 12 hours of associated instrument performance check?	Yes	No	N/A
	2. Were initial calibration RRFs for all volatile target compounds and system monitoring compounds >or = 0.05? Do recalculations for RRFs agree with reported values?	Yes	No	N/A
	3. Were %RSDs < or = 30% for all volatile target compounds? Do recalculations for RSDs agree with reported values?	Yes	No	N/A
	4. Were any qualifications required based on this information?	Yes	No	N/A

Comments/Qualifications:

3/7 toluene.

RRFS

>0.7 RSDs <11%

.897
.856
.964
.879
.870
.975
.900
.908
.839

= .898

0.8086 / 9

RSD

.00176
436
36
78
63
10
348

$\sqrt{.01147}$ / 8 = .0379 / .898 = 4.2%

IV.	Continuing Calibration			
	1. Were continuing calibration samples run at the required frequency, and compared to the correct initial calibration?	Yes	No	N/A
	2. Did calculations from raw data agree with laboratory reported values for RRF and %D?	~~Yes~~	No	N/A
	3. Were continuing calibration RRFs for volatile organic compounds and system monitoring compounds (surrogates) > or = 0.05?	Yes	No	N/A
	4. Were %D between initial calibration RRF and the continuing calibration RRFs within + or - 25%?	Yes	No	N/A
	5. Were any qualifications required based on this information?	Yes	No	N/A

Comments/Qualifications:

9107 CCV1

2.7 - 11.

xyl. ~~320.3 - 300~~ / ~~300~~

= 2.505 - 2.346 / 2.346

= 6.8%

9201

CCV1

2.1 - 20.3

toluene.

1.598 - 1.478 / 1.598

= 7.5%.

9402 CCV1 4/2

.001 - 17.3

benz. 1.113 - 0.954 / 1.113

14.3%

DATA VALIDATION WORKSHEETS
VOLATILE ORGANICS

Reviewer: Kitchings **Date:** 4/19

Project: FTC-419 **SDG:** 1103258 **Matrix/No. Samples:** S-17

V.	**Blanks**			
	1. Were any target or non-target compounds reported in laboratory prep or calibration blanks?	Yes	No	N/A
	2. Were method blank analyses performed at required frequency, and for each GC/MS system used to analyze samples for each type of analysis (i.e., matrix)?	Yes	No	N/A
	3. Were any qualifications required based on this information?	Yes	No	N/A

Comments/Qualifications:

1001-BLK2 3/31 U's.

1016-BLK2 4/1 U's

2005-BLK1 4/2 U's

VI.	**System Monitoring Compounds (Surrogate Spikes)**			
	1. Were laboratory surrogate recoveries calculated and reported correctly?	Yes	No	N/A
	2. Were surrogate recoveries within acceptable limits?	Yes	No	N/A
	3. Were any qualifications required based on surrogate spike QC information?	Yes	No	N/A

Comments/Qualifications:

14-02, 15-01, 20-019, 14-02RE, 16-01, 17-01, ~~20-01~~, 20-019, 20-019RE

UJ

1 low ~~low~~ high low ~~low~~ low

3 ok

3 ok

4 high. ok ~~ok~~ high high

14-02 bfb

VII.	**Matrix Spikes/Matrix Spike Duplicates**			
	1. Were MS/MSD samples analyzed at required frequency for each ample matrix?	Yes	No	N/A
	2. Were MS/MSD results for recovery and RPD within advisory limits?	Yes	No	N/A
	3. Were Samples used for MS/MSD field blanks?	Yes	No	N/A
	4. Were laboratory reported results correctly calculated from raw data?	Yes	No	N/A
	5. Were any qualifications required, based on results of MS/MSD samples in conjunction with other QC information?	Yes	No	N/A

Comments/Qualifications:

SB-13-01

3-4, 4-4, 1-8 ms - all but to have low

6-4 msp - all low

RPD's - all out.

Ethylb. 40.31 / 55.19 = 136.9%

25.61 / 53.57 = 20.9%

RP 14.70 / 32.96 = 44.6%

DATA VALIDATION WORKSHEETS
VOLATILE ORGANICS

Reviewer: Kitchings **Date:** 4/19

Project: FRC-419 **SDG:** 410 3258 **Matrix/No. Samples:** S-17

VIII.	Laboratory Control Sample (LCS)			
	1. Were LCS samples run at correct frequency for each matrix samples?	Yes	No	N/A
	2. Were LCS calculations performed correctly, and did laboratory reported values match raw data? Were recoveries within laboratory QC limits?	Yes	No	N/A
	4. Were any qualifications required based on LCS data in conjunction with other QC information?	Yes	No	N/A

Comments/Qualifications: 1001-BS1 2005-BS1

LCS/LCSD.

Toluene. $\frac{53.53}{50.00} = 107.1$

Benz. $\frac{47.47}{50.0} = 94.9\%$

1.

102-114 Toluene $\frac{54.10}{50.00} = 108.2$

1016-BS1

IX.	Internal Standards			
	1. Were standard area counts within a factor of two (-50% to +100%) from associated calibration standard?	Yes	No	N/A
	2. Were retention times of internal standard within + or - 30 seconds of retention time of associated calibration check?	Yes	No	N/A
	3. Were any qualifications required based on internal standard results?	Yes	No	N/A

Comments/Qualifications:

RF1

IS 1 14-01 $\frac{612025}{634164} = 95.8\%$ $\frac{7.947}{7.939}$

IS 2 18-01 $\frac{284061}{250106} = 113.6\%$ $\frac{11.06}{11.05}$

IS 3 13-02 $\frac{226331}{248136} = 91.2$ $\frac{13.44}{13.44}$

1,4 dcb - low 14-02

ff 14-02 14-02 RE

15-01

20-019 → RE

hit cpds affected

no qual

X.	Target Compound Identification			
	1. Are relative retention times (RRTs) within + or - 0.06 RRT units of standard RRT?	Yes	No	N/A
	2. Do sample compound spectra meet specified criteria in relation to laboratory standard spectra?	Yes	No	N/A
	3. Were all compounds accounted for on chromatogram?	Yes	No	N/A

Comments/Qualifications:

No raw data level IV

DATA VALIDATION WORKSHEETS
VOLATILE ORGANICS

Reviewer: Kitchings **Date:** 4/19

Project: FTC-419 **SDG:** 1103258 **Matrix/No. Samples:** S-17

XI.	Compound Quantitation and Reported Contract Required Quantitation Limits (CRQLs)			
	1. Were sample results correctly calculated and reported by laboratory?	Yes	No	N/A
	2. Were correct internal standard quantitation ion and RRF used to quantify all compounds for all samples?	Yes	No	N/A
	3. Were CRQLs adjusted to reflect sample dilutions and dry weight factors not accounted for by the method?	Yes	No	N/A
	4. Were any laboratory QA/QC sample results calculated from peaks derived using manual integration?	Yes	No	N/A
	5. Were any qualifications required based on this information?	Yes	No	N/A

Comments/Qualifications: No raw data - level III
SB-16-01 Dilution.
Ethyb. -> ICL ok
Xylene > ICL ok

XII.	Field QC			
	1. Were any Field Duplicates associated with this SDG?	Yes	No	N/A
	a. If Yes, were RPDs acceptable (50% for water samples, 100% for soil samples)?	Yes	No	N/A
	2. Were any field blanks or equipment rinsates associated with this SDG?	Yes	No	N/A
	a. If yes, were any compounds reported in samples >IDL?	Yes	No	N/A
	b. Were any qualifications required based on this information?	Yes	No	N/A

Comments/Qualifications: SB-20-01 SB-20-019 4/1
- TB 9503 u's @1415
- all u's @1415

XIII.	Overall Assessment of Data			
	1. Are there any specific concerns or limitations regarding the data in this SDG?	Yes	No	N/A

Comments/Qualifications: