CATLIN
Engineers and Scientists

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www.catlinusa.com

February 5, 2010

NAVFAC Mid-Atlantic
Marine Corps North Carolina IPT
Environmental Business Line
Code: OPNCEV
Attn: Mr. Dave Borton, PG
6506 Hampton Blvd.
Bldg. C, Room 314
Norfolk, VA 23508-1278

Re: ***FINAL Initial Abatement Action Addendum Report***
TT-2103
Tarawa Terrace
Marine Corps Base
Camp Lejeune, North Carolina
Navy Contract No. N62470-05-D-6200
Delivery Order No. 0074
CATLIN Project No. 209112.03

Dear Mr. Borton:

CATLIN Engineers and Scientists (CATLIN) presents the following information as an *Initial Abatement Action Addendum* for the previously submitted (January 6, 2010) TT-2103 *Initial Abatement Action Report* (IAA Report). The TT-2103 site location is presented on the attached Site Vicinity Map (Figure 1). The activities and data described and provided herein are supplied to supplement the IAA Report and request No Further Action Status. This report is also intended to address the comments provided by the Underground Storage Tank (UST) Section of the North Carolina Department of Environment and Natural Resources (NCDENR) - Division of Waste Management (DWM) in a letter dated January 7, 2010.

Revised UST Closure Activities

The January 6, 2010 IAA Report stated that no groundwater was encountered during UST closure activities. Upon submittal of the IAA Report, the closure contractor TMS Envirocon, Inc. (TMS) informed CATLIN that the UST closure activities had encountered groundwater. Therefore, the installation of a monitoring well was required per the *Guidelines for Site Checks, Tank Closure and Initial Response and Abatement for UST Releases,* dated March 1, 2007 Version by the UST Section of the NCDENR - DWM. Therefore, a monitoring well was installed and sampled as discussed below.

Groundwater Investigation

A qualified driller registered in the State of North Carolina and a project level geologist installed the boring for temporary monitoring well construction. The temporary well TT2103-TW01 was designed and constructed in accordance with accepted standards and practices. The well was installed, sampled and abandoned under applicable licensing and documentation requirements.

Well Installation

CATLIN personnel and equipment mobilized to the site on January 13, 2010. Boring advancement for temporary well installation was conducted at the site by using conventional drilling techniques by a CME 45B ATV drill rig. This monitoring well was installed by a North Carolina Licensed Well Contractor. Soil samples were continuously collected and visually classified utilizing the Unified Soil Classification System (USCS). After classifying soil samples, the cuttings were containerized in a Department of Transportation (DOT) approved 55-gallon drum.

Following TT2103-TW01 boring termination at 13 feet BLS, a 10 foot long piece of one-inch diameter Poly Vinyl Chloride (PVC) well screen (0.010-inch slot) was placed in the borehole with a five foot long piece of one-inch diameter PVC riser extending approximately 2.0 feet above the ground surface. The annular space was filled with medium sand pack from the bottom of the well to approximately one foot above the well screen and then bentonite chips to within one foot of the ground surface. The bentonite chips were poured from the surface while simultaneously pouring water to facilitate hydration. The depth to groundwater (DTW) immediately following well construction was noted in the field at approximately eight (8) feet BLS.

Groundwater Sampling

The DTW was gauged before groundwater sampling activities on January 18, 2010 and measured at 7.58 feet below the top of casing (approximately 5.58 feet BLS) Following DTW gauging, approximately five (5) gallons of purge water were removed from the well utilizing new polyethylene tubing and a low-flow peristaltic pump. Purge water was containerized in a DOT approved 55-gallon drum. A groundwater sample was then pumped directly into the new, appropriately labeled glassware provided by the laboratory and placed on ice in an insulated cooler. The groundwater sample was transported to SGS North America, Inc (SGS, NC Certification #481) and submitted for Risk-Based analysis per Environmental Protection Agency (EPA) Methods 602 and 625 and Massachusetts Department of Environmental Protection (MADEP) EPH/VPH following chain-of-custody protocol (see attached SGS laboratory report).

Upon collection of the groundwater sample, the well materials were removed from the borehole and then bentonite chips and water were poured into the borehole simultaneously to facilitate bentonite hydration. The well construction and

abandonment information is provided on the attached Well Construction Record and Well Abandonment Record that were submitted along with a letter dated January 27, 2010 to the NCDENR. The temporary well and groundwater sample location is illustrated on Figure 2.

Laboratory Results

The complete laboratory analytical reports are attached and summarized results are provided on Tables 1 and 2. All laboratory results were below the laboratory quantitation limits for all analyses which are also below the current (January 2010) NCAC T15A:02L Groundwater Quality Standard (2L GWQS).

Conclusions And Recommendations

As reported in the referenced IAA Report, sidewall soil samples from the UST Closure excavation did not reveal any Risk-Based contaminants of concern above the lowest corresponding Maximum Soil Contaminant Concentrations (MSCCs). Laboratory analysis of a soil sample collected beneath the removed tank only revealed minor diesel impacts and no Risk-Based contaminants of concern above the lowest corresponding MSCCs except the C11-C22 Aromatic hydrocarbon concentration of 180 milligrams per kilograms (mg/kg) revealed in the TT-2103-B-9.5 soil sample. However, the TT-2103-B-9.5 sample was collected from saturated soils beneath the water table and is not considered indicative of vadose zone soils.

As previously stated, groundwater laboratory analytical data did not reveal any groundwater contamination above the laboratory quantitation limits.

Based on the supplemental information presented within this report and the previously submitted IAA Report, No Further Action and Site Closure is requested for the former UST TT-2103 site.

CATLIN Engineers and Scientists appreciate the opportunity to continue to provide services to NAVFAC Mid-Atlantic and the MCB on your environmental projects.

Sincerely,

Michael E. Mason, P.E.
Program Manager

Jeffery K. Becken, P.E.
Project Manager

NORTH CAROLINA PROFESSIONAL SEAL 027952 ENGINEER JEFFERY K. BECKEN

cc: Commanding Officer, Attn: Director I&E/EMD/EQB (one copy)
Ms. Susan Tsimpinos, NAVFAC Mid-Atlantic – Contract Specialist (correspondence only)

ATTACHMENTS

TABLES

TABLE 1
SUMMARY OF GROUNDWATER LABORATORY RESULTS
EPA METHODS 602 AND 625

Incident Name and No.: TT-2103 - Pending

Well ID	Analytical Method →			
	Contaminant of Concern →		All EPA Method 602 Compounds*	All EPA Method 625 Compounds*
	Date Collected	Sample ID		
TT2103-TW01	1/18/2010	TT2103-TW01	BMDL	BMDL
GCL (ug/L)			Varies	Varies
2L GWQS (ug/L)			Varies	Varies

All results in micrograms per liter (ug/L).

Gross Contaminant Levels (GCL) and NCAC T15A:02L Groundwater Quality Standards (2L GWQS) effective January 2010.

BMDL = Below Method Detection Limit

* = Refer to analytical report for a complete list of compounds and MDLs.

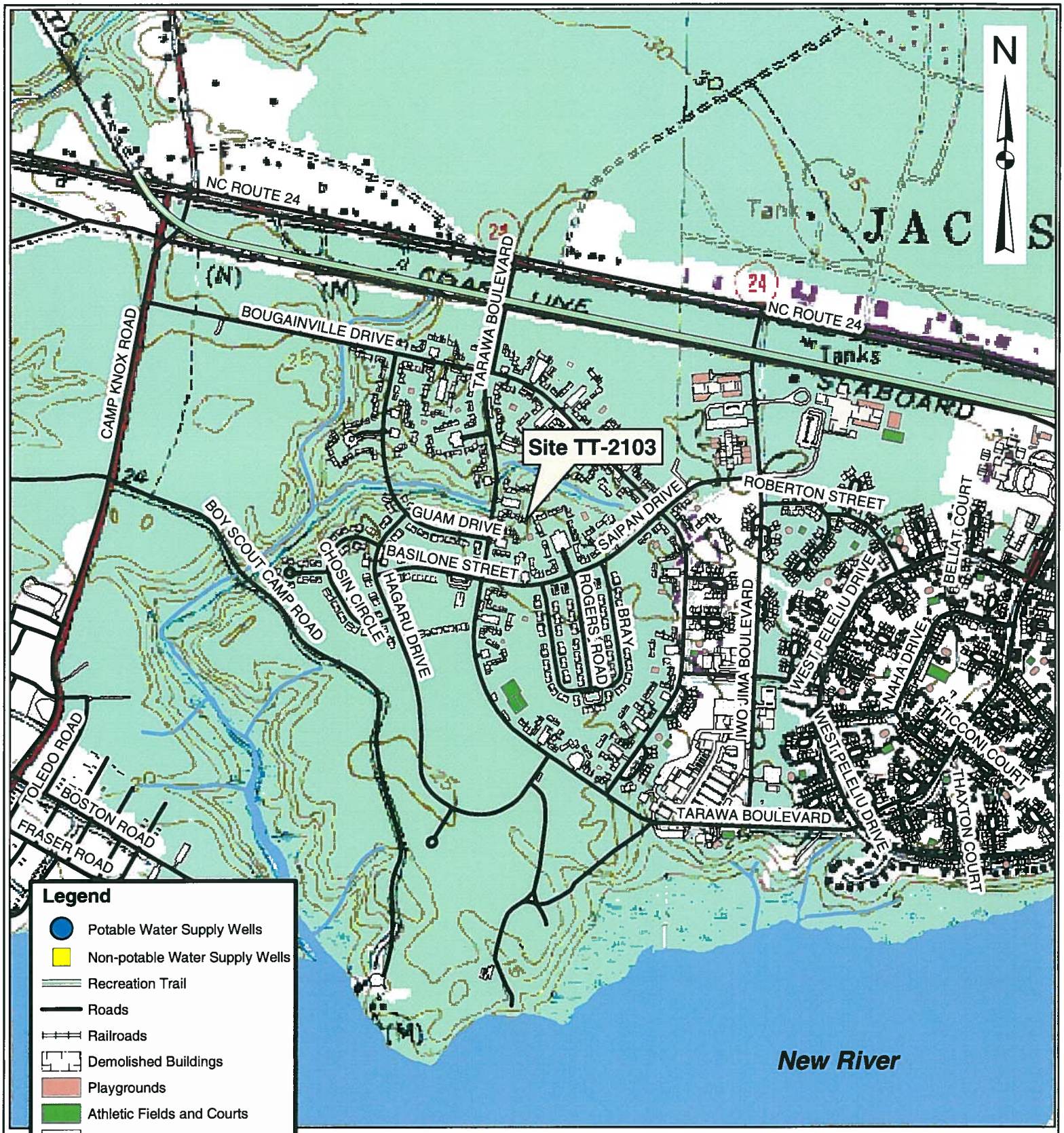
TABLE 2
SUMMARY OF GROUNDWATER LABORATORY RESULTS
MADEP EPH AND VPH

Incident Name and No.: TT-2103 - Pending

Sample ID	Analytcial Method →		MADEP EPH			MADEP VPH			MADEP EPH/VPH			
	Contaminant of Concern →		C9-C18 Aliphatics	C19-C36 Aliphatics	C11-C22 Aromatics	C5-C8 Aliphatics	C9-C12 Aliphatics	C9-C10 Aromatics	C5-C8 Aliphatics	C9-C18 Aliphatics	C19-C36 Aliphatics	C9-C22 Aromatics
	Date Collected	Well ID										
TT2103-TW01	1/18/2010	TT2103-TW01	<100	<100	<100	<100	<100	<100	<100	<200	<100	<200
GCL (ug/L)									NE	NE	NE	NE
2L GWQS (ug/L)									400	700	10,000	200

All results in micrograms per liter (ug/L).
Gross Contaminant Levels (GCL) and NCAC T15A:02L Groundwater Quality Standards (2L GWQS) effective January 2010.
< = Less than reporting limit
NE = None Established

FIGURES



Data Sources: Data Layers provided by MCB Camp Lejeune GIS Office.

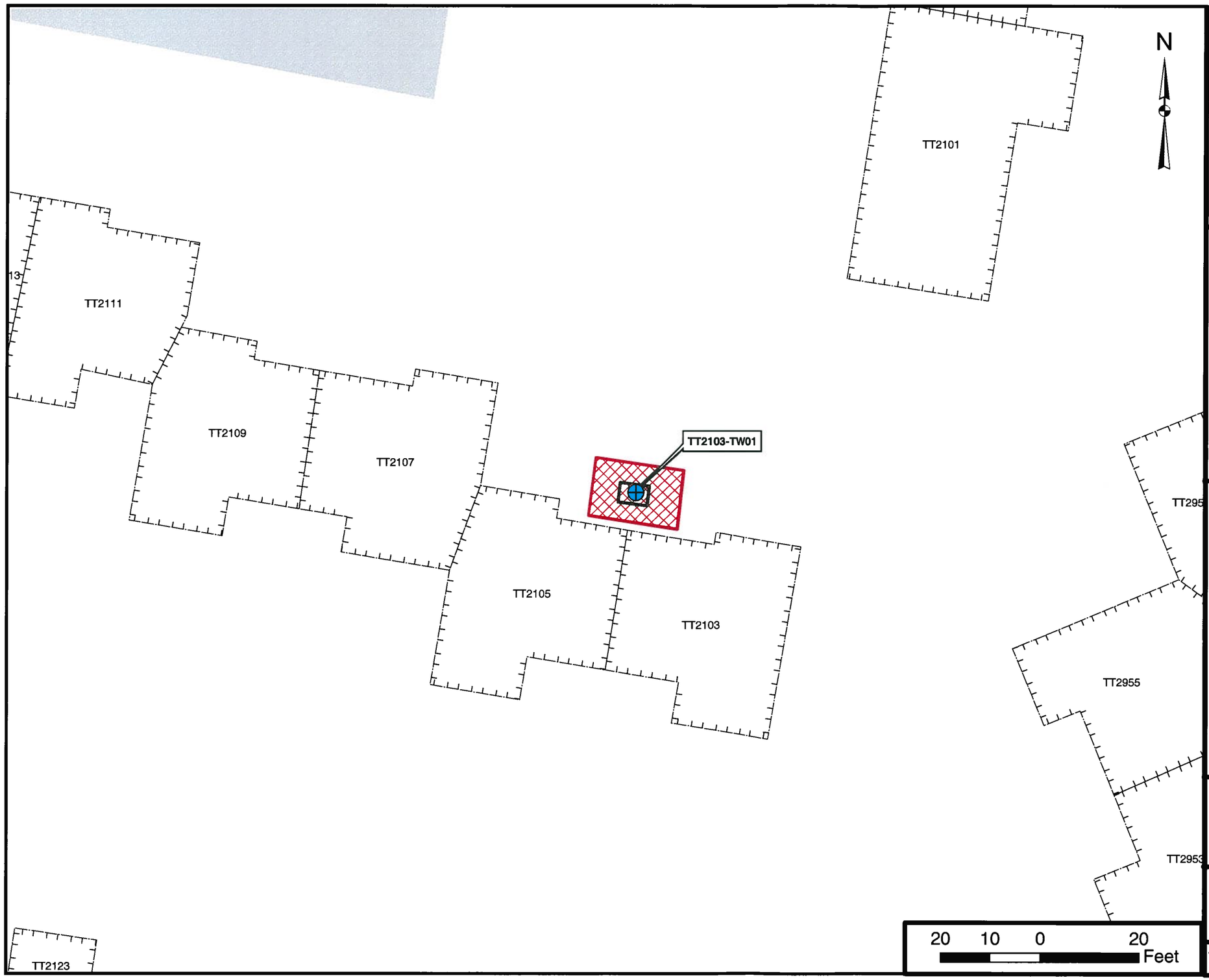
CATLIN Engineers and Scientists
220 Old Dairy Road
Wilmington, NC 28405
Corporate Licensure No. for Engineering Services C-0585

PROJECT
SITE TT-2103
IAA ADDENDUM REPORT
MARINE CORPS BASE
CAMP LEJEUNE, NC

TITLE
USGS TOPOGRAPHIC SITE VICINITY MAP

FIGURE
1

JOB NO.	DATE	SCALE	DRAWN BY	CHECKED BY
209112.03	JAN 2010	AS SHOWN	SAC	JKB



SITE TT-2103
IAA ADDENDUM REPORT
MARINE CORPS BASE
CAMP LEJEUNE, NC

NAVFAC
Naval Facilities Engineering Command
ATLANTIC DIVISION

LEGEND

- Tank Excavation Area
- Former UST
- Temporary Well Location
- Demolished Buildings and Structures
- Slabs
- Driveways
- Roads
- Woods

NOTES

1. Data layers provided by MCB Camp Lejeune GIS office.
2. Excavation dimensions were approximately 18 feet by 12 feet by 9.5 feet deep.
3. Tank location and excavation boundary based on site sketch provided by TMS personnel.

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SITE MAP WITH GROUNDWATER SAMPLE LOCATION

FIGURE 2

Job No.:	Date:	Scale:	Drawn By:	Checked By:
209112.03	JAN 2010	AS SHOWN	SAC	JKB

LABORATORY ANALYTICAL RESULTS AND CHAIN-OF-CUSTODY DOCUMENTATION

SGS

Jeff Becken
Richard Catlin & Associates
P.O. Box 10280
Wilmington, NC 28404-0280

Report Number: G128-2490

Client Project: TT-Sites

Dear Jeff Becken,

Enclosed are the results of the analytical services performed under the referenced project for the received samples and associated QC as applicable. 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 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 services performed during this project, please call Barbara Hager at (910) 350-1903. We will be happy to answer any questions or concerns which you may have.

Thank you for using SGS North America, Inc. for your analytical services. We look forward to working with you again on any additional analytical needs.

Sincerely,
SGS North America, Inc.

Barbara Hager Jan 26. 2010

Project Manager
Barbara Hager

Date

List of Reporting Abbreviations
And Data Qualifiers

B = Compound also detected in batch blank

BQL = Below Quantification 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/CL = Reporting Limit / Control Limit

RPD = Relative Percent Difference

UJ = Target analytes with recoveries that are 10% < %R < LCL; # of MEs are allowable and compounds are not detected in the sample.

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.

Results for Volatiles
by GC 602

Client Sample ID: TT2506-TW01
Client Project ID: TT-Sites
Lab Sample ID: G128-2490-1A
Lab Project ID: G128-2490

Analyzed By: DVO
Date Collected: 1/18/10 11:45
Date Received: 1/19/10
Matrix: Water

Analyte	Result ug/L	RL ug/L	MDL ug/L	Dilution Factor	Date Analyzed	Flags
Benzene	BQL	1.00	0.177	1	1/21/10	
Diisopropyl ether (DIPE)	BQL	1.00	0.253	1	1/21/10	
Ethylbenzene	**1.33**	1.00	0.19	1	1/21/10	
Methyl-tert butyl ether (MTBE)	BQL	2.00	0.306	1	1/21/10	
Toluene	BQL	1.00	0.313	1	1/21/10	
m/p-Xylene	**5.97**	2.00	0.481	1	1/21/10	
o-Xylene	**2.34**	2.00	0.405	1	1/21/10	

Surrogate Spike Recoveries	Spike Added	Spike Result	Percent Recovery
Trifluorotoluene	40	40.5	101

Comments:
All values corrected for dilution.
BQL = Below quantitation limit.

Reviewed By: _____

Results for Volatiles
by GC 602

Client Sample ID: TT2125-TW01
Client Project ID: TT-Sites
Lab Sample ID: G128-2490-2A
Lab Project ID: G128-2490

Analyzed By: DVO
Date Collected: 1/18/10 15:00
Date Received: 1/19/10
Matrix: Water

Analyte	Result ug/L	RL ug/L	MDL ug/L	Dilution Factor	Date Analyzed	Flags
Benzene	BQL	1.00	0.177	1	1/21/10	
Diisopropyl ether (DIPE)	BQL	1.00	0.253	1	1/21/10	
Ethylbenzene	BQL	1.00	0.19	1	1/21/10	
Methyl-tert butyl ether (MTBE)	BQL	2.00	0.306	1	1/21/10	
Toluene	BQL	1.00	0.313	1	1/21/10	
m/p-Xylene	BQL	2.00	0.481	1	1/21/10	
o-Xylene	BQL	2.00	0.405	1	1/21/10	

Surrogate Spike Recoveries	Spike Added	Spike Result	Percent Recovery
Trifluorotoluene	40	40.2	100

Comments:
All values corrected for dilution.
BQL = Below quantitation limit.

Reviewed By: _____

Results for Volatiles
by GC 602

Client Sample ID: TT2117-TW01
Client Project ID: TT-Sites
Lab Sample ID: G128-2490-3A
Lab Project ID: G128-2490

Analyzed By: DVO
Date Collected: 1/18/2010 13:00
Date Received: 1/19/2010
Matrix: Water

Analyte	Result ug/L	RL ug/L	MDL ug/L	Dilution Factor	Date Analyzed	Flags
Benzene	**4.85**	1.00	0.177	1	1/22/2010	
Diisopropyl ether (DIPE)	BQL	1.00	0.253	1	1/22/2010	
Ethylbenzene	**23.5**	5.00	0.95	5	1/21/2010	
Methyl-tert butyl ether (MTBE)	BQL	2.00	0.306	1	1/22/2010	
Toluene	**1.31**	1.00	0.313	1	1/22/2010	
m/p-Xylene	**82.6**	10.0	2.41	5	1/21/2010	
o-Xylene	**55.4**	10.0	2.03	5	1/21/2010	

Surrogate Spike Recoveries	Spike Added	Spike Result	Percent Recovery
Trifluorotoluene	40	41.7	104

Comments:
All values corrected for dilution.
BQL = Below quantitation limit.

Reviewed By: _____
GC-VOA_WA

Results for Volatiles
by GC 602

Client Sample ID: TT2103-TW01
Client Project ID: TT-Sites
Lab Sample ID: G128-2490-4A
Lab Project ID: G128-2490

Analyzed By: DVO
Date Collected: 1/18/10 14:00
Date Received: 1/19/10
Matrix: Water

Analyte	Result ug/L	RL ug/L	MDL ug/L	Dilution Factor	Date Analyzed	Flags
Benzene	BQL	1.00	0.177	1	1/21/10	
Diisopropyl ether (DIPE)	BQL	1.00	0.253	1	1/21/10	
Ethylbenzene	BQL	1.00	0.19	1	1/21/10	
Methyl-tert butyl ether (MTBE)	BQL	2.00	0.306	1	1/21/10	
Toluene	BQL	1.00	0.313	1	1/21/10	
m/p-Xylene	BQL	2.00	0.481	1	1/21/10	
o-Xylene	BQL	2.00	0.405	1	1/21/10	

Surrogate Spike Recoveries	Spike Added	Spike Result	Percent Recovery
Trifluorotoluene	40	40.2	101

Comments:
All values corrected for dilution.
BQL = Below quantitation limit.

Reviewed By: _____

Results for Volatiles
by GC 602

Client Sample ID: TT2953-TW01
Client Project ID: TT-Sites
Lab Sample ID: G128-2490-5A
Lab Project ID: G128-2490

Analyzed By: DVO
Date Collected: 1/18/10 15:30
Date Received: 1/19/10
Matrix: Water

Analyte	Result ug/L	RL ug/L	MDL ug/L	Dilution Factor	Date Analyzed	Flags
Benzene	**0.811**	1.00	0.177	1	1/21/10	J
Diisopropyl ether (DIPE)	BQL	1.00	0.253	1	1/21/10	
Ethylbenzene	**8.50**	1.00	0.19	1	1/21/10	
Methyl-tert butyl ether (MTBE)	BQL	2.00	0.306	1	1/21/10	
Toluene	BQL	1.00	0.313	1	1/21/10	
m/p-Xylene	**19.0**	2.00	0.481	1	1/21/10	
o-Xylene	**2.94**	2.00	0.405	1	1/21/10	

Surrogate Spike Recoveries	Spike Added	Spike Result	Percent Recovery
Trifluorotoluene	40	40.7	102

Comments:
All values corrected for dilution.
BQL = Below quantitation limit.

Reviewed By: _____

Results for Semivolatiles by GCMS 625

Client Sample ID: TT2506-TW01
Client Project ID: TT-Sites
Lab Sample ID: G128-2490-1J
Lab Project ID: G128-2490

Initial/Final Amt: 883 mL / 5 mL

Analyzed By: DCS
Date Collected: 1/18/2010 11:45
Date Received: 1/19/2010
Date Extracted: 1/19/2010
Matrix: Water

Compound	Result ug/L	RL ug/L	MDL ug/L	Dilution Factor	Date Analyzed	Flag
Acenaphthene	**1.13**	5.66	0.844	1	1/21/2010	J
Acenaphthylene	BQL	5.66	0.844	1	1/21/2010	
Anthracene	BQL	5.66	0.991	1	1/21/2010	
Benzo[a]anthracene	BQL	5.66	0.770	1	1/21/2010	
Benzo[a]pyrene	BQL	5.66	0.719	1	1/21/2010	
Benzo[b]fluoranthene	BQL	5.66	0.810	1	1/21/2010	
Benzo[g,h,i]perylene	BQL	5.66	0.696	1	1/21/2010	
Benzo[k]fluoranthene	BQL	5.66	0.623	1	1/21/2010	
Bis(2-chloroethoxy)methane	BQL	5.66	1.17	1	1/21/2010	
Bis(2-chloroethyl)ether	BQL	5.66	1.18	1	1/21/2010	
Bis(2-chloroisopropyl)ether	BQL	5.66	1.10	1	1/21/2010	
Bis(2-ethylhexyl)phthalate	BQL	5.66	0.464	1	1/21/2010	
4-bromophenyl phenyl ether	BQL	5.66	0.883	1	1/21/2010	
Butylbenzylphthalate	BQL	5.66	0.504	1	1/21/2010	
2-Chloronaphthalene	BQL	5.66	0.980	1	1/21/2010	
2-Chlorophenol	BQL	5.66	1.33	1	1/21/2010	
4-Chloro-3-methylphenol	BQL	5.66	0.900	1	1/21/2010	
4-Chlorophenyl phenyl ether	BQL	5.66	3.69	1	1/21/2010	
Chrysene	BQL	5.66	0.629	1	1/21/2010	
Dibenzo[a,h]anthracene	BQL	5.66	0.498	1	1/21/2010	
Di-n-Butylphthalate	BQL	5.66	0.934	1	1/21/2010	
3,3'-Dichlorobenzidine	BQL	11.3	1.38	1	1/21/2010	
2,4-Dichlorophenol	BQL	5.66	1.27	1	1/21/2010	
Diethylphthalate	BQL	5.66	0.838	1	1/21/2010	
Dimethylphthalate	BQL	5.66	0.629	1	1/21/2010	
2,4-Dimethylphenol	BQL	5.66	1.83	1	1/21/2010	
Di-n-octylphthalate	BQL	5.66	0.657	1	1/21/2010	
4,6-Dinitro-2-methylphenol	BQL	28.3	0.623	1	1/21/2010	
2,4-Dinitrophenol	BQL	28.3	0.725	1	1/21/2010	
2,4-Dinitrotoluene	BQL	5.66	0.606	1	1/21/2010	
2,6-Dinitrotoluene	BQL	5.66	0.736	1	1/21/2010	
Diphenylamine *	BQL	5.66	0.646	1	1/21/2010	
Fluoranthene	BQL	5.66	0.798	1	1/21/2010	
Fluorene	**1.64**	5.66	0.821	1	1/21/2010	J
Hexachlorobenzene	BQL	5.66	0.572	1	1/21/2010	
Hexachlorobutadiene	BQL	5.66	0.861	1	1/21/2010	
Hexachlorocyclopentadiene	BQL	11.3	11.3	1	1/21/2010	
Hexachloroethane	BQL	5.66	0.844	1	1/21/2010	
Indeno(1,2,3-c,d)pyrene	BQL	5.66	2.59	1	1/21/2010	
Isophorone	BQL	5.66	1.00	1	1/21/2010	
Naphthalene	**10.3**	5.66	1.03	1	1/21/2010	
Nitrobenzene	BQL	5.66	1.19	1	1/21/2010	
2-Nitrophenol	BQL	5.66	1.39	1	1/21/2010	
4-Nitrophenol	BQL	28.3	1.22	1	1/21/2010	
N-Nitrosodi-n-propylamine	BQL	5.66	1.70	1	1/21/2010	
Pentachlorophenol	BQL	28.3	1.60	1	1/21/2010	
Phenanthrene	**1.08**	5.66	0.504	1	1/21/2010	J

Results for Semivolatiles
by GCMS 625

Client Sample ID: TT2506-TW01
Client Project ID: TT-Sites
Lab Sample ID: G128-2490-1J
Lab Project ID: G128-2490

Initial/Final Amt: 883 mL / 5 mL

Analyzed By: DCS
Date Collected: 1/18/2010 11:45
Date Received: 1/19/2010
Date Extracted: 1/19/2010
Matrix: Water

Compound	Result ug/L	RL ug/L	MDL ug/L	Dilution Factor	Date Analyzed	Flag
Phenol	BQL	5.66	1.20	1	1/21/2010	
Pyrene	BQL	5.66	2.34	1	1/21/2010	
1,2,4-Trichlorobenzene	BQL	5.66	0.815	1	1/21/2010	
2,4,6-Trichlorophenol	BQL	5.66	1.05	1	1/21/2010	

	Spike Added	Spike Result	Percent Recovered
2-Fluorobiphenyl	10	9.5	95
2-Fluorophenol	10	9.1	91
Nitrobenzene-d5	10	9.7	97
Phenol-d6	10	9.2	92
2,4,6-Tribromophenol	10	10.6	106
4-Terphenyl-d14	10	10.2	102

Comments:

Flags:
BQL = Below Quantitation Limits.
J = Detected below the quantitation limit.

Reviewed By: _____

Results of Library Search for Semivolatile Compounds

by GCMS

Client Sample ID: TT2506-TW01
Client Project ID: TT-Sites
Lab Sample ID: G128-2490-1J
Lab Project ID: G128-2490
Sample Wt/Vol: 883 ML
Dilution: 1

Analyzed By: DES
Date Collected: 1/18/2010 11:45
Date Received: 1/19/2010
Date Extracted: 1/19/2010
Date Analyzed: 1/21/2010
Matrix: Water

No.	Compound	Retention Time	CAS#	Match Probability	Result ug/L
1	Naphthalene, 2,3-dimethyl-	6.72	581-40-8	98	19.7
2	Naphthalene, 1,5-dimethyl-	6.63	571-61-9	98	16.7
3	Benzene, 1,2,4-trimethyl-	4.05	95-63-6	95	16
4	Alkane, Unknown	4.94			14
5	Benzene, 1-methyl-3-(1-methylethyl)-	4.27	535-77-3	94	7
6	Alkane, Unknown	5.04			6.3
7	Benzene, 1-methyl-4-propyl-	4.34	1074-55-1	91	5.96
8	Alkane, Unknown	4.42			2.47

Comment:

Tentatively Identified Compound (TIC) refers to substances which are not present in the list of target compounds. Therefore, not all TICs are identified and quantitated using individual standards. TIC listings are prepared utilizing a computerized library search of electron impact mass spectral data and evaluation of the relevant data by a mass spectral data specialist.

Quantitation is accomplished by relative peak area of the compound compared to that of the nearest internal standard from the total ion chromatogram. TICs are identified and quantitated only if the peak area is equal to or greater than 10% of that of the nearest internal standard. Quantitation provided is an estimate.

Reviewed by: _____

Results for Semivolatiles
by GCMS 625

Client Sample ID: TT2125-TW01
Client Project ID: TT-Sites
Lab Sample ID: G128-2490-2J
Lab Project ID: G128-2490

Initial/Final Amt: 889 mL / 5 mL

Analyzed By: DCS
Date Collected: 1/18/2010 15:00
Date Received: 1/19/2010
Date Extracted: 1/19/2010
Matrix: Water

Compound	Result ug/L	RL ug/L	MDL ug/L	Dilution Factor	Date Analyzed	Flag
Acenaphthene	BQL	5.62	0.838	1	1/21/2010	
Acenaphthylene	BQL	5.62	0.838	1	1/21/2010	
Anthracene	BQL	5.62	0.984	1	1/21/2010	
Benzo[a]anthracene	BQL	5.62	0.765	1	1/21/2010	
Benzo[a]pyrene	BQL	5.62	0.714	1	1/21/2010	
Benzo[b]fluoranthene	BQL	5.62	0.804	1	1/21/2010	
Benzo[g,h,i]perylene	BQL	5.62	0.692	1	1/21/2010	
Benzo[k]fluoranthene	BQL	5.62	0.619	1	1/21/2010	
Bis(2-chloroethoxy)methane	BQL	5.62	1.16	1	1/21/2010	
Bis(2-chloroethyl)ether	BQL	5.62	1.17	1	1/21/2010	
Bis(2-chloroisopropyl)ether	BQL	5.62	1.10	1	1/21/2010	
Bis(2-ethylhexyl)phthalate	BQL	5.62	0.461	1	1/21/2010	
4-bromophenyl phenyl ether	BQL	5.62	0.877	1	1/21/2010	
Butylbenzylphthalate	BQL	5.62	0.501	1	1/21/2010	
2-Chloronaphthalene	BQL	5.62	0.973	1	1/21/2010	
2-Chlorophenol	BQL	5.62	1.32	1	1/21/2010	
4-Chloro-3-methylphenol	BQL	5.62	0.894	1	1/21/2010	
4-Chlorophenyl phenyl ether	BQL	5.62	3.66	1	1/21/2010	
Chrysene	BQL	5.62	0.624	1	1/21/2010	
Dibenzo[a,h]anthracene	BQL	5.62	0.495	1	1/21/2010	
Di-n-Butylphthalate	BQL	5.62	0.928	1	1/21/2010	
3,3'-Dichlorobenzidine	BQL	11.2	1.37	1	1/21/2010	
2,4-Dichlorophenol	BQL	5.62	1.26	1	1/21/2010	
Diethylphthalate	BQL	5.62	0.832	1	1/21/2010	
Dimethylphthalate	BQL	5.62	0.624	1	1/21/2010	
2,4-Dimethylphenol	BQL	5.62	1.82	1	1/21/2010	
Di-n-octylphthalate	BQL	5.62	0.652	1	1/21/2010	
4,6-Dinitro-2-methylphenol	BQL	28.1	0.619	1	1/21/2010	
2,4-Dinitrophenol	BQL	28.1	0.720	1	1/21/2010	
2,4-Dinitrotoluene	BQL	5.62	0.602	1	1/21/2010	
2,6-Dinitrotoluene	BQL	5.62	0.731	1	1/21/2010	
Diphenylamine *	BQL	5.62	0.641	1	1/21/2010	
Fluoranthene	BQL	5.62	0.793	1	1/21/2010	
Fluorene	BQL	5.62	0.816	1	1/21/2010	
Hexachlorobenzene	BQL	5.62	0.568	1	1/21/2010	
Hexachlorobutadiene	BQL	5.62	0.855	1	1/21/2010	
Hexachlorocyclopentadiene	BQL	11.2	11.2	1	1/21/2010	
Hexachloroethane	BQL	5.62	0.838	1	1/21/2010	
Indeno(1,2,3-c,d)pyrene	BQL	5.62	2.57	1	1/21/2010	
Isophorone	BQL	5.62	0.996	1	1/21/2010	
Naphthalene	BQL	5.62	1.02	1	1/21/2010	
Nitrobenzene	BQL	5.62	1.18	1	1/21/2010	
2-Nitrophenol	BQL	5.62	1.38	1	1/21/2010	
4-Nitrophenol	BQL	28.1	1.21	1	1/21/2010	
N-Nitrosodi-n-propylamine	BQL	5.62	1.69	1	1/21/2010	
Pentachlorophenol	BQL	28.1	1.59	1	1/21/2010	
Phenanthrene	BQL	5.62	0.501	1	1/21/2010	

SGS North America, Inc.

Results for Semivolatiles
by GCMS 625

Client Sample ID: TT2125-TW01
Client Project ID: TT-Sites
Lab Sample ID: G128-2490-2J
Lab Project ID: G128-2490

Initial/Final Amt: 889 mL / 5 mL

Analyzed By: DCS
Date Collected: 1/18/2010 15:00
Date Received: 1/19/2010
Date Extracted: 1/19/2010
Matrix: Water

Compound	Result ug/L	RL ug/L	MDL ug/L	Dilution Factor	Date Analyzed	Flag
Phenol	BQL	5.62	1.19	1	1/21/2010	
Pyrene	BQL	5.62	2.32	1	1/21/2010	
1,2,4-Trichlorobenzene	BQL	5.62	0.810	1	1/21/2010	
2,4,6-Trichlorophenol	BQL	5.62	1.04	1	1/21/2010	

	Spike Added	Spike Result	Percent Recovered
2-Fluorobiphenyl	10	9.1	91
2-Fluorophenol	10	8	80
Nitrobenzene-d5	10	8.9	89
Phenol-d6	10	8.6	86
2,4,6-Tribromophenol	10	9.5	95
4-Terphenyl-d14	10	10.5	105

Comments:

Flags:
BQL = Below Quantitation Limits.
J = Detected below the quantitation limit.

Reviewed By: 

Results of Library Search for Semivolatile Compounds

by GCMS

Client Sample ID: TT2125-TW01
Client Project ID: TT-Sites
Lab Sample ID: G128-2490-2J
Lab Project ID: G128-2490
Sample Wt/Vol: 889 ML
Dilution: 1

Analyzed By: DES
Date Collected: 1/18/2010 15:00
Date Received: 1/19/2010
Date Extracted: 1/19/2010
Date Analyzed: 1/21/2010
Matrix: Water

No.	Compound	Retention Time	CAS#	Match Probability	Result ug/L
1	Dieldrin	10.30	60-57-1	99	4.74
2	Alkane, Unknown	4.42			2.78
3	Alkane, Unknown	4.42			2.74

Comment:

Tentatively Identified Compound (TIC) refers to substances which are not present in the list of target compounds. Therefore, not all TICs are identified and quantitated using individual standards. TIC listings are prepared utilizing a computerized library search of electron impact mass spectral data and evaluation of the relevant data by a mass spectral data specialist.

Quantitation is accomplished by relative peak area of the compound compared to that of the nearest internal standard from the total ion chromatogram. TICs are identified and quantitated only if the peak area is equal to or greater than 10% of that of the nearest internal standard. Quantitation provided is an estimate.

Reviewed by: _____

Results for Semivolatiles
by GCMS 625

Client Sample ID: TT2117-TW01
Client Project ID: TT-Sites
Lab Sample ID: G128-2490-3J
Lab Project ID: G128-2490

Initial/Final Amt: 886 mL / 5 mL

Analyzed By: DCS
Date Collected: 1/18/2010 13:00
Date Received: 1/19/2010
Date Extracted: 1/19/2010
Matrix: Water

Compound	Result ug/L	RL ug/L	MDL ug/L	Dilution Factor	Date Analyzed	Flag
Acenaphthene	**1.58**	5.64	0.841	1	1/21/2010	J
Acenaphthylene	BQL	5.64	0.841	1	1/21/2010	
Anthracene	BQL	5.64	0.988	1	1/21/2010	
Benzo[a]anthracene	BQL	5.64	0.767	1	1/21/2010	
Benzo[a]pyrene	BQL	5.64	0.717	1	1/21/2010	
Benzo[b]fluoranthene	BQL	5.64	0.807	1	1/21/2010	
Benzo[g,h,i]perylene	BQL	5.64	0.694	1	1/21/2010	
Benzo[k]fluoranthene	BQL	5.64	0.621	1	1/21/2010	
Bis(2-chloroethoxy)methane	BQL	5.64	1.16	1	1/21/2010	
Bis(2-chloroethyl)ether	BQL	5.64	1.17	1	1/21/2010	
Bis(2-chloroisopropyl)ether	BQL	5.64	1.10	1	1/21/2010	
Bis(2-ethylhexyl)phthalate	BQL	5.64	0.463	1	1/21/2010	
4-bromophenyl phenyl ether	BQL	5.64	0.880	1	1/21/2010	
Butylbenzylphthalate	BQL	5.64	0.502	1	1/21/2010	
2-Chloronaphthalene	BQL	5.64	0.976	1	1/21/2010	
2-Chlorophenol	BQL	5.64	1.32	1	1/21/2010	
4-Chloro-3-methylphenol	BQL	5.64	0.897	1	1/21/2010	
4-Chlorophenyl phenyl ether	BQL	5.64	3.67	1	1/21/2010	
Chrysene	BQL	5.64	0.626	1	1/21/2010	
Dibenzo[a,h]anthracene	BQL	5.64	0.497	1	1/21/2010	
Di-n-Butylphthalate	BQL	5.64	0.931	1	1/21/2010	
3,3'-Dichlorobenzidine	BQL	11.3	1.38	1	1/21/2010	
2,4-Dichlorophenol	BQL	5.64	1.26	1	1/21/2010	
Diethylphthalate	BQL	5.64	0.835	1	1/21/2010	
Dimethylphthalate	BQL	5.64	0.626	1	1/21/2010	
2,4-Dimethylphenol	BQL	5.64	1.83	1	1/21/2010	
Di-n-octylphthalate	BQL	5.64	0.655	1	1/21/2010	
4,6-Dinitro-2-methylphenol	BQL	28.2	0.621	1	1/21/2010	
2,4-Dinitrophenol	BQL	28.2	0.722	1	1/21/2010	
2,4-Dinitrotoluene	BQL	5.64	0.604	1	1/21/2010	
2,6-Dinitrotoluene	BQL	5.64	0.734	1	1/21/2010	
Diphenylamine *	BQL	5.64	0.643	1	1/21/2010	
Fluoranthene	BQL	5.64	0.796	1	1/21/2010	
Fluorene	**2.48**	5.64	0.818	1	1/21/2010	J
Hexachlorobenzene	BQL	5.64	0.570	1	1/21/2010	
Hexachlorobutadiene	BQL	5.64	0.858	1	1/21/2010	
Hexachlorocyclopentadiene	BQL	11.3	11.3	1	1/21/2010	
Hexachloroethane	BQL	5.64	0.841	1	1/21/2010	
Indeno(1,2,3-c,d)pyrene	BQL	5.64	2.58	1	1/21/2010	
Isophorone	BQL	5.64	0.999	1	1/21/2010	
Naphthalene	**55.6**	5.64	1.03	1	1/21/2010	
Nitrobenzene	BQL	5.64	1.19	1	1/21/2010	
2-Nitrophenol	BQL	5.64	1.39	1	1/21/2010	
4-Nitrophenol	BQL	28.2	1.22	1	1/21/2010	
N-Nitrosodi-n-propylamine	BQL	5.64	1.69	1	1/21/2010	
Pentachlorophenol	BQL	28.2	1.60	1	1/21/2010	
Phenanthrene	**1.69**	5.64	0.502	1	1/21/2010	J

Results for Semivolatiles
by GCMS 625

Client Sample ID: TT2117-TW01
Client Project ID: TT-Sites
Lab Sample ID: G128-2490-3J
Lab Project ID: G128-2490

Initial/Final Amt: 886 mL / 5 mL

Analyzed By: DCS
Date Collected: 1/18/2010 13:00
Date Received: 1/19/2010
Date Extracted: 1/19/2010
Matrix: Water

Compound	Result ug/L	RL ug/L	MDL ug/L	Dilution Factor	Date Analyzed	Flag
Phenol	BQL	5.64	1.20	1	1/21/2010	
Pyrene	BQL	5.64	2.33	1	1/21/2010	
1,2,4-Trichlorobenzene	BQL	5.64	0.813	1	1/21/2010	
2,4,6-Trichlorophenol	BQL	5.64	1.04	1	1/21/2010	

	Spike Added	Spike Result	Percent Recovered
2-Fluorobiphenyl	10	9.1	91
2-Fluorophenol	10	8.4	84
Nitrobenzene-d5	10	9.2	92
Phenol-d6	10	8.9	89
2,4,6-Tribromophenol	10	11	110
4-Terphenyl-d14	10	10.8	108

Comments:

Flags:
BQL = Below Quantitation Limits.
J = Detected below the quantitation limit.

Reviewed By: 

Results of Library Search for Semivolatile Compounds

by GCMS

Client Sample ID: TT2117-TW01
Client Project ID: TT-Sites
Lab Sample ID: G128-2490-3J
Lab Project ID: G128-2490
Sample Wt/Vol: 886 ML
Dilution: 1

Analyzed By: DES
Date Collected: 1/18/2010 13:00
Date Received: 1/19/2010
Date Extracted: 1/19/2010
Date Analyzed: 1/21/2010
Matrix: Water

No.	Compound	Retention Time	CAS#	Match Probability	Result ug/L
1	Benzene, 1,2,4-trimethyl-	4.05	95-63-6	95	52.8
2	Tetramethylbenzene, Isomer of	4.94			21.7
3	Benzene, 1,2-diethyl-	4.27	135-01-3	91	20.9
4	Naphthalene, 2,6-dimethyl-	6.66	581-42-0	97	20
5	Naphthalene, 2,7-dimethyl-	6.58	582-16-1	97	18.1
6	Benzene, 2-ethyl-1,4-dimethyl-	4.41	1758-88-9	94	14.4
7	Alkane, Unknown	4.16			14.3
8	Alkane, Unknown	4.42			5.75
9	Naphthalene, 1-methyl-	6.02	90-12-0	91	5.55

Comment:

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Quantitation is accomplished by relative peak area of the compound compared to that of the nearest internal standard from the total ion chromatogram. TICs are identified and quantitated only if the peak area is equal to or greater than 10% of that of the nearest internal standard. Quantitation provided is an estimate.

Reviewed by: _____

Results for Semivolatiles
by GCMS 625

Client Sample ID: TT2103-TW01
Client Project ID: TT-Sites
Lab Sample ID: G128-2490-4J
Lab Project ID: G128-2490

Initial/Final Amt: 882 mL / 5 mL

Analyzed By: DCS
Date Collected: 1/18/2010 14:00
Date Received: 1/19/2010
Date Extracted: 1/19/2010
Matrix: Water

Compound	Result ug/L	RL ug/L	MDL ug/L	Dilution Factor	Date Analyzed	Flag
Acenaphthene	BQL	5.67	0.845	1	1/21/2010	
Acenaphthylene	BQL	5.67	0.845	1	1/21/2010	
Anthracene	BQL	5.67	0.992	1	1/21/2010	
Benzo[a]anthracene	BQL	5.67	0.771	1	1/21/2010	
Benzo[a]pyrene	BQL	5.67	0.720	1	1/21/2010	
Benzo[b]fluoranthene	BQL	5.67	0.811	1	1/21/2010	
Benzo[g,h,i]perylene	BQL	5.67	0.697	1	1/21/2010	
Benzo[k]fluoranthene	BQL	5.67	0.624	1	1/21/2010	
Bis(2-chloroethoxy)methane	BQL	5.67	1.17	1	1/21/2010	
Bis(2-chloroethyl)ether	BQL	5.67	1.18	1	1/21/2010	
Bis(2-chloroisopropyl)ether	BQL	5.67	1.11	1	1/21/2010	
Bis(2-ethylhexyl)phthalate	BQL	5.67	0.465	1	1/21/2010	
4-bromophenyl phenyl ether	BQL	5.67	0.884	1	1/21/2010	
Butylbenzylphthalate	BQL	5.67	0.505	1	1/21/2010	
2-Chloronaphthalene	BQL	5.67	0.981	1	1/21/2010	
2-Chlorophenol	BQL	5.67	1.33	1	1/21/2010	
4-Chloro-3-methylphenol	BQL	5.67	0.901	1	1/21/2010	
4-Chlorophenyl phenyl ether	BQL	5.67	3.69	1	1/21/2010	
Chrysene	BQL	5.67	0.629	1	1/21/2010	
Dibenzo[a,h]anthracene	BQL	5.67	0.499	1	1/21/2010	
Di-n-Butylphthalate	BQL	5.67	0.935	1	1/21/2010	
3,3'-Dichlorobenzidine	BQL	11.3	1.38	1	1/21/2010	
2,4-Dichlorophenol	BQL	5.67	1.27	1	1/21/2010	
Diethylphthalate	BQL	5.67	0.839	1	1/21/2010	
Dimethylphthalate	BQL	5.67	0.629	1	1/21/2010	
2,4-Dimethylphenol	BQL	5.67	1.84	1	1/21/2010	
Di-n-octylphthalate	BQL	5.67	0.658	1	1/21/2010	
4,6-Dinitro-2-methylphenol	BQL	28.3	0.624	1	1/21/2010	
2,4-Dinitrophenol	BQL	28.3	0.726	1	1/21/2010	
2,4-Dinitrotoluene	BQL	5.67	0.607	1	1/21/2010	
2,6-Dinitrotoluene	BQL	5.67	0.737	1	1/21/2010	
Diphenylamine *	BQL	5.67	0.646	1	1/21/2010	
Fluoranthene	BQL	5.67	0.799	1	1/21/2010	
Fluorene	BQL	5.67	0.822	1	1/21/2010	
Hexachlorobenzene	BQL	5.67	0.573	1	1/21/2010	
Hexachlorobutadiene	BQL	5.67	0.862	1	1/21/2010	
Hexachlorocyclopentadiene	BQL	11.3	11.3	1	1/21/2010	
Hexachloroethane	BQL	5.67	0.845	1	1/21/2010	
Indeno(1,2,3-c,d)pyrene	BQL	5.67	2.59	1	1/21/2010	
Isophorone	BQL	5.67	1.00	1	1/21/2010	
Naphthalene	BQL	5.67	1.03	1	1/21/2010	
Nitrobenzene	BQL	5.67	1.19	1	1/21/2010	
2-Nitrophenol	BQL	5.67	1.39	1	1/21/2010	
4-Nitrophenol	BQL	28.3	1.22	1	1/21/2010	
N-Nitrosodi-n-propylamine	BQL	5.67	1.70	1	1/21/2010	
Pentachlorophenol	BQL	28.3	1.60	1	1/21/2010	
Phenanthrene	BQL	5.67	0.505	1	1/21/2010	

Results for Semivolatiles
by GCMS 625

Client Sample ID: TT2103-TW01
Client Project ID: TT-Sites
Lab Sample ID: G128-2490-4J
Lab Project ID: G128-2490

Initial/Final Amt: 882 mL / 5 mL

Analyzed By: DCS
Date Collected: 1/18/2010 14:00
Date Received: 1/19/2010
Date Extracted: 1/19/2010
Matrix: Water

Compound	Result ug/L	RL ug/L	MDL ug/L	Dilution Factor	Date Analyzed	Flag
Phenol	BQL	5.67	1.20	1	1/21/2010	
Pyrene	BQL	5.67	2.34	1	1/21/2010	
1,2,4-Trichlorobenzene	BQL	5.67	0.816	1	1/21/2010	
2,4,6-Trichlorophenol	BQL	5.67	1.05	1	1/21/2010	

	Spike Added	Spike Result	Percent Recovered
2-Fluorobiphenyl	10	8.7	87
2-Fluorophenol	10	7.7	77
Nitrobenzene-d5	10	8.7	87
Phenol-d6	10	8.2	82
2,4,6-Tribromophenol	10	9.4	94
4-Terphenyl-d14	10	10.2	102

Comments:

Flags:
BQL = Below Quantitation Limits.
J = Detected below the quantitation limit.

Reviewed By: _____

Results of Library Search for Semivolatile Compounds

by GCMS

Client Sample ID: TT2103-TW01
Client Project ID: TT-Sites
Lab Sample ID: G128-2490-4J
Lab Project ID: G128-2490
Sample Wt/Vol: 882 ML
Dilution: 1

Analyzed By: DES
Date Collected: 1/18/2010 14:00
Date Received: 1/19/2010
Date Extracted: 1/19/2010
Date Analyzed: 1/21/2010
Matrix: Water

No.	Compound	Retention Time	CAS#	Match Probability	Result ug/L
1	Alkane, Unknown	4.42			4.21

Comment:

Tentatively Identified Compound (TIC) refers to substances which are not present in the list of target compounds. Therefore, not all TICs are identified and quantitated using individual standards. TIC listings are prepared utilizing a computerized library search of electron impact mass spectral data and evaluation of the relevant data by a mass spectral data specialist.

Quantitation is accomplished by relative peak area of the compound compared to that of the nearest internal standard from the total ion chromatogram. TICs are identified and quantitated only if the peak area is equal to or greater than 10% of that of the nearest internal standard. Quantitation provided is an estimate.

Reviewed by: _____

Results for Semivolatiles by GCMS 625

Client Sample ID: TT2953-TW01
Client Project ID: TT-Sites
Lab Sample ID: G128-2490-5J
Lab Project ID: G128-2490

Initial/Final Amt: 872 mL / 5 mL

Analyzed By: DCS
Date Collected: 1/18/2010 15:30
Date Received: 1/19/2010
Date Extracted: 1/19/2010
Matrix: Water

Compound	Result ug/L	RL ug/L	MDL ug/L	Dilution Factor	Date Analyzed	Flag
Acenaphthene	**1.20**	5.73	0.854	1	1/21/2010	J
Acenaphthylene	BQL	5.73	0.854	1	1/21/2010	
Anthracene	BQL	5.73	1.00	1	1/21/2010	
Benzo[a]anthracene	BQL	5.73	0.780	1	1/21/2010	
Benzo[a]pyrene	BQL	5.73	0.728	1	1/21/2010	
Benzo[b]fluoranthene	BQL	5.73	0.820	1	1/21/2010	
Benzo[g,h,i]perylene	BQL	5.73	0.705	1	1/21/2010	
Benzo[k]fluoranthene	BQL	5.73	0.631	1	1/21/2010	
Bis(2-chloroethoxy)methane	BQL	5.73	1.18	1	1/21/2010	
Bis(2-chloroethyl)ether	BQL	5.73	1.19	1	1/21/2010	
Bis(2-chloroisopropyl)ether	BQL	5.73	1.12	1	1/21/2010	
Bis(2-ethylhexyl)phthalate	BQL	5.73	0.470	1	1/21/2010	
4-bromophenyl phenyl ether	BQL	5.73	0.894	1	1/21/2010	
Butylbenzylphthalate	BQL	5.73	0.510	1	1/21/2010	
2-Chloronaphthalene	BQL	5.73	0.992	1	1/21/2010	
2-Chlorophenol	BQL	5.73	1.34	1	1/21/2010	
4-Chloro-3-methylphenol	BQL	5.73	0.912	1	1/21/2010	
4-Chlorophenyl phenyl ether	BQL	5.73	3.73	1	1/21/2010	
Chrysene	BQL	5.73	0.636	1	1/21/2010	
Dibenzo[a,h]anthracene	BQL	5.73	0.505	1	1/21/2010	
Di-n-Butylphthalate	BQL	5.73	0.946	1	1/21/2010	
3,3'-Dichlorobenzidine	BQL	11.5	1.40	1	1/21/2010	
2,4-Dichlorophenol	BQL	5.73	1.28	1	1/21/2010	
Diethylphthalate	BQL	5.73	0.849	1	1/21/2010	
Dimethylphthalate	BQL	5.73	0.636	1	1/21/2010	
2,4-Dimethylphenol	BQL	5.73	1.86	1	1/21/2010	
Di-n-octylphthalate	BQL	5.73	0.665	1	1/21/2010	
4,6-Dinitro-2-methylphenol	BQL	28.7	0.631	1	1/21/2010	
2,4-Dinitrophenol	BQL	28.7	0.734	1	1/21/2010	
2,4-Dinitrotoluene	BQL	5.73	0.614	1	1/21/2010	
2,6-Dinitrotoluene	BQL	5.73	0.745	1	1/21/2010	
Diphenylamine *	BQL	5.73	0.654	1	1/21/2010	
Fluoranthene	BQL	5.73	0.808	1	1/21/2010	
Fluorene	**2.58**	5.73	0.831	1	1/21/2010	J
Hexachlorobenzene	BQL	5.73	0.579	1	1/21/2010	
Hexachlorobutadiene	BQL	5.73	0.872	1	1/21/2010	
Hexachlorocyclopentadiene	BQL	11.5	11.5	1	1/21/2010	
Hexachloroethane	BQL	5.73	0.854	1	1/21/2010	
Indeno(1,2,3-c,d)pyrene	BQL	5.73	2.62	1	1/21/2010	
Isophorone	BQL	5.73	1.01	1	1/21/2010	
Naphthalene	**19.7**	5.73	1.04	1	1/21/2010	
Nitrobenzene	BQL	5.73	1.20	1	1/21/2010	
2-Nitrophenol	BQL	5.73	1.41	1	1/21/2010	
4-Nitrophenol	BQL	28.7	1.24	1	1/21/2010	
N-Nitrosodi-n-propylamine	BQL	5.73	1.72	1	1/21/2010	
Pentachlorophenol	BQL	28.7	1.62	1	1/21/2010	
Phenanthrene	**1.61**	5.73	0.510	1	1/21/2010	J

Results for Semivolatiles
by GCMS 625

Client Sample ID: TT2953-TW01
Client Project ID: TT-Sites
Lab Sample ID: G128-2490-5J
Lab Project ID: G128-2490

Initial/Final Amt: 872 mL / 5 mL

Analyzed By: DCS
Date Collected: 1/18/2010 15:30
Date Received: 1/19/2010
Date Extracted: 1/19/2010
Matrix: Water

Compound	Result ug/L	RL ug/L	MDL ug/L	Dilution Factor	Date Analyzed	Flag
Phenol	BQL	5.73	1.22	1	1/21/2010	
Pyrene	BQL	5.73	2.37	1	1/21/2010	
1,2,4-Trichlorobenzene	BQL	5.73	0.826	1	1/21/2010	
2,4,6-Trichlorophenol	BQL	5.73	1.06	1	1/21/2010	

	Spike Added	Spike Result	Percent Recovered
2-Fluorobiphenyl	10	8.5	85
2-Fluorophenol	10	7.7	77
Nitrobenzene-d5	10	8.4	84
Phenol-d6	10	8.3	83
2,4,6-Tribromophenol	10	10	100
4-Terphenyl-d14	10	10.7	107

Comments:

Flags:
BQL = Below Quantitation Limits.
J = Detected below the quantitation limit.

Reviewed By: _____

Results of Library Search for Semivolatile Compounds

by GCMS

Client Sample ID: TT2953-TW01
Client Project ID: TT-Sites
Lab Sample ID: G128-2490-5J
Lab Project ID: G128-2490
Sample Wt/Vol: 872 ML
Dilution: 1

Analyzed By: DES
Date Collected: 1/18/2010 15:30
Date Received: 1/19/2010
Date Extracted: 1/19/2010
Date Analyzed: 1/21/2010
Matrix: Water

No.	Compound	Retention Time	CAS#	Match Probability	Result ug/L
1	Benzene, 1,2,4-trimethyl-	4.05	95-63-6	95	18.2
2	Naphthalene, 2,6-dimethyl-	6.66	581-42-0	97	16.1
3	Benzene, 1-ethyl-3,5-dimethyl-	4.27	934-74-7	94	13.9
4	Propenylbenzene, Isomer of	4.34			13.4
5	Benzene, 2-ethyl-1,4-dimethyl-	4.41	1758-88-9	95	12.9
6	Naphthalene, 2,7-dimethyl-	6.58	582-16-1	97	11.6
7	Naphthalene, 1,5-dimethyl-	6.68	571-61-9	98	10.8
8	Aromatic, Unknown	5.04			10.2
9	Naphthalene, 2-methyl-	5.97	91-57-6	94	6.46
10	Alkane, Unknown	4.42			

Comment:

Tentatively Identified Compound (TIC) refers to substances which are not present in the list of target compounds. Therefore, not all TICs are identified and quantitated using individual standards. TIC listings are prepared utilizing a computerized library search of electron impact mass spectral data and evaluation of the relevant data by a mass spectral data specialist.

Quantitation is accomplished by relative peak area of the compound compared to that of the nearest internal standard from the total ion chromatogram. TICs are identified and quantitated only if the peak area is equal to or greater than 10% of that of the nearest internal standard. Quantitation provided is an estimate.

Reviewed by: _____

VPH (Aliphatics/Aromatics) Laboratory Reporting Form

Client Name: Richard Catlin & Associates

Project Name: TT-Sites

Sample Information	
Sample Identification	TT2506-TW01
Sample Matrix	Water
Collection Option (for Soil)*	NA
Date Collected	01/18/10 11:45
Date Received	01/19/10
Date Extracted	01/22/10 21:33 - 01/22/10 21:33
Date Analyzed	01/22/10 21:33 - 01/22/10 21:33
Dry Weight	NA
Dilution Factor	1 - 1

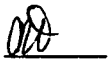
Analytical Results			
Analyte	Result µg/L	Report Limit µg/L	Flags
C_5-C_8 Aliphatics**	BQL	100	
C_9-C_{12} Aliphatics**	BQL	100	
C_9-C_{10} Aromatics**	177	100	

	Percent Recovery	Flags	Limits Lower	Limits Upper
Surrogate % Recovery - PID	104		70	130
Surrogate % Recovery - FID	105		70	130

* = 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 and are unadjusted for individual analytes.

Lab Info:	g128-2490-1d	Lab Info:	g128-2490-1d
FID Info:	VP012210/027F0101.D	PID Info:	VP012210/027R0101.D

Reviewed By: 

VPH (Aliphatics/Aromatics) Laboratory Reporting Form

Client Name: Richard Catlin & Associates

Project Name: TT-Sites

Sample Information	
Sample Identification	TT2125-TW01
Sample Matrix	Water
Collection Option (for Soil)*	NA
Date Collected	01/18/10 15:00
Date Received	01/19/10
Date Extracted	01/22/10 22:00 - 01/22/10 22:00
Date Analyzed	01/22/10 22:00 - 01/22/10 22:00
Dry Weight	NA
Dilution Factor	1 - 1

Analytical Results			
Analyte	Result µg/L	Report Limit µg/L	Flags
C_5-C_8 Aliphatics**	BQL	100	
C_9-C_{12} Aliphatics**	BQL	100	
C_9-C_{10} Aromatics**	BQL	100	

	Percent Recovery	Flags	Limits Lower	Limits Upper
Surrogate % Recovery - PID	103		70	130
Surrogate % Recovery - FID	101		70	130

* = 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 and are unadjusted for individual analytes.

Lab Info: g128-2490-2d	Lab Info: g128-2490-2d
FID Info: VP012210/028F0101.D	PID Info: VP012210/028R0101.D

Reviewed By: _____

VPH (Aliphatics/Aromatics) Laboratory Reporting Form

Client Name: Richard Catlin & Associates

Project Name: TT-Sites

Sample Information	
Sample Identification	TT2117-TW01
Sample Matrix	Water
Collection Option (for Soil)*	NA
Date Collected	01/18/10 13:00
Date Received	01/19/10
Date Extracted	01/22/10 22:27 - 01/22/10 22:27
Date Analyzed	01/22/10 22:27 - 01/22/10 22:27
Dry Weight	NA
Dilution Factor	1 - 1

Analytical Results			
Analyte	Result µg/L	Report Limit µg/L	Flags
C_5-C_8 Aliphatics**	BQL	100	
C_9-C_{12} Aliphatics**	283	100	
C_9-C_{10} Aromatics**	571	100	

	Percent Recovery	Flags	Limits Lower	Limits Upper
Surrogate % Recovery - PID	113		70	130
Surrogate % Recovery - FID	108		70	130

* = 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 and are unadjusted for individual analytes.

Lab Info: g128-2490-3d	Lab Info: g128-2490-3d
FID Info: VP012210/029F0101.D	PID Info: VP012210/029R0101.D

Reviewed By:

VPH (Aliphatics/Aromatics) Laboratory Reporting Form

Client Name: Richard Catlin & Associates

Project Name: TT-Sites

Sample Information	
Sample Identification	TT2103-TW01
Sample Matrix	Water
Collection Option (for Soil)*	NA
Date Collected	01/18/10 14:00
Date Received	01/19/10
Date Extracted	01/22/10 22:54 - 01/22/10 22:54
Date Analyzed	01/22/10 22:54 - 01/22/10 22:54
Dry Weight	NA
Dilution Factor	1 - 1

Analytical Results			
Analyte	Result µg/L	Report Limit µg/L	Flags
C_5-C_8 Aliphatics**	BQL	100	
C_9-C_{12} Aliphatics**	BQL	100	
C_9-C_{10} Aromatics**	BQL	100	

	Percent Recovery	Flags	Limits Lower	Limits Upper
Surrogate % Recovery - PID	105		70	130
Surrogate % Recovery - FID	103		70	130

* = 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 and are unadjusted for individual analytes.

Lab Info: g128-2490-4d	Lab Info: g128-2490-4d
FID Info: VP012210/030F0101.D	PID Info: VP012210/030R0101.D

Reviewed By: _____

VPH (Aliphatics/Aromatics) Laboratory Reporting Form

Client Name: Richard Catlin & Associates

Project Name: TT-Sites

Sample Information	
Sample Identification	TT2953-TW01
Sample Matrix	Water
Collection Option (for Soil)*	NA
Date Collected	01/18/10 15:30
Date Received	01/19/10
Date Extracted	01/22/10 23:21 - 01/22/10 23:21
Date Analyzed	01/22/10 23:21 - 01/22/10 23:21
Dry Weight	NA
Dilution Factor	1 - 1

Analytical Results			
Analyte	Result µg/L	Report Limit µg/L	Flags
C_5-C_8 Aliphatics**	BQL	100	
C_9-C_{12} Aliphatics**	105	100	
C_9-C_{10} Aromatics**	334	100	

	Percent Recovery	Flags	Limits Lower	Limits Upper
Surrogate % Recovery - PID	106		70	130
Surrogate % Recovery - FID	103		70	130

* = 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 and are unadjusted for individual analytes.

Lab Info: g128-2490-5d	Lab Info: g128-2490-5d
FID Info: VP012210/031F0101.D	PID Info: VP012210/031R0101.D

Reviewed By: _____

Attachment 2

VPH Laboratory Reporting Form

Calibration and QA/QC Information

FID Initial Calibration Date: 12/04/09 PID Initial Calibration Date: 12/04/09

Calibration Ranges and Limits

Range	MDL (µg/L)	MDL (mg/Kg)	ML (µg/L)	ML (mg/Kg)	RL (µg/L)	RL (mg/Kg)
C_5-C_8 Aliphatics	2.02	0.175	6.42	0.557	100	10
C_9-C_{12} Aliphatics	1.51	0.118	4.80	0.375	100	10
C_9-C_{10} Aromatics	0.902	0.132	2.87	0.420	100	10

Calibration Concentration Levels

Range	Levels (µg/L)	Levels (mg/Kg)	%RSD if CF r if LR	Method of Quantitation
C_5-C_8 Aliphatics	10	0.8	15.00	Calibration Factor
	50	4		
	100	8		
	200	16		
	500	40		
C_9-C_{12} Aliphatics	10	0.8	0.99	Linear Regression
	50	4		
	100	8		
	200	16		
	500	40		
C_9-C_{10} Aromatics	10	0.8	22.39	Calibration Factor
	50	4		
	100	8		
	200	16		
	500	40		

Calibration Check Date: 01/22/10 Filename: VP012210/002F0101.d

Calibration Check

Range	Levels (µg/L)	Levels (mg/Kg)	%Difference if CF %Drift if LR	Limits
C_5-C_8 Aliphatics	200	16	11.5	±25%
C_9-C_{12} Aliphatics	200	16	-9.0	±25%
C_9-C_{10} Aromatics	200	16	22.4	±25%

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

Attachment 2

VPH Laboratory Reporting Form

Calibration and QA/QC Information

FID Initial Calibration Date: 12/04/09 PID Initial Calibration Date: 12/04/09

Calibration Ranges and Limits

Range	MDL (µg/L)	MDL (mg/Kg)	ML (µg/L)	ML (mg/Kg)	RL (µg/L)	RL (mg/Kg)
C_5-C_8 Aliphatics	2.02	0.175	6.42	0.557	100	10
C_9-C_{12} Aliphatics	1.51	0.118	4.80	0.375	100	10
C_9-C_{10} Aromatics	0.902	0.132	2.87	0.420	100	10

Calibration Concentration Levels

Range	Levels (µg/L)	Levels (mg/Kg)	%RSD if CF r if LR	Method of Quantitation
C_5-C_8 Aliphatics	10	0.8	15.00	Calibration Factor
	50	4		
	100	8		
	200	16		
	500	40		
C_9-C_{12} Aliphatics	10	0.8	0.99	Linear Regression
	50	4		
	100	8		
	200	16		
	500	40		
C_9-C_{10} Aromatics	10	0.8	22.39	Calibration Factor
	50	4		
	100	8		
	200	16		
	500	40		

Calibration Check Date: 01/22/10 Filename: VP012210/036F0101.d

Calibration Check

Range	Levels (µg/L)	Levels (mg/Kg)	%Difference if CF %Drift if LR	Limits
C_5-C_8 Aliphatics	200	16	-1.3	±25%
C_9-C_{12} Aliphatics	200	16	-18.7	±25%
C_9-C_{10} Aromatics	200	16	18.0	±25%

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

Attachment 2

VPH Laboratory Reporting Form

Calibration and QA/QC Information

FID Initial Calibration Date: 12/04/09 PID Initial Calibration Date: 12/04/09

Calibration Ranges and Limits

Range	MDL (µg/L)	MDL (mg/Kg)	ML (µg/L)	ML (mg/Kg)	RL (µg/L)	RL (mg/Kg)
C_5-C_8 Aliphatics	2.02	0.175	6.42	0.557	100	10
C_9-C_{12} Aliphatics	1.51	0.118	4.80	0.375	100	10
C_9-C_{10} Aromatics	0.902	0.132	2.87	0.420	100	10

Calibration Concentration Levels

Range	Levels (µg/L)	Levels (mg/Kg)	%RSD if CF r if LR	Method of Quantitation
C_5-C_8 Aliphatics	10	0.8	15.00	Calibration Factor
	50	4		
	100	8		
	200	16		
	500	40		
C_9-C_{12} Aliphatics	10	0.8	0.99	Linear Regression
	50	4		
	100	8		
	200	16		
	500	40		
C_9-C_{10} Aromatics	10	0.8	22.39	Calibration Factor
	50	4		
	100	8		
	200	16		
	500	40		

Calibration Check Date: 01/22/10 Filename: VP012210/046F0101.d

Calibration Check

Range	Levels (µg/L)	Levels (mg/Kg)	%Difference if CF %Drift if LR	Limits
C_5-C_8 Aliphatics	200	16	1.3	±25%
C_9-C_{12} Aliphatics	200	16	-17.3	±25%
C_9-C_{10} Aromatics	200	16	22.7	±25%

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

EPH (Aliphatics/Aromatics) Laboratory Reporting Form

Client Name: Richard Catlin & Associates

Project Name: TT-Sites

Sample Information	
Sample Identification	TT2506-TW01
Sample Matrix	Water
Date Collected	01/18/10 11:45
Date Received	01/19/10
Date Extracted	01/19/10
Date Analyzed	01/22/10 04:35 - 01/22/10 05:03
Dry Weight	NA
Dilution Factor	1 - 1
Initial Volume (mL)	847
Final Volume (mL)	5

Analytical Results			
Analytes**	Result µg/L	Report Limit µg/L	Flags
C9-C18 Aliphatics	BQL	100	
C19-C36 Aliphatics	BQL	100	
C11-C22 Aromatics	210	100	

Surrogates	Percent Recovery	Flags	Limits	
			Lower	Upper
Aliphatic (tricosane)	93.9		40	140
Aromatic (ortho-terphenyl)	82.7		40	140
Fractionation 1 (2-bromonaphthalene)	95.3		40	140
Fractionation 2 (2-fluorobiphenyl)	97.2		40	140

Lab Info: G128-2490-1L	Lab Info: G128-2490-1L
Aliphatic: EP012110/029F2701.D	Aromatic: EP012110/030F2801.D

Reviewed By: 

EPH (Aliphatics/Aromatics) Laboratory Reporting Form

Client Name: Richard Catlin & Associates

Project Name: TT-Sites

Sample Information	
Sample Identification	TT2125-TW01
Sample Matrix	Water
Date Collected	01/18/10 15:00
Date Received	01/19/10
Date Extracted	01/19/10
Date Analyzed	01/22/10 05:31 - 01/22/10 08:16
Dry Weight	NA
Dilution Factor	1 - 1
Initial Volume (mL)	839
Final Volume (mL)	5

Analytical Results			
Analytes**	Result µg/L	Report Limit µg/L	Flags
C9-C18 Aliphatics	BQL	100	
C19-C36 Aliphatics	BQL	100	
C11-C22 Aromatics	BQL	100	

Surrogates	Percent Recovery	Flags	Limits	
			Lower	Upper
Aliphatic (tricosane)	21.4	****	40	140
Aromatic (ortho-terphenyl)	90.3		40	140
Fractionation 1 (2-bromonaphthalene)	98.5		40	140
Fractionation 2 (2-fluorobiphenyl)	101		40	140

Lab Info: G128-2490-2L	Lab Info: G128-2490-2L
Aliphatic: EP012110/031F2901.D	Aromatic: EP012110/032F0101.D

Reviewed By: _____

EPH (Aliphatics/Aromatics) Laboratory Reporting Form

Client Name: Richard Catlin & Associates

Project Name: TT-Sites

Sample Information	
Sample Identification	TT2117-TW01
Sample Matrix	Water
Date Collected	01/18/10 13:00
Date Received	01/19/10
Date Extracted	01/19/10
Date Analyzed	01/22/10 19:35 - 01/22/10 20:04
Dry Weight	NA
Dilution Factor	1 - 1
Initial Volume (mL)	890
Final Volume (mL)	5

Analytical Results			
Analytes**	Result µg/L	Report Limit µg/L	Flags
C9-C18 Aliphatics	BQL	100	
C19-C36 Aliphatics	BQL	100	
C11-C22 Aromatics	379	100	

Surrogates	Percent Recovery	Flags	Limits	
			Lower	Upper
Aliphatic (tricosane)	90.5		40	140
Aromatic (ortho-terphenyl)	76.4		40	140
Fractionation 1 (2-bromonaphthalene)	94.9		40	140
Fractionation 2 (2-fluorobiphenyl)	98.9		40	140

Lab Info: G128-2490-3L	Lab Info: G128-2490-3L
Aliphatic: EP012210/007F0401.D	Aromatic: EP012210/008F0501.D

Reviewed By: _____

EPH (Aliphatics/Aromatics) Laboratory Reporting Form

Client Name: Richard Catlin & Associates

Project Name: TT-Sites

Sample Information	
Sample Identification	TT2103-TW01
Sample Matrix	Water
Date Collected	01/18/10 14:00
Date Received	01/19/10
Date Extracted	01/19/10
Date Analyzed	01/22/10 20:32 - 01/22/10 21:00
Dry Weight	NA
Dilution Factor	1 - 1
Initial Volume (mL)	894
Final Volume (mL)	5

Analytical Results			
Analytes**	Result µg/L	Report Limit µg/L	Flags
C9-C18 Aliphatics	BQL	100	
C19-C36 Aliphatics	BQL	100	
C11-C22 Aromatics	BQL	100	

Surrogates	Percent Recovery	Flags	Limits Lower	Limits Upper
Aliphatic (tricosane)	95.0		40	140
Aromatic (ortho-terphenyl)	82.2		40	140
Fractionation 1 (2-bromonaphthalene)	97.7		40	140
Fractionation 2 (2-fluorobiphenyl)	101		40	140

Lab Info: G128-2490-4L	Lab Info: G128-2490-4L
Aliphatic: EP012210/009F0601.D	Aromatic: EP012210/010F0701.D

Reviewed By: 

EPH (Aliphatics/Aromatics) Laboratory Reporting Form

Client Name: Richard Catlin & Associates

Project Name: TT-Sites

Sample Information	
Sample Identification	TT2953-TW01
Sample Matrix	Water
Date Collected	01/18/10 15:30
Date Received	01/19/10
Date Extracted	01/19/10
Date Analyzed	01/22/10 21:28 - 01/22/10 21:57
Dry Weight	NA
Dilution Factor	1 - 1
Initial Volume (mL)	902
Final Volume (mL)	5

Analytical Results			
Analytes**	Result µg/L	Report Limit µg/L	Flags
C9-C18 Aliphatics	BQL	100	
C19-C36 Aliphatics	BQL	100	
C11-C22 Aromatics	293	100	

Surrogates	Percent Recovery	Flags	Limits	
			Lower	Upper
Aliphatic (tricosane)	92.3		40	140
Aromatic (ortho-terphenyl)	89.3		40	140
Fractionation 1 (2-bromonaphthalene)	96.9		40	140
Fractionation 2 (2-fluorobiphenyl)	99.1		40	140

Lab Info: G128-2490-5L	Lab Info: G128-2490-5L
Aliphatic: EP012210/011F0801.D	Aromatic: EP012210/012F0901.D

Reviewed By: _____

Attachment 3

EPH Laboratory Reporting Form

Calibration and QA/QC Information

Initial Calibration Date: 10/06/09

Calibration Ranges and Limits

Range	MDL (02/15/08) (µg/L)	MDL (02/11/08) (mg/Kg)	ML (µg/L)	ML (mg/Kg)	RL (µg/L)	RL (mg/Kg)
C9-C18 Aliphatics	1.66	0.274	5.28	0.871	100	10
C19-C36 Aliphatics	2.79	0.201	8.87	0.639	100	10
C11-C22 Aromatics	2.64	0.110	8.40	0.350	100	10

Calibration Concentration Levels

Range	Levels (µg/L)	Levels (mg/Kg)	%RSD if CF r if LR	Method of Quantitation
C_9-C_{18} Aliphatics	200	33.3	12.22	Calibration Factor
	100	16.7		
	50	8.33		
	25	4.17		
	5	0.833		
C_{19}-C_{36} Aliphatics	200	33.3	8.95	Calibration Factor
	100	16.7		
	50	8.33		
	25	4.17		
	5	0.833		
C_{11}-C_{22} Aromatics	200	33.3	3.21	Calibration Factor
	100	16.7		
	50	8.33		
	25	4.17		
	5	0.833		

Calibration Check Date: 01/21/10, 01/22/10

Filenames: ep012110/021f1901.d, ep012110/022f2001.d

Calibration Check

Range	Levels (µg/L)	Levels (mg/Kg)	%Difference if CF %Drift if LR	Limits
C9-C18 Aliphatics	100	16.7	17.8	≤±25%
C19-C36 Aliphatics	100	16.7	20.0	≤±25%
C11-C22 Aromatics	100	16.7	3.5	≤±25%

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

Attachment 3

EPH Laboratory Reporting Form

Calibration and QA/QC Information

Initial Calibration Date: 10/06/09

Calibration Ranges and Limits

Range	MDL (02/15/08) (µg/L)	MDL (02/11/08) (mg/Kg)	ML (µg/L)	ML (mg/Kg)	RL (µg/L)	RL (mg/Kg)
C9-C18 Aliphatics	1.66	0.274	5.28	0.871	100	10
C19-C36 Aliphatics	2.79	0.201	8.87	0.639	100	10
C11-C22 Aromatics	2.64	0.110	8.40	0.350	100	10

Calibration Concentration Levels

Range	Levels (µg/L)	Levels (mg/Kg)	%RSD if CF r if LR	Method of Quantitation
C_9-C_{18} Aliphatics	200	33.3	12.22	Calibration Factor
	100	16.7		
	50	8.33		
	25	4.17		
	5	0.833		
C_{19}-C_{36} Aliphatics	200	33.3	8.95	Calibration Factor
	100	16.7		
	50	8.33		
	25	4.17		
	5	0.833		
C_{11}-C_{22} Aromatics	200	33.3	3.21	Calibration Factor
	100	16.7		
	50	8.33		
	25	4.17		
	5	0.833		

Calibration Check Date: 01/22/10 Filenames: ep012210/002f0201.d

01/22/10 ep012210/001f0101.d

Calibration Check

Range	Levels (µg/L)	Levels (mg/Kg)	%Difference if CF %Drift if LR	Limits
C9-C18 Aliphatics	100	16.7	17.4	≤±25%
C19-C36 Aliphatics	100	16.7	18.8	≤±25%
C11-C22 Aromatics	100	16.7	-1.1	≤±25%

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

Attachment 3

EPH Laboratory Reporting Form

Calibration and QA/QC Information

Initial Calibration Date: 10/06/09

Calibration Ranges and Limits

Range	MDL (02/15/08) (µg/L)	MDL (02/11/08) (mg/Kg)	ML (µg/L)	ML (mg/Kg)	RL (µg/L)	RL (mg/Kg)
C9-C18 Aliphatics	1.66	0.274	5.28	0.871	100	10
C19-C36 Aliphatics	2.79	0.201	8.87	0.639	100	10
C11-C22 Aromatics	2.64	0.110	8.40	0.350	100	10

Calibration Concentration Levels

Range	Levels (µg/L)	Levels (mg/Kg)	%RSD if CF r if LR	Method of Quantitation
C_9-C_{18} Aliphatics	200	33.3	12.22	Calibration Factor
	100	16.7		
	50	8.33		
	25	4.17		
	5	0.833		
C_{19}-C_{36} Aliphatics	200	33.3	8.95	Calibration Factor
	100	16.7		
	50	8.33		
	25	4.17		
	5	0.833		
C_{11}-C_{22} Aromatics	200	33.3	3.21	Calibration Factor
	100	16.7		
	50	8.33		
	25	4.17		
	5	0.833		

Calibration Check Date: 01/22/10, 01/23/10

Filenames: ep012210/025f2201.d, ep012210/026f2301.d

Calibration Check

Range	Levels (µg/L)	Levels (mg/Kg)	%Difference if CF %Drift if LR	Limits
C9-C18 Aliphatics	100	16.7	-3.7	≤±25%
C19-C36 Aliphatics	100	16.7	8.6	≤±25%
C11-C22 Aromatics	100	16.7	1.3	≤±25%

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

CHAIN OF CUSTODY RECORD
SGS North America Inc.

Locations Nationwide
- Alaska
- Maryland
- New Jersey
- New York
- North Carolina
- Ohio

www.us.sgs.com

096310

(1)
CLIENT: CATLIN ENG. & SCI
CONTACT: JEFF BECKEM PHONE NO:(910) 452-5861
PROJECT: TT-SITES SITE/PWSID#:
REPORTS TO: JEFF BECKEM FAX NO.:( )
INVOICE TO: CATLIN ATTN: SHEILA SMITH QUOTE #: NEW DOD RATE
P.O. NUMBER: 100119-01

SGS Reference: G128-2490

PAGE 1 OF 1

(2)

LAB NO.	SAMPLE IDENTIFICATION	DATE	TIME	MATRIX	No CONTAINERS	SAMPLE TYPE (C=COMP G=GRAB)	Preservatives Used	HCL	N/A	HCL	HCL						REMARKS
							Analysis Required (3)	EPA 602 + MTBE	625 BNA + TICS	MADEP EPH	MADEP VPH						
	TT2506-TW01	1-18-10	1145	GW	9	3 VOL		✓	✓	–	✓						• EDD SUMMARY
	TT2125-TW01		1500					✓	✓	–	✓						FORMAT
	TT2117-TW01		1300					✓	–	✓	✓						
	TT2103-TW01		1400					✓	–	–	✓						• PLS. REPORT
	TT2953-TW01		1530					✓	✓	✓	✓						LOW RUNS

(5)

Collected/Relinquished By:(1)	Date	Time	Received By:
	1-19-10	0925	
Relinquished By: (2)	Date	Time	Received By:
Relinquished By: (3)	Date	Time	Received By:
Relinquished By: (4)	Date	Time	Received By:

(4)

Shipping Carrier:
Shipping Ticket No:
Samples Received Cold? (Circle) YES NO
Temperature°C: 4.1, 5.5, 4.8°C
Special Deliverable Requirements:
Chain of Custody Seal: (Circle) INTACT BROKEN ABSENT
Special Instructions:
Requested Turnaround Time:
☒ RUSH 1-26-10 (Date Needed) ☐ STD

☐ 200 W. Potter Drive Anchorage, AK 99518 Tel: (907) 562-2343 Fax: (907) 561-5301
☐ 5500 Business Drive Wilmington, NC 28405 Tel: (910) 350-1903 Fax: (910) 350-1557

White - Retained by Lab
Pink - Retained by Client

SGS North America, Inc.

WELL CONSTRUCTION AND WELL ABANDONMENT RECORDS

WELL LOG

CATLIN Engineers and Scientists

209-112 Wilmington, NC

SHEET 1 OF 1

PROJECT NO.: 209-112	STATE: NC	COUNTY: Onslow	LOCATION: Jacksonville
PROJECT NAME: TT-2089/TT-Pond/TT-Drainage		LOGGED BY: Steve Tyler	WELL ID: TT2103-TW01
		DRILLER: William J. Miller	
NORTHING: 3846507.4	EASTING: 282230.6	CREW: NA	
SYSTEM: UTM NAD83 (m)	BORING LOCATION: Tarrawa Terrace		T.O.C. ELEV.: NA
DRILL MACHINE: CME 45B ATV	METHOD: HSA	0 HOUR DTW: 8.0	TOTAL DEPTH: 14.0
START DATE: 1/13/10	FINISH DATE: 1/13/10	24 HOUR DTW: 7.6	WELL DEPTH: 13.0

DEPTH	BLOW COUNT 6in / 6in / 6in / 6in	OVA (ppm)	LAB.	MOIS	LOG	SOIL AND ROCK DESCRIPTION	WELL DETAIL
0.0						LAND SURFACE	2.0 / 0.0
						(SM) - Olive gray, Silty f. SAND to Sandy SILT. Fill.	1" Sch. 40 PVC; 2.0; 3.0
10.0						(SM) - Light gray, Silty f. SAND to Sandy SILT. Native.	1" Slot .010 Sch. 40 PVC; 13.0 / 13.0
14.0						Boring Terminated at Depth 14.0 ft	

Bentonite Pellets #2 Medium Sand

CATLIN BORING LOG 209-112 TT-2089-POND-DRAINAGE.GPJ CATLIN.GDT 1/27/10

NON RESIDENTIAL WELL CONSTRUCTION RECORD

North Carolina Department of Environment and Natural Resources - Division of Water Quality

WELL CONTRACTOR CERTIFICATION #: 2927

1. WELL CONTRACTOR:
William J. Miller
Well Contractor (Individual) Name
CATLIN Engineers and Scientists
Well Contractor Company Name
220 Old Dairy Road
Street Address
Wilmington | North Carolina | 28405
City or Town | State | Zip Code
(910) - 452-5861
Area code - Phone number

2. WELL INFORMATION
WELL CONSTRUCTION PERMIT #: N/A
OTHER ASSOCIATED PERMIT # (if applicable): N/A
SITE WELL ID # (if applicable) TT2103-TW01

3. WELL USE (Check One Box): Monitoring [X] Municipal/Public [ ] Industrial/Commercial [ ] Agricultural [ ] Recovery [ ] Injection [ ] Irrigation [ ] Other [ ] (list use): _____

DATE DRILLED: January 13, 2010

4. WELL LOCATION:
Tarawa Terrace Housing Area,
(Street Name, Numbers, Community, Subdivision, Lot No., Parcel, Zip Code)
CITY: Jacksonville COUNTY: Onslow
TOPOGRAPHIC / LAND SETTING (check appropriate box)
[ ] Slope [ ] Valley [X] Flat [ ] Ridge [ ] Other: _____
LATITUDE: 34.73744612 DD
LONGITUDE: 77.37865615 DD
Latitude/longitude source: [X] GPS [ ] Topo. map
(Location of well must be shown on a USGS topo map and attached to this form if not using a GPS.)

5. FACILITY (Name of the business where the well is located.)
N/A | N/A
Facility Name | Facility ID # (if applicable)
Tarawa Terrace Housing Area
Street Address
Jacksonville | NC
City or Town | State | Zip Code
Mr. Nick Schultz
Contact Name
Attn: I&E/ EMD/ EQB/ PSC Box 20004
Mailing Address
Camp Lejeune | NC | 28542-0004
City or Town | State | Zip Code
(910)- 451-5068
Area code - Phone number

6. WELL DETAILS:
a. **TOTAL DEPTH:** 13
b. **DOES WELL REPLACE EXISTING WELL?** YES [ ] NO [X]
c. **WATER LEVEL Below Top of Casing:** 7.58 FT.
(Use "+" if Above Top of Casing)

d. **TOP OF CASING IS** 2 FT. Above Land Surface*
* Top of casing terminated at/or below land surface may require a variance in accordance with 15A NCAC 2C.0118.
e. **YIELD (gpm):** N/A **METHOD OF TEST:** N/A
f. **DISINFECTION: Type** N/A **Amount:** N/A
g. **WATER ZONES** (depth):
Top _____ Bottom _____ Top _____ Bottom _____
Top _____ Bottom _____ Top _____ Bottom _____
Top _____ Bottom _____ Top _____ Bottom _____

7. CASING:

	Depth	Diameter	Thickness/ Weight	Material
Top 0	Bottom 3 Ft.	1 in.	Sch. 40	PVC
Top	Bottom Ft.	in.		
Top	Bottom Ft.	in.		

8. GROUT:

	Depth	Material	Method
Top	Bottom Ft.		
Top 1	Bottom 2 Ft.		
Top	Bottom Ft.		

9. SCREEN:

	Depth	Diameter	Slot Size	Material
Top 3	Bottom 13 Ft.	1 in.	Slot .010 in.	PVC
Top	Bottom Ft.	in.	in.	
Top	Bottom Ft.	in.	in.	

10. SAND/GRAVEL PACK:

	Depth	Size	Material
Top 2	Bottom 13 Ft.	#2 Medium	Torpedo Sand
Top	Bottom Ft.		
Top	Bottom Ft.		

11. DRILLING LOG

Top	Bottom	Formation Description
		SEE ATTACHED

12. REMARKS:
TEMPORARY TYPE II Abandoned subsequent to sampling.

I DO HEREBY CERTIFY THAT THIS WELL WAS CONSTRUCTED IN ACCORDANCE WITH 15A NCAC 2C, WELL CONSTRUCTION STANDARDS, AND THAT A COPY OF THIS RECORD HAS BEEN PROVIDED TO THE WELL OWNER.

SIGNATURE OF CERTIFIED WELL CONTRACTOR — DATE: 1/27/2010

William J. Miller
PRINTED NAME OF PERSON CONSTRUCTING THE WELL

Submit within 30 days of completion to: Division of Water Quality - Information Processing, 1617 Mail Service Center, Raleigh, NC 27699-1617, Phone No. (919) 807-6300

Modified from Form GW-1b Rev. 2/09

WELL ABANDONMENT RECORD

North Carolina Department of Environment and Natural Resources - Division of Water Quality

WELL CONTRACTOR CERTIFICATION #: 2927

CATLIN PROJECT NO. 209-112

1. WELL CONTRACTOR:

William J. Miller
Well Contractor (Individual) Name

CATLIN Engineers and Scientists
Well Contractor Company Name

STREET ADDRESS 220 Old Dairy Road

Wilmington | North Carolina | 28405
City or Town | State | Zip Code

(910) - 452-5861
Area code - Phone number

2. WELL INFORMATION

SITE WELL ID # (if applicable): TT2103-TW01
STATE WELL PERMIT # (if applicable): N.A.
COUNTY WELL PERMIT # (if applicable): N.A.
DWQ or OTHER PERMIT # (if applicable):
WELL USE (Check Applicable Box): Monitoring ☒ Residential ☐
Municipal/Public ☐ Industrial/Commercial ☐ Agricultural ☐
Recovery ☐ Injection ☐ Irrigation ☐
Other (list use): _____

3. WELL LOCATION:

COUNTY: Onslow QUADRANGLE:
NEAREST TOWN: Jacksonville
Tarawa Terrace Housing Area,
(Street/Road Name, Number, Community, Subdivision, Lot No., Parcel, Zip Code)

TOPOGRAPHIC / LAND SETTING
Slope ☐ Valley ☐ Flat ☒ Ridge ☐ Other: _____

LATITUDE: 34.73744612
LONGITUDE: 77.37865615
May be in degrees, minutes, seconds, or in a decimal

Latitude/longitude source: ☒ GPS ☐ Topo. map
(Location of well must be shown on a USGS topo map and attached to this form if not using a GPS.)

4a. FACILITY - The name of the business where the well is located. Complete 4a and 4b. (If a residential well, skip 4a; complete 4b, well owner information only)

FACILITY ID #(if applicable) Not Applicable

NAME OF FACILITY:

STREET ADDRESS: Tarawa Terrace Housing Area

Jacksonville | North Carolina
City or Town | State | Zip Code

4b. CONTACT PERSON/WELL OWNER:

NAME: Mr. Nick Schultz

STREET ADDRESS: Attn: I&E/ EMD/ EQB/ PSC Box 20004

Camp Lejeune | NC | 28542-0004
City or Town | State | Zip Code

(910) 451-5068
Area code - Phone number

5. WELL DETAILS:

a. Total Depth: 13 ft. Diameter: 1 in.
b. Water Level (Below Measuring Point): 7.58 ft.
Measuring point is 2.0 ft. above land surface

6. CASING:

	Length		Diameter	
a. Casing Depth (if known):	3	ft.	1	in.
b. Casing Removed:	5	ft.	1	in.

7. DISINFECTION: N/A
(Amount of 70% calcium hypochlorite used)

8. SEALING MATERIAL:

Neat Cement
Cement _____ lb.
Water _____ gal.

Sand Cement
Cement _____ lb.
Water _____ gal.

Bentonite
Bentonite 80 lb.
Type: Slurry _ Pellets X
Water _____ gal.

Other
Type material _____
Amount _____

9. EXPLAIN METHOD OF EMPLACEMENT OF MATERIAL:
Pulled well screen and casing, backfilled hole with bentonite pellets.

10. WELL DIAGRAM: Draw a detailed sketch of the well on the back of this form showing total depth, depth and diameter of screens (if any) remaining in the well, gravel interval, intervals of casing perforations, and depths and types of fill materials used.

11. DATE WELL ABANDONED 1/18/2010

I DO HEREBY CERTIFY THAT THIS WELL WAS ABANDONED IN ACCORDANCE WITH 15A NCAC 2C, WELL CONSTRUCTION STANDARDS, AND THAT A COPY OF THIS RECORD HAS BEEN PROVIDED TO THE WELL OWNER.

_____ 1/27/2010
SIGNATURE OF CERTIFIED WELL CONTRACTOR **DATE**

_____
SIGNATURE OF PRIVATE WELL OWNER ABANDONING THE WELL **DATE**
(The private well owner must be an individual who personally abandons his/her residential well in accordance with 15A NCAC 2C .0113)

William J. Miller
PRINTED NAME OF PERSON ABANDONING THE WELL

Submit a copy to the owner and the original to the Division of Water Quality within 30 days.
Attn: Information Management,1617 Mail Service Center - Raleigh, NC 27699167, Phone No. (919) 733-7015 ext 568.

Modified from Form GW-30 Rev. 5/06