SOVEREIGN CONSULTING INC.

August 28, 2006

Commanding Officer
I&E/EMD/EQB (Attn.: Mr. Andrew Smith)
PSC Box 20004
Marine Corps Base
Camp Lejeune, North Carolina 28542-0004

Re: FINAL Soil Sampling Report, Gottschalk Marina
Former 1,000 gallon gasoline UST
Soil Sampling Event, May 2006
Marine Corps Base, Camp Lejeune, North Carolina

Dear Mr. Smith:

Sovereign Consulting Inc. (Sovereign) is pleased to submit this soil sampling report for work performed at Gottschalk Marina aboard MCB Camp Lejeune. Sovereign was authorized to perform this work by Naval Facilities Engineering Command Mid-Atlantic Marine Corps North Carolina IPT Division under Navy Contract N62470-04-D-0205, Task Order No. 0014. Soil sampling activities at the project site show soil contamination does not exist above the residential maximum soil contaminant concentrations (MSCCs). This report presents the data collected from Sovereign's May 2006 sampling event.

Background

Soil sampling was requested at the subject site as a result of a 2005 tank removal action associated with the former 1,000 gallon gasoline underground storage tank (UST). The tank was installed in 2002 and supplied gasoline to a dispenser located on the marina pier. Shaw Environmental and Infrastructure, Inc. (Shaw) removed the tank on July 27-28, 2005. Soil samples taken during tank closure were analyzed for total petroleum hydrocarbons using EPA Methods 5030 and 3550. Shaw obtained a total of nine samples from the former tank basin and along the fuel distribution line. The September 2005 tank closure report stated that the transfer lines remained in place to be used to service an aboveground storage tank to be placed in the location of the removed UST.

Only one soil sample, UST-GM-009, exhibited TPH gasoline range organics at a concentration of 10.3 mg/kg. This concentration is slightly above the 10 mg/kg action limit. As a result of the exceedence, NCDENR requested that MCB Camp Lejeune resample the location and analyze the sample using Risk Based Corrective Action (RBCA) analyses.

Field Activities and Discussion

On May 12, 2006, Sovereign resampled the UST-GM-009 soil boring location. Tables 1-4 summarize sampling data results from the May event. Sovereign personnel sampled UST-GM-009 using a stainless steel hand auger. The sample was sent under chain of custody for analysis to SGS/Paradigm Analytical Laboratories Inc. (SGS) in Wilmington, North Carolina (NC Certification Number 481). The lab tested the soil sample for volatile organic compounds (VOCs) via EPA Method 8260, semivolatiles using EPA Method 8270, and volatile and extractable petroleum hydrocarbons with the Massachusetts Department of Environmental Protection (MADEP) methods. Laboratory reports and chain of custody documentation are attached.

Two VOCs were detected in the soil sample. Benzene was detected in the soil with a concentration of 0.298 mg/kg as compared to the soil to groundwater (STGW) MSCC of 0.0056 mg/kg. The residential MSCC for benzene is 18 mg/kg. Trichlorofluoromethane was also detected in the sample at a concentration of 0.210 mg/kg. This concentration is well below both the STGW and residential MSCC values of 31 mg/kg and 4,692 mg/kg, respectively. Trichlorofluoromethane is a chlorofluorocarbon (CFC) formerly widely used in industry as part of cleaning solvents, refrigerants, and propellants. Since Building 728 is a small boat maintenance facility, the detection of solvent constituents is not unexpected.

There were no semivolatile compounds detected above laboratory quantitation limits at the site. Soil sample UST-GM-009-SS02 also exhibited MADEP constituents; however, none of the concentrations were above the STGW or residential MSCCs. The C_9-C_{18} aliphatics and C_9-C_{22} aromatics concentrations were <24 mg/kg and <23 mg/kg, respectively.

Summary and Conclusions

Sovereign resampled soil sample location UST-GM-009 and sent the sample for analysis using risk based sampling methods. Benzene, trichlorofluoromethane, and MADEP constituents were detected in the sample. The benzene concentration was above the STGW MSCC, but below the residential MSCC. All other contaminant concentrations, however, were below STGW, residential, and industrial/commercial MSCCs.

Sincerely,
Sovereign Consulting Inc.

Nicole L. Hall, P.E.
Senior Engineer

Attachments: Tables1-4, Figures, Laboratory Analytical Reports

Cc: Mr. David. T. Cleland, P.G. (NAVFAC)
Mr. Chris Murray (Sovereign)

Table 1
Analytical Method: EPA Method 8260

Sample ID	Contaminant of Concern →		Benzene	Trichlorofluoromethane	All Other Compounds
	Date Collected	Sample Depth (ft BGS)			
UST-GM-009-SS02	5/12/2006	2-3	**0.298**	**0.210**	BQL
Soil to groundwater MSCC (mg/kg)			0.0056	31	Varies
Residential MSCC (mg/kg)			18	4,692	Varies
Industrial/Commercial MSCC (mg/kg)			164	122,640	Varies

Table 2
Analytical Method: EPA Method 8270

Sample ID	Contaminant of Concern →		All Compounds
	Date Collected	Sample Depth (ft BGS)	
UST-GM-009-SS02	5/12/2006	2-3	BQL
Soil to groundwater MSCC (mg/kg)			Varies
Residential MSCC (mg/kg)			Varies
Industrial/Commercial MSCC (mg/kg)			Varies

- MSCC = maximum soil contamination concentration
- ft BGS = feet below ground surface
- All results reported in mg/kg
- mg/kg = milligrams per kilogram
- **BOLD** = detected concentration
- Quantitation limit for benzene and trichlorofluoromethane is 110 µg/kg per SGS lab report.

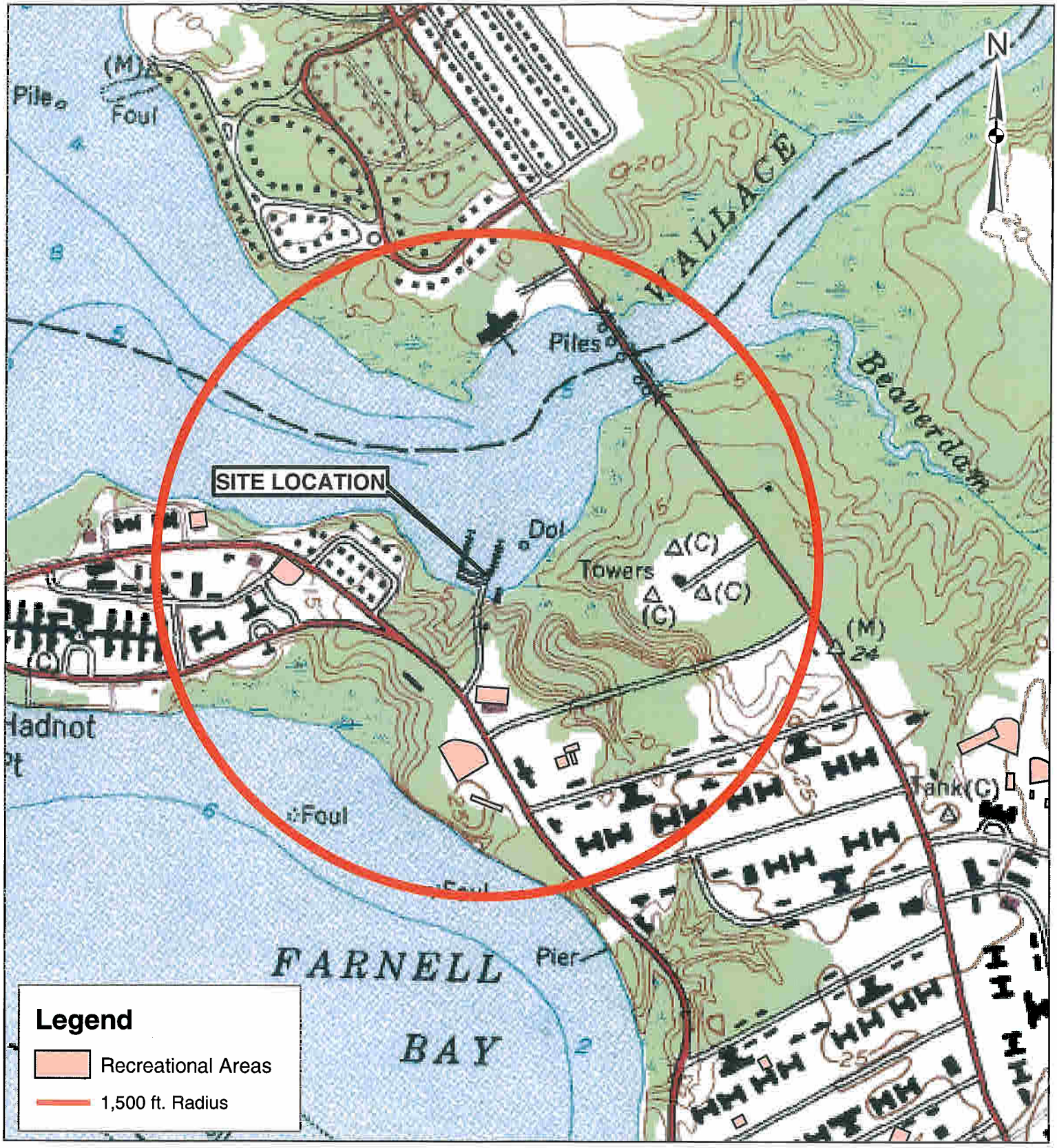
Table 3
Analytical Method: MADEP Method VPH/EPH

Sample ID	Contaminant of Concern →		C_5-C_8 Aliphatics	C_9-C_{12} Aliphatics	C_9-C_{10} Aromatics	C_9-C_{18} Aliphatics	C_{19}-C_{36} Aliphatics	C_{11}-C_{22} Aromatics
	Date Collected (mm/dd/yy)	**Sample Depth** (ft BGS)						
UST-GM-009-SS02	5/12/2006	2-3	<10	<10	<10	**14**	<10	**13**

Table 4
Analytical Method: MADEP Method VPH/EPH as Compared to NCDENR MSCCs

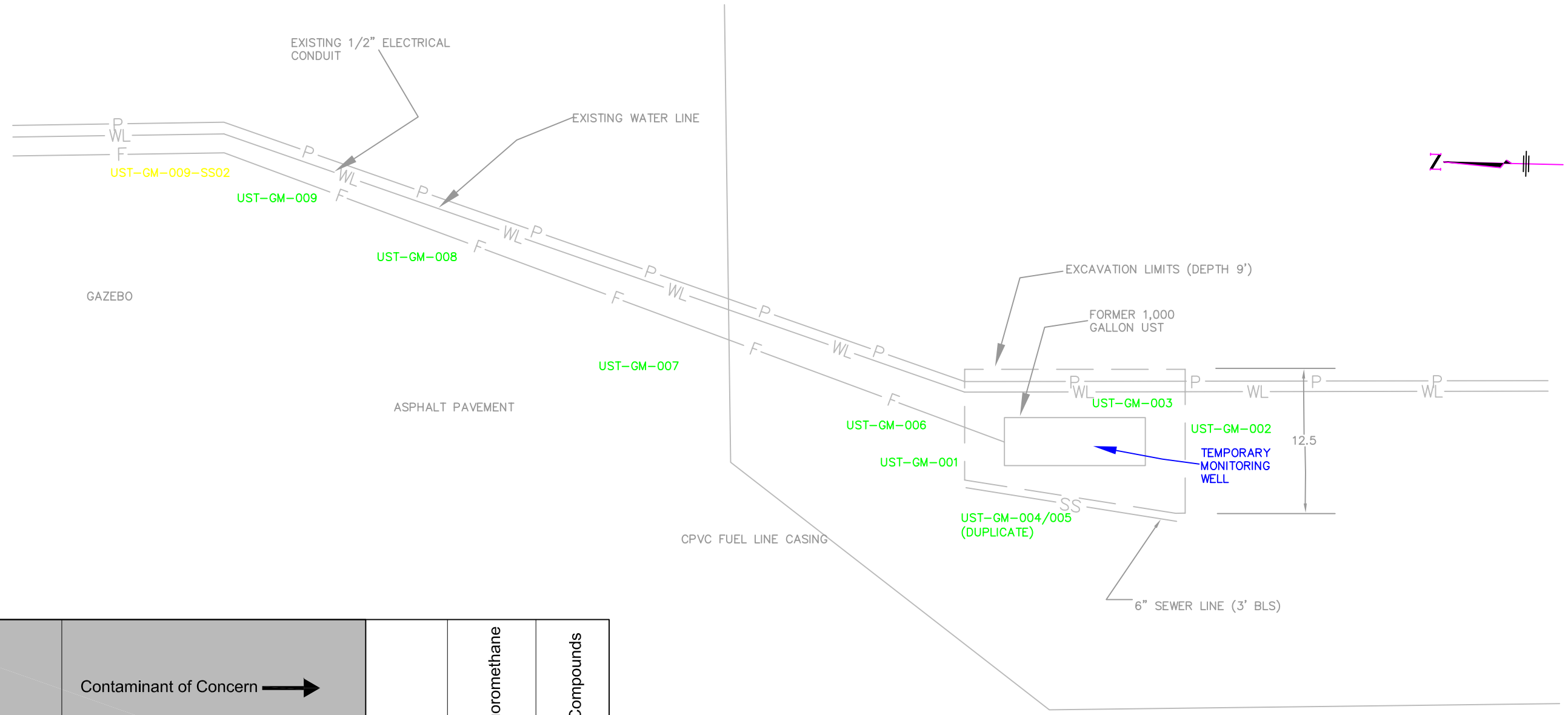
Sample ID	Contaminant of Concern →		C_5-C_8 Aliphatics	C_9-C_{18} Aliphatics	C_{19}-C_{36} Aliphatics	C_9-C_{22} Aromatics
	Date Collected (mm/dd/yy)	**Sample Depth** (ft BGS)				
UST-GM-009-SS02	5/12/2006	2-3	<10	**<24**	<10	**<23**
Soil to groundwater MSCC (mg/kg)			72	3,300	##	34
Residential MSCC (mg/kg)			939	9,386	93,860	469
Industrial/Commercial MSCC (mg/kg)			24,528	245,280	#	12,264

- MSCC = maximum soil contamination concentration
- ft BGS = feet below ground surface
- All results reported in mg/kg
- mg/kg = milligrams per kilogram
- ## = Considered immobile
- # = Health Based Level > 100%
- **BOLD** = detected concentration



From: USGS Camp LeJeune, NC. Topographic Quadrangle (Dated 1971)

SOVEREIGN CONSULTING INC. VIRGINIA BEACH, VIRGINIA	PROJECT GOTTSCHALK MARINA SOIL SAMPLING REPORT MARINE CORPS BASE CAMP LEJEUNE, N.C.	TITLE **GENERAL VICINITY TOPOGRAPHIC MAP**				**FIGURE** **1**
	JOB NO. 206-063	DATE AUG 2006	SCALE 1"=300'	DRAWN BY KAWS	CHECKED BY CWR	



Sample ID	Contaminant of Concern →		Benzene	Trichlorofluoromethane	All Other Compounds
	Date Collected	Sample Depth (ft in BGS)			
UST-GM-009-SS02	5/12/2006	2-3	**0.298**	**0.210**	BQL
Soil to groundwater MSCC (mg/kg)			0.0056	31	Varies
Residential MSCC (mg/kg)			18	4,692	Varies
Industrial/Commerical MSCC (mg/kg)			164	122,640	Varies

* MSCC - maximum soil contamination concentration
* ft BGS = feet below ground surface
* All results reported in mg/kg
* BOLD = detected concentration
* Quantitiation limit for benzene and trichlorofluoromethane is 110 ug/kg per SGS lab report.

L E G E N D

EXISTING	DESCRIPTION
	TEMPORARY TYPE II MONITORING WELL
	SOIL BORING
	NEW SOIL BORING
F	FORMER FUEL DISTRIBUTION LINE
WL	WATER LINE
SS	SANITARY SEWER
	EXCAVATION BOUNDARIES

10 5 0 10
SCALE IN FEET

NOTE:
1. MODIFIED FROM ORIGINAL BASE MAP BY TAYLOR, WISEMAN & TAYLOR, PROVIDED BY LAW ENGINEERING AND ENVIRONMENTAL SERVICES, INC.

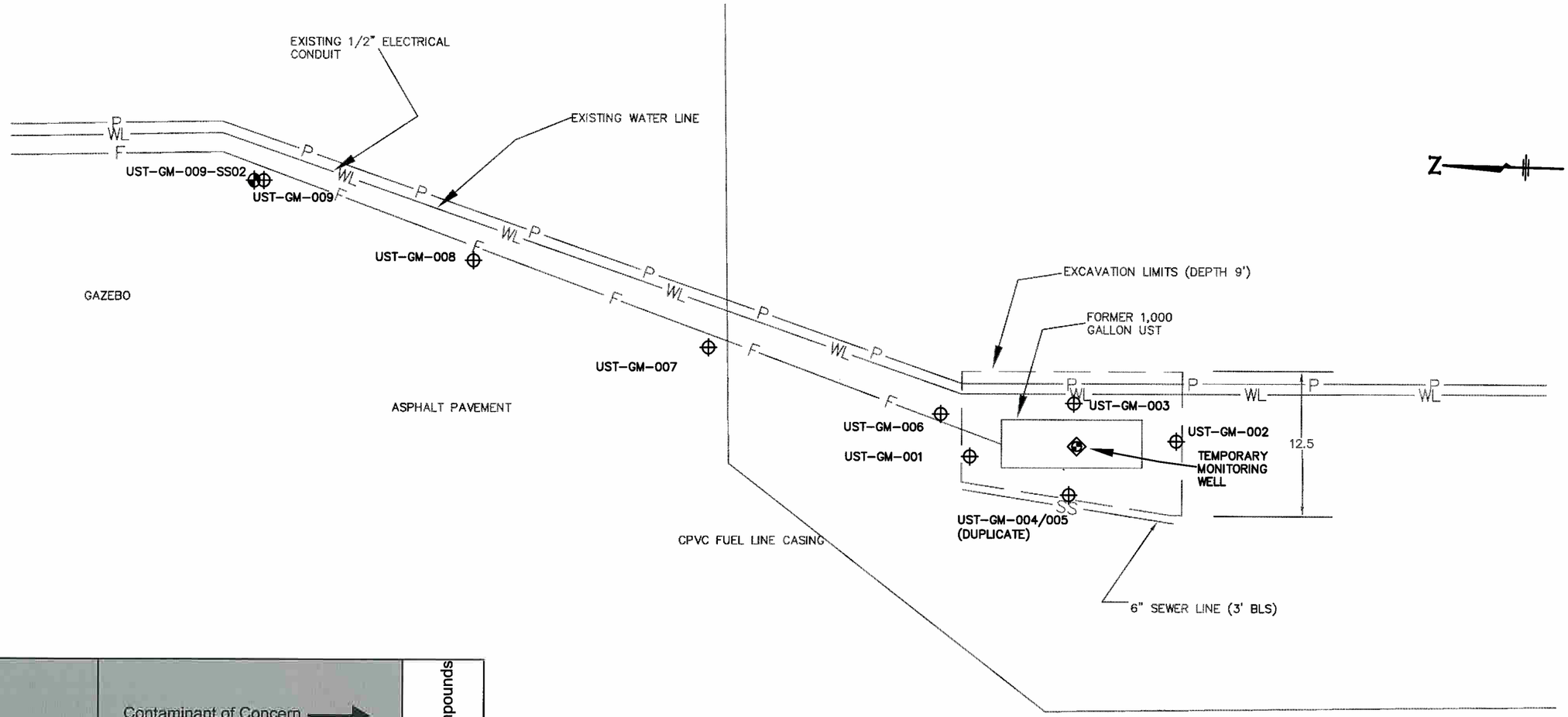
SOVEREIGN CONSULTING INC.
VIRGINIA BEACH, VIRGINIA

PROJECT: GOTTSCHALK MARINA SOIL SAMPLING REPORT MARINE CORPS BASE CAMP LEJEUNE, NC
JOB NO. 206-063 DATE: AUG 2006

TITLE: SITE MAP WITH MAY 2006 SOIL SAMPLING RESULTS – 8260
SCALE: 1"=10' DRAWN BY: KAWS CHECKED BY: JKB

FIGURE 2

206063-BLDG728-02



Sample ID	Contaminant of Concern →		All Other Compounds
	Date Collected	Sample Depth (ft in BGS)	
UST-GM-009-SS02	5/12/2006	2-3	BQL
Soil to groundwater MSCC (mg/kg)			Varies
Residential MSCC (mg/kg)			Varies
Industrial/Commerical MSCC (mg/kg)			Varies

* MSCC - maximum soil contamination concentration
* ft BGS + feet below ground surface
* All results reported in mg/kg
* BOLD = detected concentration
* Quantitiation limit for benzene and trichlorofluoromethane is 110 ug/kg per SGS lab report.

NOTE:
1. MODIFIED FROM ORIGINAL BASE MAP BY TAYLOR, WISEMAN & TAYLOR, PROVIDED BY LAW ENGINEERING AND ENVIRONMENTAL SERVICES, INC.

LEGEND

EXISTING	DESCRIPTION
⊕	TEMPORARY TYPE II MONITORING WELL
⊕	SOIL BORING
⊕	NEW SOIL BORING
F	FORMER FUEL DISTRIBUTION LINE
WL	WATER LINE
SS	SANITARY SEWER
	EXCAVATION BOUNDARIES

10 5 0 10
SCALE IN FEET

SOVEREIGN CONSULTING INC.
VIRGINIA BEACH, VIRGINIA

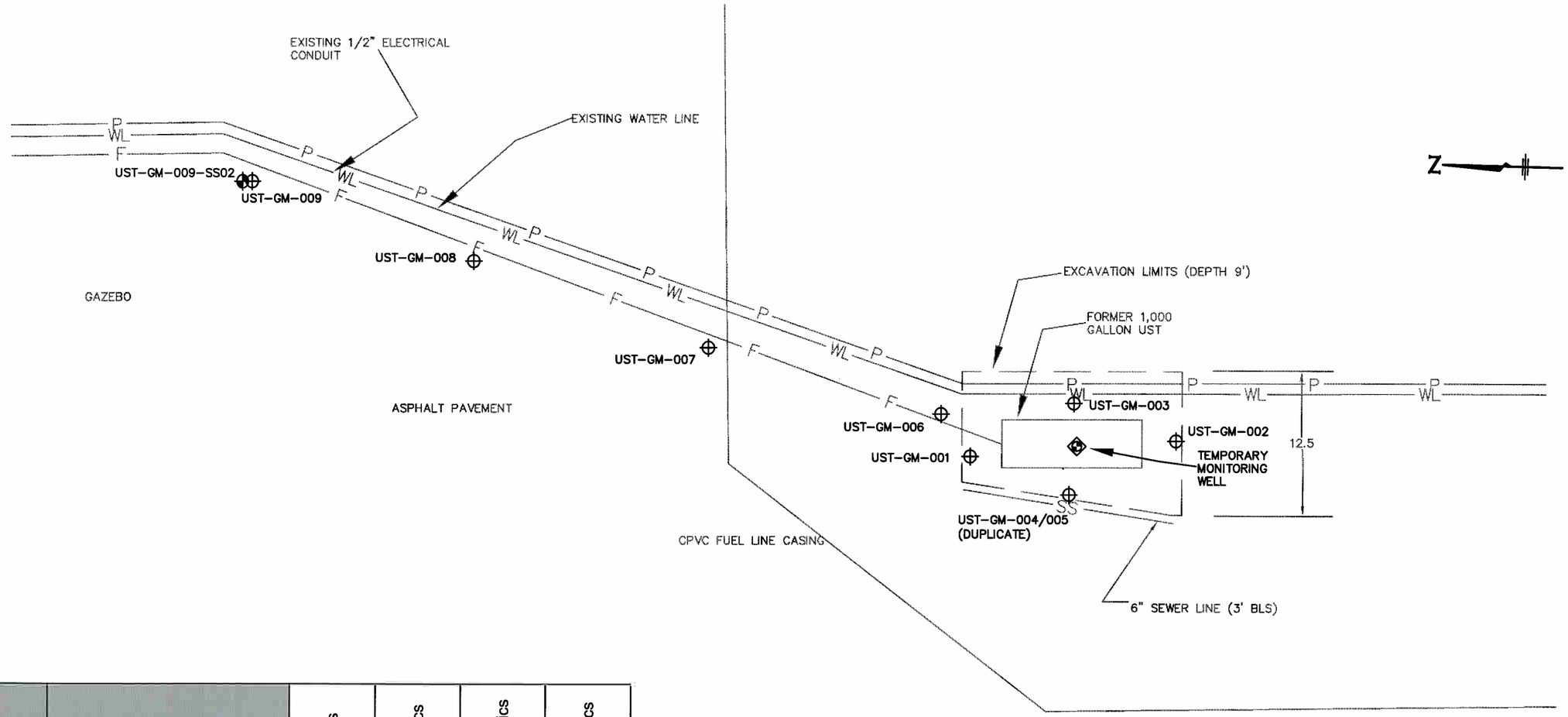
PROJECT: GOTTSCHALK MARINAS DRAFT SOIL SAMPLING REPORT MARINE CORPS BASE CAMP LEGUENE, NC

TITLE: SITE MAP WITH MAY 2006 SOIL SAMPLING RESULTS – 8270

FIGURE: 3

JOB NO. 206-063 | DATE: AUG 2006 | SCALE: 1"=10' | DRAWN BY: KAWS | CHECKED BY: JKB

206063-BLDG728-03



Sample ID	Contaminant of Concern →		C5-C 8 Aliphatics	C9-C 18 Aliphatics	C19-C 36 Aliphatics	C9-C 22 Aromatics
	Date Collected	Sample Depth (ft in BGS)				
UST-GM-009-SS02	5/12/2006	2-3 feet	<10	**<24**	<10	**<23**
Soil to groundwater MSCC (mg/kg)			72	3,300	##	34
Residential MSCC (mg/kg)			939	9,386	93,860	469
Industrial/Commerical MSCC (mg/kg)			24,528	245,280	#	12,264

* MSCC - maximum soil contamination concentration
* ft BGS + feet below ground surface
* All results reported in mg/kg
* ## = Considered immobile
* # = Health Based Level > 100%
* BOLD = detected concentration

LEGEND

EXISTING	DESCRIPTION
◈	TEMPORARY TYPE II MONITORING WELL
⊕	SOIL BORING
◆	NEW SOIL BORING
——F——	FORMER FUEL DISTRIBUTION LINE
——WL——	WATER LINE
——SS——	SANITARY SEWER
– – – – – –	EXCAVATION BOUNDARIES

10 5 0 10
SCALE IN FEET

NOTE:
1. MODIFIED FROM ORIGINAL BASE MAP BY TAYLOR, WISEMAN & TAYLOR, PROVIDED BY LAW ENGINEERING AND ENVIRONMENTAL SERVICES, INC.

SOVEREIGN CONSULTING INC.
VIRGINIA BEACH, VIRGINIA

PROJECT: GOTTSCHALK MARINAS DRAFT SOIL SAMPLING REPORT MARINE CORPS BASE CAMP LEGUENE, NC

TITLE: SITE MAP WITH MAY 2006 SOIL SAMPLING RESULTS – MADEP VPH/EPH AS COMPARED TO NCDENR MSCCs

FIGURE 4

JOB NO. 206-063 | DATE: AUG 2006 | SCALE: 1"=10' | DRAWN BY: KAWS | CHECKED BY: JKB

206063-BLDG728-04

SGS

Mr. Chris Murray
Sovereign Consulting
606 Thimble Shoals Rd.
Suite A1
Newport-News VA 23606
Report Number: G650-56

Client Project: NV014

Dear Mr. Murray:

Enclosed are the results of the analytical services performed under the referenced project. The samples are certified to meet the requirements of the National Environmental Laboratory Accreditation Conference Standards. Copies of this report and supporting data will be retained in our files for a period of five years in the event they are required for future reference. Any samples submitted to our laboratory will will be retained for a maximum of thirty (30) days from the date of this report unless other arrangements are requested.

If there are any questions about the report or the services performed during this project, please call SGS/Paradigm at (910) 350-1903. We will be happy to answer any questions or concerns which you may have.

Thank you for using SGS/Paradigm Analytical Labs for your analytical services. We look forward to working with you again on any additional analytical needs which you may have.

Sincerely,
SGS/Paradigm Analytical Laboratories, Inc.

Asst Laboratory Director — Date 6/9/06
~~J. Patrick Weaver~~
Christopher K. Cornwell

SGS

VPH (Aliphatics/Aromatics) Laboratory Reporting Form

Client Name: Sovereign Consulting

Project Name: NV014

Sample Information and Analytical Results	
Sample Identification	UST-GM-009-SS02
Sample Matrix	Soil
Collection Option (for Soil)*	2
Date Collected	05/12/06
Date Received	05/13/06
Date Extracted	05/12/06
Date Analyzed	05/20/06
Dry Weight	82
Dilution Factor	1
C_5-C_8 Aliphatics**	< 10 (mg/Kg)
C_9-C_{12} Aliphatics**	< 10 (mg/Kg)
C_9-C_{10} Aromatics**	< 10 (mg/Kg)
Surrogate % Recovery - PID	88
Surrogate % Recovery - FID	99

* = Option 1 = Established fill line on vial, Option 2 = Sampling Device/Brand, or Option 3 = Field weight of soil.

** = Excludes any surrogates or internal standards.

Lab Info: G650-56-1D

Reviewed By:

SGS

Attachment 2

VPH Laboratory Reporting Form

Calibration and QA/QC Information

FID Initial Calibration Date: 05/04/06 PID Initial Calibration Date: 05/04/06

Calibration Ranges and Limits

Range	MDL (07/15/2004) (µg/L)	ML (µg/L)	RL (µg/L)	RL (mg/Kg)
C_5-C_8 Aliphatics	4.4	14	100	10
C_9-C_{12} Aliphatics	3.4	11	100	10
C_9-C_{10} Aromatics	0.13	0.41	100	10

Calibration Concentration Levels

Range	Levels (µg/L)	%RSD or CCC	Method of Quantitation
C_5-C_8 Aliphatics	40	18.2	Calibration Factor
	1000		
	2000		
	3000		
	4000		
C_9-C_{12} Aliphatics	10	0.99	Linear Regression
	250		
	500		
	750		
	1000		
C_9-C_{10} Aromatics	10	18.50	Calibration Factor
	250		
	500		
	750		
	1000		

Calibration Check Date: 05/19/06

Calibration Check

Range	Levels (µg/L)	(mg/Kg)	RPD
C_5-C_8 Aliphatics	2000	200	4.2
C_9-C_{12} Aliphatics	500	50	2.5
C_9-C_{10} Aromatics	500	50	-3.9

MDL = Method Detection Limit
ML = Minimum Limit
RL = Reportable Limit
RPD = Relative Percent Difference
%RSD = Percent Relative Standard Deviation
CCC = Correlation Coefficient of Curve

SGS

EPH (Aliphatics/Aromatics) Results

by MDEP-EPH

Client Name: Sovereign Consulting

Project Name: NV014

Sample Information and Analytical Results	
Sample Identification	UST-GM-009-SS02
Sample Matrix	Soil
Date Collected	05/12/06
Date Received	05/13/06
Date Extracted	05/24/06
Date Analyzed	06/01/06
Dry Weight	81.7
Dilution Factor	1:1
C_9-C_{18} Aliphatics*	14 (mg/Kg)
C_{19}-C_{36} Aliphatics*	< 10 (mg/Kg)
C_{11}-C_{22} Aromatics*	13 (mg/Kg)
Aliphatic Surrogate % Recovery	77
Aromatic Surrogate % Recovery	75
Fractionation Surrogate 1 % Recovery	80

Comments:

* = Excludes any surrogates or internal standards.

Lab info: G650-56-1I

Reviewed By: BM

SGS

Attachment 3

EPH Laboratory Reporting Form

Calibration and QA/QC Information

Initial Calibration Date: 05/31/06

Calibration Ranges and Limits

Range	MDL (2/2004) (µg/L)	ML (µg/L)	RL (µg/L)	RL (mg/Kg)
C_9-C_{18} Aliphatics	3.84	12.2	100	10
C_{19}-C_{36} Aliphatics	0.57	1.8	100	10
C_{11}-C_{22} Aromatics	4.54	14.4	100	10

Calibration Concentration Levels

Range	Levels (µg/mL)	%RSD or CCC	Method of Quantitation
C_9-C_{18} Aliphatics	6	5.30	Calibration Factor
	30		
	60		
	120		
	240		
C_{19}-C_{36} Aliphatics	8	6.4	Calibration Factor
	40		
	80		
	160		
	320		
C_{11}-C_{22} Aromatics	17	10.4	Calibration Factor
	85		
	170		
	340		
	680		

Calibration Check Date: 05/31/06

Calibration Check

Range	Levels (µg/mL)	RPD
C_9-C_{18} Aliphatics	120	2.0
C_{19}-C_{36} Aliphatics	160	2.7
C_{11}-C_{22} Aromatics	340	3.4

MDL = Method Detection Limit
ML = Minimum Limit
RL = Reportable Limit
RPD = Relative Percent Difference
%RSD = Percent Relative Standard Deviation
CCC = Correlation Coefficient of Curve

SGS

Results for Semivolatiles by GCMS 8270

Client Sample ID: UST-GM-009-SS02
Client Project ID: NV014
Lab Sample ID: G650-56-1H
Lab Project ID: G650-56
Report Basis: Dry weight

Analyzed By: MRC
Date Collected: 5/12/2006 7:40
Date Received: 5/13/2006
Date Extracted: 5/18/2006
Matrix: Soil
% Solids: 81.66

Compound	Result ug/Kg	RL ug/Kg	Dilution Factor	Date Analyzed
Acenaphthene	BQL	365	1	5/27/2006
Acenaphthylene	BQL	365	1	5/27/2006
Anthracene	BQL	365	1	5/27/2006
Benzo[a]anthracene	BQL	365	1	5/27/2006
Benzo[a]pyrene	BQL	365	1	5/27/2006
Benzo[b]fluoranthene	BQL	365	1	5/27/2006
Benzo[g,h,i]perylene	BQL	365	1	5/27/2006
Benzo[k]fluoranthene	BQL	365	1	5/27/2006
Benzoic Acid	BQL	730	1	5/27/2006
Bis(2-chloroethoxy)methane	BQL	365	1	5/27/2006
Bis(2-chloroethyl)ether	BQL	365	1	5/27/2006
Bis(2-chloroisopropyl)ether	BQL	365	1	5/27/2006
Bis(2-ethylhexyl)phthalate	BQL	365	1	5/27/2006
4-bromophenyl phenyl ether	BQL	365	1	5/27/2006
Butylbenzylphthalate	BQL	365	1	5/27/2006
2-Chloronaphthalene	BQL	365	1	5/27/2006
2-Chlorophenol	BQL	365	1	5/27/2006
4-Chloro-3-methylphenol	BQL	365	1	5/27/2006
4-Chloroaniline	BQL	1830	1	5/27/2006
4-Chlorophenyl phenyl ether	BQL	365	1	5/27/2006
Chrysene	BQL	365	1	5/27/2006
Dibenzo[a,h]anthracene	BQL	365	1	5/27/2006
Dibenzofuran	BQL	365	1	5/27/2006
Di-n-Butylphthalate	BQL	365	1	5/27/2006
1,2-Dichlorobenzene	BQL	365	1	5/27/2006
1,3-Dichlorobenzene	BQL	365	1	5/27/2006
1,4-Dichlorobenzene	BQL	365	1	5/27/2006
3,3'-Dichlorobenzidine	BQL	730	1	5/27/2006
2,4-Dichlorophenol	BQL	365	1	5/27/2006
Diethylphthalate	BQL	365	1	5/27/2006
Dimethylphthalate	BQL	365	1	5/27/2006
2,4-Dimethylphenol	BQL	365	1	5/27/2006
Di-n-octylphthalate	BQL	365	1	5/27/2006
4,6-Dinitro-2-methylphenol	BQL	1830	1	5/27/2006
2,4-Dinitrophenol	BQL	1830	1	5/27/2006
2,4-Dinitrotoluene	BQL	365	1	5/27/2006
2,6-Dinitrotoluene	BQL	365	1	5/27/2006
Diphenylamine *	BQL	365	1	5/27/2006
Fluoranthene	BQL	365	1	5/27/2006
Fluorene	BQL	365	1	5/27/2006
Hexachlorobenzene	BQL	365	1	5/27/2006
Hexachlorobutadiene	BQL	365	1	5/27/2006
Hexachlorocyclopentadiene	BQL	730	1	5/27/2006
Hexachloroethane	BQL	365	1	5/27/2006

SGS

Results for Semivolatiles by GCMS 8270

Client Sample ID: UST-GM-009-SS02
Client Project ID: NV014
Lab Sample ID: G650-56-1H
Lab Project ID: G650-56
Report Basis: Dry weight

Analyzed By: MRC
Date Collected: 5/12/2006 7:40
Date Received: 5/13/2006
Date Extracted: 5/18/2006
Matrix: Soil
% Solids: 81.66

Compound	Result ug/Kg	RL ug/Kg	Dilution Factor	Date Analyzed
Indeno(1,2,3-c,d)pyrene	BQL	365	1	5/27/2006
Isophorone	BQL	365	1	5/27/2006
2-Methylnaphthalene	BQL	365	1	5/27/2006
2-Methylphenol	BQL	365	1	5/27/2006
3- & 4-Methylphenol	BQL	365	1	5/27/2006
Naphthalene	BQL	365	1	5/27/2006
2-Nitroaniline	BQL	365	1	5/27/2006
3-Nitroaniline	BQL	1830	1	5/27/2006
4-Nitroaniline	BQL	1830	1	5/27/2006
Nitrobenzene	BQL	365	1	5/27/2006
2-Nitrophenol	BQL	365	1	5/27/2006
4-Nitrophenol	BQL	1830	1	5/27/2006
N-Nitrosodi-n-propylamine	BQL	365	1	5/27/2006
Pentachlorophenol	BQL	1830	1	5/27/2006
Phenanthrene	BQL	365	1	5/27/2006
Phenol	BQL	365	1	5/27/2006
Pyrene	BQL	365	1	5/27/2006
1,2,4-Trichlorobenzene	BQL	365	1	5/27/2006
2,4,5-Trichlorophenol	BQL	365	1	5/27/2006
2,4,6-Trichlorophenol	BQL	365	1	5/27/2006

	Spike Added	Spike Result	Percent Recovered
2-Fluorobiphenyl	10	9.3	93
2-Fluorophenol	10	8.9	89
Nitrobenzene-d5	10	9.1	91
Phenol-d6	10	9.2	92
2,4,6-Tribromophenol	10	7	70
4-Terphenyl-d14	10	9.9	99

Comments:

* N-Nitrosodiphenylamine is reported as the breakdown product Diphenylamine.

Flags:

BQL = Below Quantitation Limits.

Reviewed By:

SGS

Results for Semivolatiles
by GCMS 8270

Client Sample ID: Method Blank
Client Project ID:
Lab Sample ID: PB5192
Lab Project ID:
Report Basis: Dry Weight

Analyzed By: MRC
Date Collected:
Date Received:
Date Extracted: 5/18/2006
Matrix: SOIL
% Solids: 100

Compound	Result ug/Kg	RL ug/Kg	Dilution Factor	Date Analyzed
Acenaphthene	BQL	313	1	5/23/2006
Acenaphthylene	BQL	313	1	5/23/2006
Anthracene	BQL	313	1	5/23/2006
Benzo[a]anthracene	BQL	313	1	5/23/2006
Benzo[a]pyrene	BQL	313	1	5/23/2006
Benzo[b]fluoranthene	BQL	313	1	5/23/2006
Benzo[g,h,i]perylene	BQL	313	1	5/23/2006
Benzo[k]fluoranthene	BQL	313	1	5/23/2006
Benzoic Acid	BQL	625	1	5/23/2006
Bis(2-chloroethoxy)methane	BQL	313	1	5/23/2006
Bis(2-chloroethyl)ether	BQL	313	1	5/23/2006
Bis(2-chloroisopropyl)ether	BQL	313	1	5/23/2006
Bis(2-ethylhexyl)phthalate	BQL	313	1	5/23/2006
4-bromophenyl phenyl ether	BQL	313	1	5/23/2006
Butylbenzylphthalate	BQL	313	1	5/23/2006
2-Chloronaphthalene	BQL	313	1	5/23/2006
2-Chlorophenol	BQL	313	1	5/23/2006
4-Chloro-3-methylphenol	BQL	313	1	5/23/2006
4-Chloroaniline	BQL	1560	1	5/23/2006
4-Chlorophenyl phenyl ether	BQL	313	1	5/23/2006
Chrysene	BQL	313	1	5/23/2006
Dibenzo[a,h]anthracene	BQL	313	1	5/23/2006
Dibenzofuran	BQL	313	1	5/23/2006
Di-n-Butylphthalate	BQL	313	1	5/23/2006
1,2-Dichlorobenzene	BQL	313	1	5/23/2006
1,3-Dichlorobenzene	BQL	313	1	5/23/2006
1,4-Dichlorobenzene	BQL	313	1	5/23/2006
3,3'-Dichlorobenzidine	BQL	625	1	5/23/2006
2,4-Dichlorophenol	BQL	313	1	5/23/2006
Diethylphthalate	BQL	313	1	5/23/2006
Dimethylphthalate	BQL	313	1	5/23/2006
2,4-Dimethylphenol	BQL	313	1	5/23/2006
Di-n-octylphthalate	BQL	313	1	5/23/2006
4,6-Dinitro-2-methylphenol	BQL	1560	1	5/23/2006
2,4-Dinitrophenol	BQL	1560	1	5/23/2006
2,4-Dinitrotoluene	BQL	313	1	5/23/2006
2,6-Dinitrotoluene	BQL	313	1	5/23/2006
Diphenylamine *	BQL	313	1	5/23/2006
Fluoranthene	BQL	313	1	5/23/2006
Fluorene	BQL	313	1	5/23/2006
Hexachlorobenzene	BQL	313	1	5/23/2006
Hexachlorobutadiene	BQL	313	1	5/23/2006
Hexachlorocyclopentadiene	BQL	625	1	5/23/2006
Hexachloroethane	BQL	313	1	5/23/2006

SGS

Results for Semivolatiles
by GCMS 8270

Client Sample ID: Method Blank
Client Project ID:
Lab Sample ID: PB5192
Lab Project ID:
Report Basis: Dry Weight

Analyzed By: MRC
Date Collected:
Date Received:
Date Extracted: 5/18/2006
Matrix: SOIL
% Solids: 100

Compound	Result ug/Kg	RL ug/Kg	Dilution Factor	Date Analyzed
Indeno(1,2,3-c,d)pyrene	BQL	313	1	5/23/2006
Isophorone	BQL	313	1	5/23/2006
2-Methylnaphthalene	BQL	313	1	5/23/2006
2-Methylphenol	BQL	313	1	5/23/2006
3- & 4-Methylphenol	BQL	313	1	5/23/2006
Naphthalene	BQL	313	1	5/23/2006
2-Nitroaniline	BQL	313	1	5/23/2006
3-Nitroaniline	BQL	1560	1	5/23/2006
4-Nitroaniline	BQL	1560	1	5/23/2006
Nitrobenzene	BQL	313	1	5/23/2006
2-Nitrophenol	BQL	313	1	5/23/2006
4-Nitrophenol	BQL	1560	1	5/23/2006
N-Nitrosodi-n-propylamine	BQL	313	1	5/23/2006
Pentachlorophenol	BQL	1560	1	5/23/2006
Phenanthrene	BQL	313	1	5/23/2006
Phenol	BQL	313	1	5/23/2006
Pyrene	BQL	313	1	5/23/2006
1,2,4-Trichlorobenzene	BQL	313	1	5/23/2006
2,4,5-Trichlorophenol	BQL	313	1	5/23/2006
2,4,6-Trichlorophenol	BQL	313	1	5/23/2006

	Spike Added	Spike Result	Percent Recovered
2-Fluorobiphenyl	10	8.8	88
2-Fluorophenol	10	7.6	76
Nitrobenzene-d5	10	8.7	87
Phenol-d6	10	8.2	82
2,4,6-Tribromophenol	10	7.7	77
4-Terphenyl-d14	10	8.8	88

Comments:
* N-Nitrosodiphenylamine is reported as the breakdown product Diphenylamine.
Prep Blank was re-extracted due to a mechanical failure during the initial extraction process.

Flags:
BQL = Below Quantitation Limits.

Reviewed By:

SGS

Results For Matrix Spike / Matrix Spike Duplicate and Laboratory Control Standard (MS/MSD/LCS)
by GCMS

Client Sample ID: Batch QC
Client Project ID:
Lab Sample ID: Batch-5192-MS/MSD/LCS
Lab Project ID:
Matrix: SOIL
Prep Method: 3540

Date Collected:
Date Received:
Date Extracted: 05/18/06
Date Analyzed: 05/23/06
Analyzed By: MRC
Dilution: 1

	Sample Amount (µg/kg)	MS Spike (µg/kg)	MS Conc. (µg/kg)	MS Spike % Rec.	MSD Spike (µg/kg)	MSD Conc. (µg/kg)	MSD Conc. % Rec.	RPD	QC Limits RPD	QC Limits % Rec.
Acenaphthylene	BQL	12000	11600	97.0	11700	10300	88.0	9.73	30	73.0-140
4-Chloro-3-methylphenol	BQL	12000	12200	102	11700	10500	89.7	12.4	30	80.0-115
2-Chlorophenol	BQL	12000	10500	87.6	11700	9250	79.2	10.1	30	77.1-111
1,4-Dichlorobenzene	BQL	12000	10200	85.2	11700	8800	75.3	12.3	30	70.6-117
2,4-Dinitrotoluene	BQL	12000	11400	94.8	11700	9830	84.1	12.0	30	67.6-136
N-Nitrosodi-n-propylamine	BQL	12000	11800	98.4	11700	10200	87.4	11.8	30	74.3-133
4-Nitrophenol	BQL	12000	10600	88.7	11700	8030	68.7	25.4	30	56.8-133
Pentachlorophenol	BQL	12000	4830	40.2	11700	3620	31.0	25.8	30	29.2-108
Phenol	BQL	12000	11500	96.2	11700	10200	87.7	9.24	30	71.2-120
Pyrene	BQL	12000	11700	97.3	11700	10300	88.5	9.54	30	68.5-140
1,2,4-Trichlorobenzene	BQL	12000	11400	94.9	11700	9830	84.1	12.1	30	68.9-119

	Spiked Amount (µg/kg)	LCS Conc. (µg/kg)	LCS Spike %	QC Limits % Rec.
Acenaphthylene	3125	3440	110	80.9-143
4-Chloro-3-methylphenol	3125	3520	113	83.9-124
2-Chlorophenol	3125	2900	92.7	80.3-119
1,4-Dichlorobenzene	3125	3140	101	76.3-118
2,4-Dinitrotoluene	3125	3430	110	80.6-126
N-Nitrosodi-n-propylamine	3125	3600	115	80.3-131
4-Nitrophenol	3125	2900	92.9	60.0-145
Pentachlorophenol	3125	1530	48.9	36.4-114
Phenol	3125	3080	98.5	74.3-117
Pyrene	3125	3550	114	74.7-141
1,2,4-Trichlorobenzene	3125	3480	111	74.1-120

Comments:

Concentrations reflect the spiked sample amounts.

Flags:

* = Out of limits.
NA = Not applicable.

Reviewed By:

SGS

Results for Volatiles
by GCMS 8260B/5035

Client Sample ID: UST-GM-009-SS02
Client Project ID: NV014
Lab Sample ID: G650-56-1E
Lab Project ID: G650-56
Report Basis: Dry Weight

Analyzed By: MJC
Date Collected: 5/12/2006 7:40
Date Received: 5/13/2006
Matrix: Soil
%Solids: 81.7

Compound	Result UG/KG	Quantitation Limit UG/KG	Dilution Factor	Date Analyzed
Acetone	BQL	2750	100	5/25/2006
Benzene	**298**	110	100	5/25/2006
Bromobenzene	BQL	110	100	5/25/2006
Bromochloromethane	BQL	110	100	5/25/2006
Bromodichloromethane	BQL	110	100	5/25/2006
Bromoform	BQL	110	100	5/25/2006
Bromomethane	BQL	110	100	5/25/2006
2-Butanone	BQL	2750	100	5/25/2006
n-Butylbenzene	BQL	110	100	5/25/2006
sec-Butylbenzene	BQL	110	100	5/25/2006
tert-Butylbenzene	BQL	110	100	5/25/2006
Carbon disulfide	BQL	110	100	5/25/2006
Carbon tetrachloride	BQL	110	100	5/25/2006
Chlorobenzene	BQL	110	100	5/25/2006
Chloroethane	BQL	110	100	5/25/2006
Chloroform	BQL	110	100	5/25/2006
Chloromethane	BQL	110	100	5/25/2006
2-Chlorotoluene	BQL	110	100	5/25/2006
4-Chlorotoluene	BQL	110	100	5/25/2006
Dibromochloromethane	BQL	110	100	5/25/2006
1,2-Dibromo-3-chloropropane	BQL	551	100	5/25/2006
Dibromomethane	BQL	110	100	5/25/2006
1,2-Dibromoethane (EDB)	BQL	110	100	5/25/2006
1,2-Dichlorobenzene	BQL	110	100	5/25/2006
1,3-Dichlorobenzene	BQL	110	100	5/25/2006
1,4-Dichlorobenzene	BQL	110	100	5/25/2006
trans-1,4-Dichloro-2-butene	BQL	551	100	5/25/2006
1,1-Dichloroethane	BQL	110	100	5/25/2006
1,1-Dichloroethene	BQL	110	100	5/25/2006
1,2-Dichloroethane	BQL	110	100	5/25/2006
cis-1,2-Dichloroethene	BQL	110	100	5/25/2006
trans-1,2-dichloroethene	BQL	110	100	5/25/2006
1,2-Dichloropropane	BQL	110	100	5/25/2006
1,3-Dichloropropane	BQL	110	100	5/25/2006
2,2-Dichloropropane	BQL	110	100	5/25/2006
1,1-Dichloropropene	BQL	110	100	5/25/2006
cis-1,3-Dichloropropene	BQL	110	100	5/25/2006
trans-1,3-Dichloropropene	BQL	110	100	5/25/2006
Dichlorodifluoromethane	BQL	551	100	5/25/2006
Diisopropyl ether (DIPE)	BQL	110	100	5/25/2006
Ethylbenzene	BQL	110	100	5/25/2006
Hexachlorobutadiene	BQL	110	100	5/25/2006

SGS

Results for Volatiles
by GCMS 8260B/5035

Client Sample ID: UST-GM-009-SS02
Client Project ID: NV014
Lab Sample ID: G650-56-1E
Lab Project ID: G650-56
Report Basis: Dry Weight

Analyzed By: MJC
Date Collected: 5/12/2006 7:40
Date Received: 5/13/2006
Matrix: Soil
%Solids: 81.7

Compound	Result UG/KG	Quantitation Limit UG/KG	Dilution Factor	Date Analyzed
2-Hexanone	BQL	551	100	5/25/2006
Iodomethane	BQL	110	100	5/25/2006
Isopropylbenzene	BQL	110	100	5/25/2006
4-Isopropyltoluene	BQL	110	100	5/25/2006
Methylene chloride	BQL	551	100	5/25/2006
4-Methyl-2-pentanone	BQL	551	100	5/25/2006
Methyl-tert-butyl ether (MTBE)	BQL	110	100	5/25/2006
Naphthalene	BQL	110	100	5/25/2006
n-Propyl benzene	BQL	110	100	5/25/2006
Styrene	BQL	110	100	5/25/2006
1,1,1,2-Tetrachloroethane	BQL	110	100	5/25/2006
1,1,2,2-Tetrachloroethane	BQL	110	100	5/25/2006
Tetrachloroethene	BQL	110	100	5/25/2006
Toluene	BQL	110	100	5/25/2006
1,2,3-Trichlorobenzene	BQL	110	100	5/25/2006
1,2,4-Trichlorobenzene	BQL	110	100	5/25/2006
Trichloroethene	BQL	110	100	5/25/2006
1,1,1-Trichloroethane	BQL	110	100	5/25/2006
1,1,2-Trichloroethane	BQL	110	100	5/25/2006
Trichlorofluoromethane	210	110	100	5/25/2006
1,2,3-Trichloropropane	BQL	110	100	5/25/2006
1,2,4-Trimethylbenzene	BQL	110	100	5/25/2006
1,3,5-Trimethylbenzene	BQL	110	100	5/25/2006
Vinyl chloride	BQL	110	100	5/25/2006
m-,p-Xylene	BQL	220	100	5/25/2006
o-Xylene	BQL	110	100	5/25/2006

	Spike Added	Spike Result	Percent Recovered
4-Bromofluorobenzene	10	10.1	101
1,2-Dichloroethane-d4	10	10.6	106
Toluene-d8	10	10.4	104

Comments:

Flags:
BQL = Below Quantitation Limits.

Reviewed By:

SGS

Results for Volatiles
by GCMS 8260B/5035

Client Sample ID: Method Blank
Client Project ID:
Lab Sample ID: VBLK1052406B
Lab Project ID:
Report Basis: Dry Weight

Analyzed By: MJC
Date Collected:
Date Received:
Matrix: Soil
%Solids: 100.0

Compound	Result UG/KG	Quantitation Limit UG/KG	Dilution Factor	Date Analyzed
Acetone	BQL	1250	50	5/24/2006
Benzene	BQL	50.0	50	5/24/2006
Bromobenzene	BQL	50.0	50	5/24/2006
Bromochloromethane	BQL	50.0	50	5/24/2006
Bromodichloromethane	BQL	50.0	50	5/24/2006
Bromoform	BQL	50.0	50	5/24/2006
Bromomethane	BQL	50.0	50	5/24/2006
2-Butanone	BQL	1250	50	5/24/2006
n-Butylbenzene	BQL	50.0	50	5/24/2006
sec-Butylbenzene	BQL	50.0	50	5/24/2006
tert-Butylbenzene	BQL	50.0	50	5/24/2006
Carbon disulfide	BQL	50.0	50	5/24/2006
Carbon tetrachloride	BQL	50.0	50	5/24/2006
Chlorobenzene	BQL	50.0	50	5/24/2006
Chloroethane	BQL	50.0	50	5/24/2006
Chloroform	BQL	50.0	50	5/24/2006
Chloromethane	BQL	50.0	50	5/24/2006
2-Chlorotoluene	BQL	50.0	50	5/24/2006
4-Chlorotoluene	BQL	50.0	50	5/24/2006
Dibromochloromethane	BQL	50.0	50	5/24/2006
1,2-Dibromo-3-chloropropane	BQL	250	50	5/24/2006
Dibromomethane	BQL	50.0	50	5/24/2006
1,2-Dibromoethane (EDB)	BQL	50.0	50	5/24/2006
1,2-Dichlorobenzene	BQL	50.0	50	5/24/2006
1,3-Dichlorobenzene	BQL	50.0	50	5/24/2006
1,4-Dichlorobenzene	BQL	50.0	50	5/24/2006
trans-1,4-Dichloro-2-butene	BQL	250	50	5/24/2006
1,1-Dichloroethane	BQL	50.0	50	5/24/2006
1,1-Dichloroethene	BQL	50.0	50	5/24/2006
1,2-Dichloroethane	BQL	50.0	50	5/24/2006
cis-1,2-Dichloroethene	BQL	50.0	50	5/24/2006
trans-1,2-dichloroethene	BQL	50.0	50	5/24/2006
1,2-Dichloropropane	BQL	50.0	50	5/24/2006
1,3-Dichloropropane	BQL	50.0	50	5/24/2006
2,2-Dichloropropane	BQL	50.0	50	5/24/2006
1,1-Dichloropropene	BQL	50.0	50	5/24/2006
cis-1,3-Dichloropropene	BQL	50.0	50	5/24/2006
trans-1,3-Dichloropropene	BQL	50.0	50	5/24/2006
Dichlorodifluoromethane	BQL	250	50	5/24/2006
Diisopropyl ether (DIPE)	BQL	50.0	50	5/24/2006
Ethylbenzene	BQL	50.0	50	5/24/2006
Hexachlorobutadiene	BQL	50.0	50	5/24/2006

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Results for Volatiles
by GCMS 8260B/5035

Client Sample ID: Method Blank
Client Project ID:
Lab Sample ID: VBLK1052406B
Lab Project ID:
Report Basis: Dry Weight

Analyzed By: MJC
Date Collected:
Date Received:
Matrix: Soil
%Solids: 100.0

Compound	Result UG/KG	Quantitation Limit UG/KG	Dilution Factor	Date Analyzed
2-Hexanone	BQL	250	50	5/24/2006
Iodomethane	BQL	50.0	50	5/24/2006
Isopropylbenzene	BQL	50.0	50	5/24/2006
4-Isopropyltoluene	BQL	50.0	50	5/24/2006
Methylene chloride	BQL	250	50	5/24/2006
4-Methyl-2-pentanone	BQL	250	50	5/24/2006
Methyl-tert-butyl ether (MTBE)	BQL	50.0	50	5/24/2006
Naphthalene	BQL	50.0	50	5/24/2006
n-Propyl benzene	BQL	50.0	50	5/24/2006
Styrene	BQL	50.0	50	5/24/2006
1,1,1,2-Tetrachloroethane	BQL	50.0	50	5/24/2006
1,1,2,2-Tetrachloroethane	BQL	50.0	50	5/24/2006
Tetrachloroethene	BQL	50.0	50	5/24/2006
Toluene	BQL	50.0	50	5/24/2006
1,2,3-Trichlorobenzene	BQL	50.0	50	5/24/2006
1,2,4-Trichlorobenzene	BQL	50.0	50	5/24/2006
Trichloroethene	BQL	50.0	50	5/24/2006
1,1,1-Trichloroethane	BQL	50.0	50	5/24/2006
1,1,2-Trichloroethane	BQL	50.0	50	5/24/2006
Trichlorofluoromethane	BQL	50.0	50	5/24/2006
1,2,3-Trichloropropane	BQL	50.0	50	5/24/2006
1,2,4-Trimethylbenzene	BQL	50.0	50	5/24/2006
1,3,5-Trimethylbenzene	BQL	50.0	50	5/24/2006
Vinyl chloride	BQL	50.0	50	5/24/2006
m-,p-Xylene	BQL	100	50	5/24/2006
o-Xylene	BQL	50.0	50	5/24/2006

	Spike Added	Spike Result	Percent Recovered
4-Bromofluorobenzene	10	10	100
1,2-Dichloroethane-d4	10	9.58	96
Toluene-d8	10	10.1	101

Comments:

Flags:
BQL = Below Quantitation Limits.

Reviewed By:

SGS

Results for Laboratory Control Spike (LCS)
by GC/MS

Lab Sample ID: lcs1052406a
Analyst: MJC
Batch ID: 1052406

Date Analyzed: 24 May 2006 9:09 am
Matrix: Water

Compound	Spiked ug/L	Amount recovered	LCS (%)	Limits Lower (%)	Limits Upper (%)
benzene	5.0	5.26	105.2	77.4	123
chlorobenzene	5.0	5.22	104.4	72.5	128
1,1-dichloroethene	5.0	5.22	104.3	71.7	128
toluene	5.0	5.59	111.8	75.9	124
trichloroethene	5.0	5.56	111.2	77.9	122

Comments:
Concentration values are on column amount.

Flags:
* = Out of limits.
NA = Not applicable

Reviewed By:

VO42.072303.1

SGS

Results for MS/MSD
by GC/MS

Client Project ID: Batch QC
Lab Sample ID: g130-98-47b x50
Batch ID: 1052406

Date Analyzed: 24 May 2006 6:41 pm
Matrix: water
Analyzed By: MJC

Compound	Unspiked Sample ug/L	Spike conc. ug/L	Recovered MS %	Recovered MSD %	Limits Lower %	Limits Upper %	RPD %	RPD Limit %
benzene	BQL	5	107.4	103.5	61.6	135	3.7	30
chlorobenzene	BQL	5	108.5	102.2	77.2	118	6.0	30
1,1-dichloroethene	BQL	5	111.2	110.9	64.4	130	0.3	30
toluene	BQL	5	112.7	109.0	66.4	128	3.4	30
trichloroethene	9.1	5	92.0	90.2	84.9	136	1.9	30

Comments:

Concentrations are on column amounts.
Concentration Units: ug/L

Flags:

* = Out of limits.
NA = Not applicable
BQL = Below quantitation limit.

Reviewed By: 

VO43.072303.1

SGS

List of Reporting Abbreviations and Data Qualifiers

B = Compound also detected in batch blank

BQL = Below Quantitation Limit (RL or MDL)

DF = Dilution Factor

Dup = Duplicate

D = Detected, but RPD is > 40% between results in dual column method.

E = Estimated concentration, exceeds calibration range.

J = Estimated concentration, below calibration range and above MDL

LCS(D) = Laboratory Control Spike (Duplicate)

MDL = Method Detection Limit

MS(D) = Matrix Spike (Duplicate)

PQL = Practical Quantitation Limit

RL = Reporting Limit

RPD = Relative Percent Difference

mg/kg = milligram per kilogram, ppm, parts per million

ug/kg = micrograms per kilogram, ppb, parts per billion

mg/L = milligram per liter, ppm, parts per million

ug/L = micrograms per liter, ppb, parts per billion

% Rec = Percent Recovery

% soilds = Percent Solids

Special Notes:

1) Metals and mercury samples are digested with a hot block, see the standard operating procedure document for details.

2) Uncertainty for all reported data is less than or equal to 30 percent.

MI34.030606.3

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054717

(1) CLIENT: Sovereign Consulting Inc

CONTACT: Chris Murray PHONE NO: (757) 779-8982

PROJECT: NVD14 SITE/PWSID#: GM (Gottschalk Marina)

REPORTS TO: Chris Murray FAX NO.: (757) 594-9227

INVOICE TO: 606 Thimble Shoals Blvd Ste A-1 Newport News, VA 23606 QUOTE # P.O. NUMBER

SGS Reference: G650-56 PAGE 1 OF 1

Preservatives Used: Sodium Bisulfate / Methanol / Non

(3) Analysis Required: 8260 / VPH / 8270/EPH

(2) LAB NO.	SAMPLE IDENTIFICATION	DATE	TIME	MATRIX	No CONTAINERS	SAMPLE TYPE C= COMP G= GRAB	8260	VPH	8270/EPH								REMARKS
	~~UST-GM009-SS02~~	5/12/06	0740	S			x	x	x								
	UST-GM-009-SS02																

(5)

	Date	Time	Received By:
Collected/Relinquished By: (1) [signature]	5/12/06		Received By:
Relinquished By: (2)	5/13/06	1100	Received By: [signature]
Relinquished By: (3)	Date	Time	Received By:
Relinquished By: (4)	Date	Time	Received By:

(4) Shipping Carrier:

Shipping Ticket No:

Special Deliverable Requirements:

Samples Received Cold? (Circle) YES (circled) NO

Temperature °C: 5.7°C

Chain of Custody Seal: (Circle) INTACT BROKEN ABSENT (circled)

Requested Turnaround Time and Special Instructions:
Standard Turnaround (within 10 days)
Email results to: EDD Format
cmurray@sovcon.com + nhall@sovcon.com