Utility-Related Abatement Measure

Completion Report

Former GE Facility (RTN 3-29952)

Wilmington, Massachusetts

Submitted to:

Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup
205B Lowell Street
Wilmington, Massachusetts 01887

Prepared by:

Tetra Tech, Inc.
250 Andover Street, Suite 200
Wilmington, Massachusetts 01887

February 2012

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF APPENDICES

1.0 INTRODUCTION

In accordance with 310 Code of Massachusetts Regulations (CMR) 40.0466 of the Massachusetts Contingency Plan (MCP), Tetra Tech has prepared the following Utility-Related Abatement Measure (URAM) Completion Report for the excavation and off-site disposal of soil contaminated with oil and hazardous material from the Former General Electric (GE) Facility located at 50 Fordham Road in Wilmington, Massachusetts (Figure 1). This URAM completion report addresses the utility-related construction and related soil management activities due to the relocation of buried electrical utilities associated with a demolition project for a portion of the adjacent building. This URAM Completion Report is being electronically filed to the Massachusetts Department of Environmental Protection (MassDEP) under a separate cover.

2.0 GENERAL DISPOSAL SITE INFORMATION

Potentially Responsible Party:	Lockheed Martin Corporation 6801 Rockledge Drive Bethesda, MD 20817 (Phone) 817-495-0251 (Fax) 817-762-4884
Site Owner:	Wilmington Realty Trust 434 Broadway Somerville, MA 02145
Disposal Site Address:	Former General Electric Site 50 Fordham Road Wilmington, MA 01887
Release Tracking Number(s):	RTN 3-29952 (3-00518)
Geographic Location:	Northing: 4714246 Easting: 324657
Licensed Site Professional (LSP):	Stephen S Parker (Phone) 978-474-8434

3.0 SITE DESCRIPTION

The site is a 13–acre parcel situated along Fordham Road in Wilmington, Massachusetts. Currently, the site contains wetlands, a sewage treatment plant and waste water treatment plant, paved parking areas, and a number of industrial buildings (see Figure 1).

The URAM was performed approximately 35 to 40 feet east of former Building 3, adjacent to the eastern parking lot, in approximately 60 linear feet of trench (See Figure 2).

BASE MAP FROM USGS QUADRANGLE SHEET: READING, MASSACHUSETTS, 1987

GRAPHIC SCALE
0 0.5 MILE 1 MILE

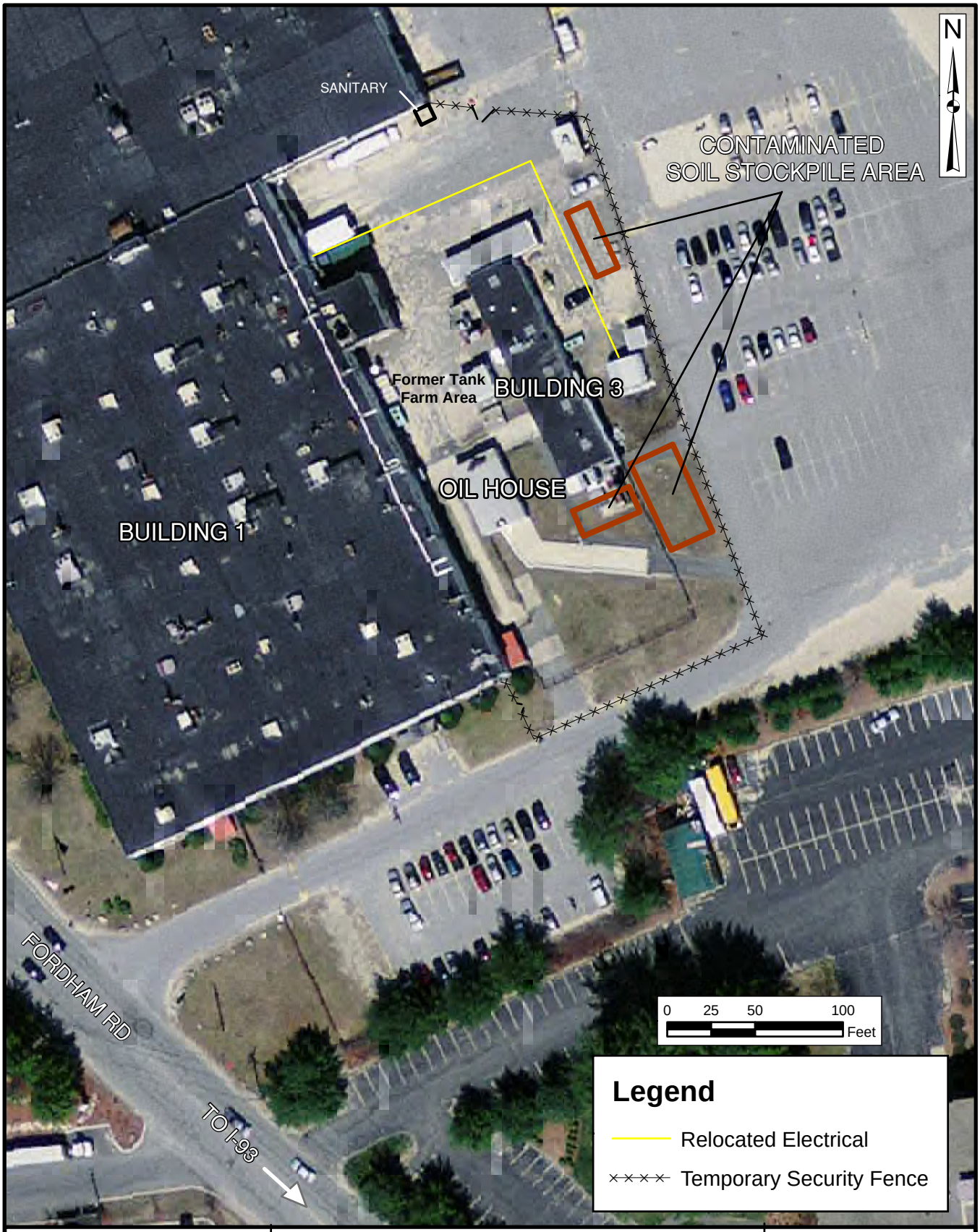
TETRA TECH
WWW.TETRATECH.COM
250 ANDOVER STREET SUITE 200
WILMINGTON MA, 01887
T: (978) 474-8400 | F: (978) 474-8499

SITE LOCUS MAP
FORMER GE SITE
50 FORDHAM ROAD
WILMINGTON, MASSACHUSETTS

DATE:	2/23/11
PROJECT NO.:	IC03346
DESIGNED BY:	S.VETERE
DRAWN BY:	M.ALROY
CHECKED BY:	S. PARKER
FIGURE NUMBER:	1

FILE:\03346\02A\
LOCKHEED_WILMINGTON_LOCUS.DWG

G:\GIS_ARCV\PROJECTS\CLEAN\KPC\50FORDHAM KPC/NEC/DWM 01/05/12



TETRA TECH

WWW.TETRATECH.COM

250 ANDOVER STREET SUITE 200
WILMINGTON, MA 01887
T: (978) 474-8400 I F: (978)-474-8499

SITE CONTROL PLAN
FORMER GE SITE
50 FORDHAM ROAD
WILMINGTON, MASSACHUSETTS

DATE:	01/05/12
PROJECT NO:	IC03346
PREPARED BY:	K. CALLAHAN
CHECKED BY:	S. NESBIT
FIGURE NUMBER:	2

G:\GIS_arcv\PROJECTS\CLEAN\KPC\50Fordham

4.0 SITE HISTORY

Prior to 1968, the property was used for gravel mining. From 1968 through 1970, the property was developed with the construction of three large buildings, one small building, a paved parking area, and a waste water treatment facility. GE Aerospace Instruments began to occupy the property buildings in 1970, and operated manufacturing and supported research and development departments until 1989. Portions of the site were subleased to Converse, Inc. (Converse) from 1973 to 1986, and to Hamilton Standard from 1983 to 1985. In August 1989, GE's operations were sold to Ametek, Inc. (TRC Environmental Corporation [TRC Environmental], 2001).

Based on historical topographic maps, the property was developed after 1965 and before 1979. Prior to 1965, the property appears to have been undeveloped land. No Sanborn Fire Insurance maps were available for this property (Environmental Data Resources [EDR], 2009).

5.0 UTILITY-RELATED ABAEMENT MEASURE DESCRIPTION

The URAM was conducted as part of a demolition project, a portion of which involved the relocation of electrical service to an existing on-site groundwater treatment building and parking lot light poles (see Figure 2).

A URAM Notification was provided to MassDEP April 29, 2011 to address the potential exposure of site workers to contaminated soils during the utility excavation. The contaminated soils are associated with the release of volatile organic compounds (VOCs) and petroleum hydrocarbons (Stoddard solvent) from historical site operations. The original release is currently being tracked under RTN 3-00518. Photographic documentation throughout the duration of the URAM is included in Appendix A.

The URAM notification was originally filed in recognition of the potential to encounter contaminated soils during subsurface work associated with the electrical service relocation. During trenching to the east of the former Building 3, soils impacted with petroleum constituents were encountered and stockpiled on site for characterization and off-site disposal.

Lockheed Martin has completed a Release Abatement Measure (RAM) under RTN 3-00518 to address soils contaminated with Stoddard solvent that were encountered beneath the slab of Building 3, which was demolished in early July 2011. A RAM plan for this soil removal project was prepared by Tetra Tech, Inc. (Tetra Tech) and submitted to MassDEP by TRC Environmental on June 22, 2011. A RAM plan addendum was submitted by TRC Environmental on August 17, 2011. A RAM Status Report was prepared by Tetra Tech and submitted to MassDEP by TRC Environmental on October 25, 2011. A RAM Completion Report is currently being prepared for RTN 3-00518, and will be submitted to MassDEP in accordance with 310 CMR 40.0445 of the MCP.

Air monitoring was performed daily during demolition and URAM related activities. Copies of the daily air monitoring sheets are located in Appendix B.

5.1 URAM Response Operations:

Subsurface work (i.e. trenching) for the electrical service relocation commenced on May 25, 2011. As outlined in the URAM Plan, soils removed from the electrical trench were field screened using a flame ionization detector (FID) to determine whether they had been impacted by the historical release of contaminants at the site. Figure 3 (on page 6) provides a summary of field screening results observed during trench excavation. No sidewall or bottom samples were collected from the trench, and the trench was backfilled with clean material originating from an off-site source as described in the previous section.

In total, approximately 150 cubic yards (yd^3) of soil, boulders, and asphalt were removed from the electrical trench and staged on site, consistent with the requirements set forth in the URAM Plan.

Materials removed from the trench included the following:

- Approximately 20 yd^3 of petroleum-impacted soils.
- Approximately 75 yd^3 of non-impacted soils.
- Approximately 40 yd^3 of boulders.
- Approximately 15 yd^3 of asphalt.

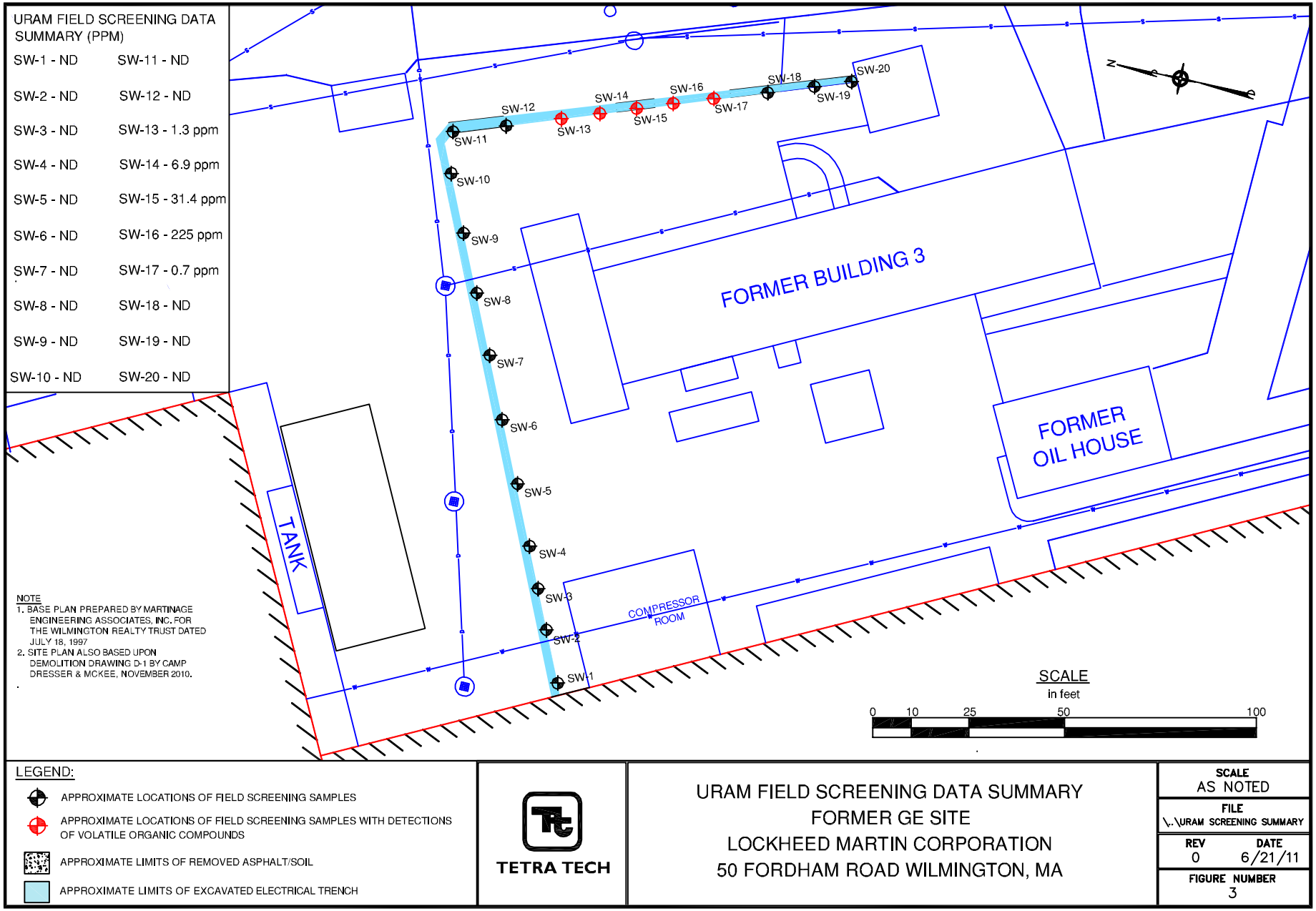
The petroleum-impacted soils recovered from the trench are believed to be associated with the historical release of Stoddard solvent from the adjacent release area tracked under RTN 3-00518.

Asphalt recovered from the trenching area was transported to the Aggregate Industries in Chelmsford, Massachusetts for recycling.

The URAM Plan specified the reuse of trenching spoils as backfill material for the trench. However, because this material contained a large percentage of oversized material, it was determined not to be suitable for use above the electrical conduit.

Backfilling of the electrical trench was completed on June 27, 2011. Therefore, approximately 120 tons of processed gravel was imported from Heffron's Materials in Wilmington, Massachusetts to backfill the electrical trench. A sample of this material was collected for laboratory analysis to verify its suitability for on-site reuse. The analytical data report for the imported fill is provided as Appendix C of this report.

The trench area was paved to complete the final site restoration. One 1.5-inch lift of compacted binder course asphalt and one 1.5-inch lift of compacted of finish course asphalt were placed and compacted to complete the site restoration for URAM related activities.


URAM FIELD SCREENING DATA SUMMARY (PPM)
SW-1 - ND
SW-2 - ND
SW-3 - ND
SW-4 - ND
SW-5 - ND
SW-6 - ND
SW-7 - ND
SW-8 - ND
SW-9 - ND
SW-10 - ND
SW-11 - ND
SW-12 - ND
SW-13 - 1.3 ppm
SW-14 - 6.9 ppm
SW-15 - 31.4 ppm
SW-16 - 225 ppm
SW-17 - 0.7 ppm
SW-18 - ND
SW-19 - ND
SW-20 - ND
SW-1
SW-2
SW-3
SW-4
SW-5
SW-6
SW-7
SW-8
SW-9
SW-10
SW-11
SW-12
SW-13
SW-14
SW-15
SW-16
SW-17
SW-18
SW-19
SW-20
FORMER BUILDING 3
FORMER OIL HOUSE
TANK
COMPRESSOR ROOM
N
NOTE
1. BASE PLAN PREPARED BY MARTINAGE ENGINEERING ASSOCIATES, INC. FOR THE WILMINGTON REALTY TRUST DATED JULY 18, 1997
2. SITE PLAN ALSO BASED UPON DEMOLITION DRAWING D-1 BY CAMP DRESSER & MCKEE, NOVEMBER 2010.
SCALE
in feet
0 10 25 50 100
LEGEND:
APPROXIMATE LOCATIONS OF FIELD SCREENING SAMPLES
APPROXIMATE LOCATIONS OF FIELD SCREENING SAMPLES WITH DETECTIONS OF VOLATILE ORGANIC COMPOUNDS
APPROXIMATE LIMITS OF REMOVED ASPHALT/SOIL
APPROXIMATE LIMITS OF EXCAVATED ELECTRICAL TRENCH
TETRA TECH
URAM FIELD SCREENING DATA SUMMARY
FORMER GE SITE
LOCKHEED MARTIN CORPORATION
50 FORDHAM ROAD WILMINGTON, MA
SCALE
AS NOTED
FILE
\..\URAM SCREENING SUMMARY
REV
0
DATE
6/21/11
FIGURE NUMBER
3

5.2 Management of Remediation Waste and Remedial Wastewater: As specified in the URAM Plan, impacted soils were stockpiled on 6-mil polyethylene sheeting, covered with 6-mil polyethylene sheeting, and surrounded with hay bales to prevent erosion and sedimentation until disposal could be arranged. The impacted soils recovered from the utility trench were stockpiled on site adjacent to soils excavated as part of the ongoing RAM.

The remediation waste generated under the URAM was excavated on June 21, 2011. The URAM soils were profiled along with the adjacent RAM soils for transportation and disposal at the Waste Management Grows North and Tullytown Waste Management facilities in Pennsylvania. Due to the consolidation of the URAM and RAM soils for the purpose of facilitating their profiling and transportation, the URAM soils exceeded the 120-day limit for on-site storage of remediation waste per 310 CMR 40.0030. However, the stockpiled soils were carefully maintained and were covered and protected from erosion in the interim. Petroleum-impacted soils from the URAM were transported and disposed of under the same waste profile as contaminated soils generated as a result of the RAM conducted under RTN 3-00518. Waste profile laboratory analysis for this material is provided in Attachment D of this report.

Groundwater was not encountered during trenching operations and no surface water was impacted by contaminated materials generated as a result of the URAM; therefore, no remedial wastewater required management under the URAM.

5.3 Transportation and Disposal of Remediation Waste

Approximately 20 yd^3 (27 tons) of contaminated soil (remediation waste) generated by the URAM was directly loaded into trucks for transport to the Grows North and Tullytown Waste Management facilities in Pennsylvania. Waste loading of remediation waste was performed on November 4, 2011. Shipping documentation was completed and accompanied each load. Bills of Lading, including signed attestation of shipment for the URAM, are included in Appendix E.

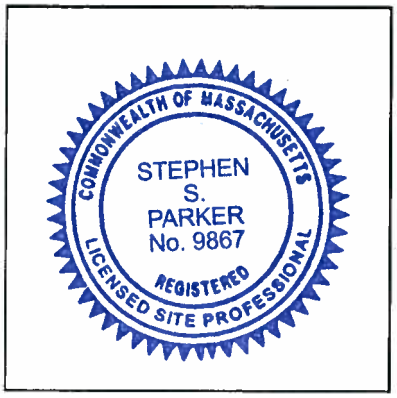
Transport vehicles equipped with sealed tailgates were used to transport the excavated soil. The top of the truck bed was covered and secured to prevent loss of material and rainfall infiltration. The wheels of all vehicles leaving the site were inspected to ensure control of contamination prior to leaving the work area. Following completion of the loading activities, the excavation and loading equipment were decontaminated.

6.0 LSP OPINION

It is the opinion of the LSP that this work has been conducted in accordance with the MCP, the approved RAM Plan, and RAM Plan Addendum, and this report has been prepared in accordance with 310 CMR 40.0466 with the exceptions/modifications as described herein.

X _____ 3/13/12

Stephen S. Parker Date:
LSP



7.0 REFERENCES

CDM, 2010. *Phase I Initial Site Investigation Report and Completion Statement, Former GE Facility*. January.

Environmental Data Resources (EDR), 2009. *The EDR Historical Topographic Map Report*. December.

Tetra Tech Inc. (Tetra Tech), 2011. Utility-related Abatement Measure Notification, Former General Electric Property, *RTN #* 3-29952, *50 Fordham Road , Wilmington, Massachusetts*. March

Tetra Tech Inc. (Tetra Tech), 2011. Utility-related Abatement Measure Status Report, Former General Electric Property, *RTN #* 3-29952, *50 Fordham Road , Wilmington, Massachusetts*. August

TRC Environmental Corporation (TRC Environmental), 2001. *Comprehensive Review of Groundwater Data, Former GE Facility, RTN #3-0518, Wilmington, Massachusetts*. September.

TRC Environmental Corporation (TRC Environmental), 2010. *Vapor Intrusion Investigation 2010, Former GE Facility, Wilmington, Massachusetts*. July.

TRC Environmental Corporation (TRC Environmental), 2011a. *Release Abatement Measure (RAM) Plan* . June.

TRC Environmental Corporation (TRC Environmental), 2011b. *Release Abatement Measure (RAM) Plan Addendum*. August.

TRC Environmental Corporation (TRC Environmental), 2011c. *Remedy Operation Status Report – Winter 2011, Former GE Facility, RTN #3-0518, Wilmington, Massachusetts.* March.

APPENDIX A

Photographic Log

Photographic Documentation
LMC Wilmington URAM Completion Report
50 Fordham Rd
Wilmington, Massachusetts
Project No. 112IC03346

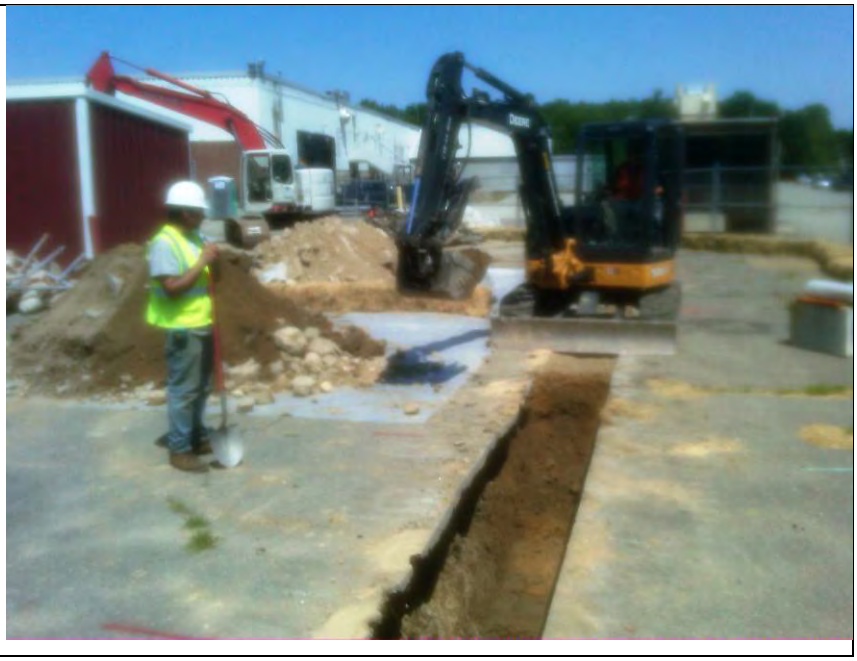
Photo: 1 **Description:** View of area of impacted soils within the electrical relocation trench excavation. **Orientation:** Facing North	

Photo: 2 **Description:** View of electrical relocation trench backfilling. **Orientation:** Facing West	

Photographic Documentation
LMC Wilmington Completion Report
50 Fordham Rd
Wilmington, Massachusetts
Project No. 112IC03346

Photo: 5 **Description:** View of electrical relocation trench backfilling and impacted soil stockpiles staged on and covered by 6 ml. polyethylene sheeting. **Orientation:** Facing East	

Photo: 6 **Description:** View of electrical relocation trench backfilling. **Orientation:** Facing West	

Photographic Documentation
LMC Wilmington Completion Report
50 Fordham Rd
Wilmington, Massachusetts
Project No. 112IC03346

Photo: 7 **Description:** View of electrical relocation trench asphalt installation. **Orientation:** Facing West	

Photo: 8 **Description:** View of electrical relocation trench asphalt installation. **Orientation:** Facing West	

Photographic Documentation
LMC Wilmington Completion Report
50 Fordham Rd
Wilmington, Massachusetts
Project No. 112IC03346

Photo: 27 **Description:** View of site upon completion of site restoration including loaming and seeding and asphalt installation. **Orientation:** Facing South	

APPENDIX B

Air Monitoring Daily Sheets

TETRA TECH INC.

LMC Wilmington Health and Safety Field Screening Log

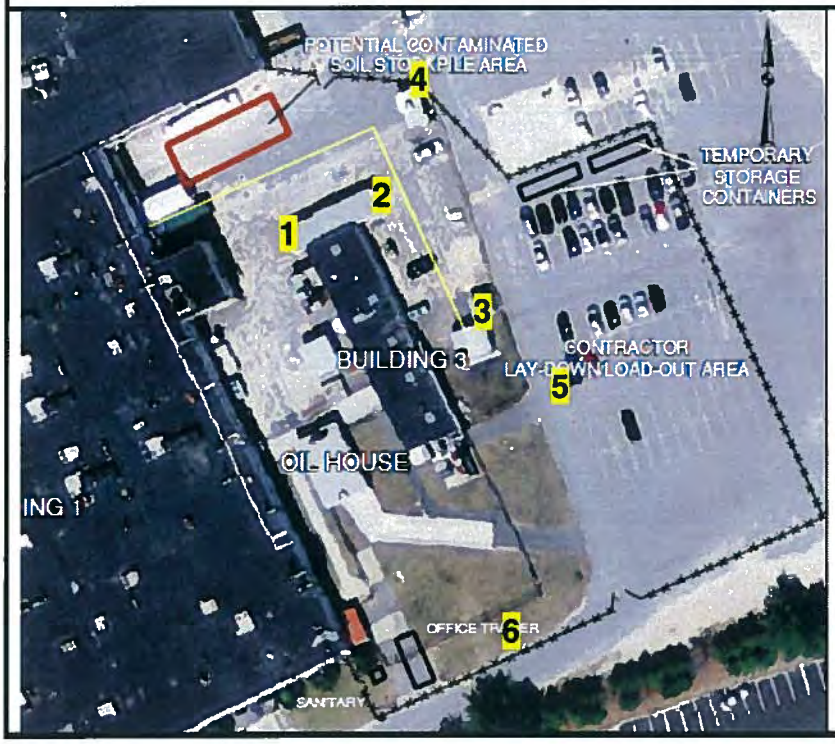
Project Site Name:	LMC Wilmington	**Date:**	5/25/11
Project No.:	112IC03346	**Recorded By:**	M. Airoy
Weather:	Clear 70's		
Subcontractor:	Tantara, Interstate		
Personnel:	Nick, Scott S, George, Eddie		

Field Screening Instruments/Action Levels/Units

PRD 1000 Particulate Monitor	Flame Ionization Detector
0.5 mg/m^3	1.25 ppm (5 min. sustained)

Field Screening Sample Station	1		2		3		4		5		6	
	P	F	P	F	P	F	P	F	P	F	P	F
Time												
13:00	0.005	0.0										
14:00			0.004	0.0								
15:00					0.004	0.0						

OBSERVATIONS/NOTES/FIELD SKETCH:



NO DETECTION OBSERVED ABOVE SITE SPECIFIC SCREENING LEVELS

- EH&S Screening began upon commencement of trenching

TETRA TECH INC.

LMC Wilmington Health and Safety Field Screening Log

Project Site Name:	LMC Wilmington	**Date:**	5/26/11
Project No.:	112IC03346	**Recorded By:**	M. Abbey
Weather:	60's / 80's		
Subcontractor:	TANTARA / INTERSTATE		
Personnel:	Scott S, Nik C, Bobby B, Eddie, George		

Field Screening Instruments/Action Levels/Units

PRD 1000 Particulate Monitor	Flame Ionization Detector
0.5 mg/m^3	1.25 ppm (5 min. sustained)

Field Screening Sample Station	1		2		3		4		5		6	
	P	F	P	F	P	F	P	F	P	F	P	F
Time												
0800	0.004	0.0										
0900			0.005	0.0								
10:00					0.002	0.0						
11:00							0.002	0.0				
12:00									0.002	0.0		
13:00											0.002	0.0
14:00	0.005	0.0										
15:00			0.005	0.0								

OBSERVATIONS/NOTES/FIELD SKETCH:

NO DETECTIONS OBSERVED ABOVE SITE SPECIFIC SCREENING LEVELS

TETRA TECH INC.

LMC Wilmington Health and Safety Field Screening Log

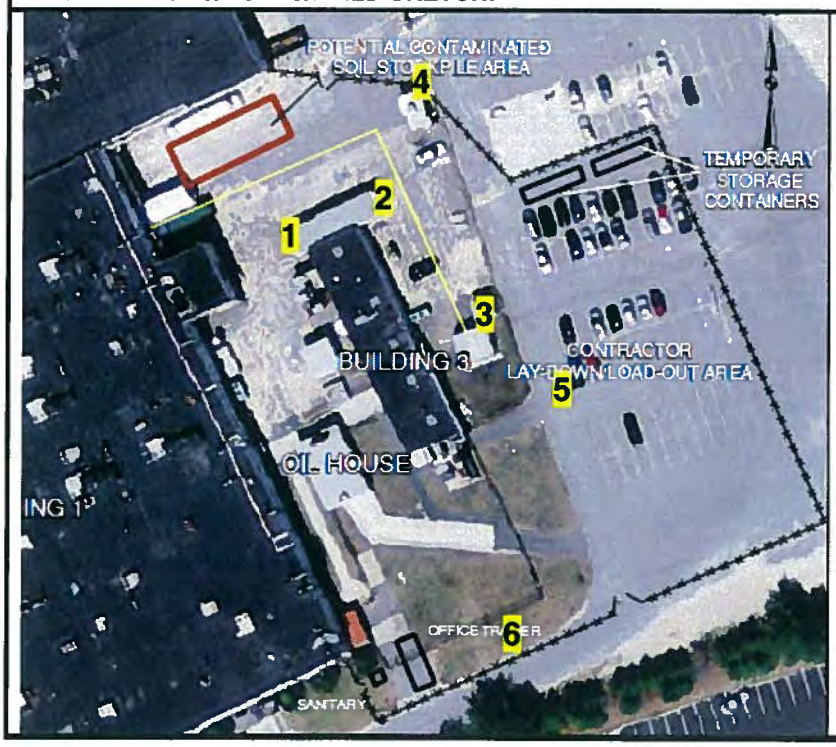
Project Site Name:	LMC Wilmington	**Date:**	6/20/11
Project No.:	112IC03346	**Recorded By:**	M. Alroy
Weather:	Clear 50's/80s		
Subcontractor:	Tetra Tech		
Personnel:	S. Scirioli, J. Ciben, D. Grunnell, G. Ryerman		

Field Screening Instruments/Action Levels/Units

PRD 1000 Particulate Monitor	Jerome Mercury Vapor Analyzer	Flame Ionization Detector
0.5 mg/m^3	0.05 mg/m^3	1.25 ppm (5 min. sustained)

Field Screening Sample Station	1			2			3			4			5			6		
	P	J	F	P	J	F	P	J	F	P	J	F	P	J	F	P	J	F
Time																		
0800	0.005	0.0	0.0															
0900				0.005	0.0	0.0												
10:00							0.004	0.0	0.0									
11:00										0.005	0.0	0.0						
12:00													0.004	0.0	0.0			
13:00																0.004	0.0	0.0
14:00	0.004	0.0	0.0															
15:00				0.004	0.0	0.0												

OBSERVATIONS/NOTES/FIELD SKETCH:



No detections observed above site specific screening levels

TETRA TECH INC.

LMC Wilmington Health and Safety Field Screening Log

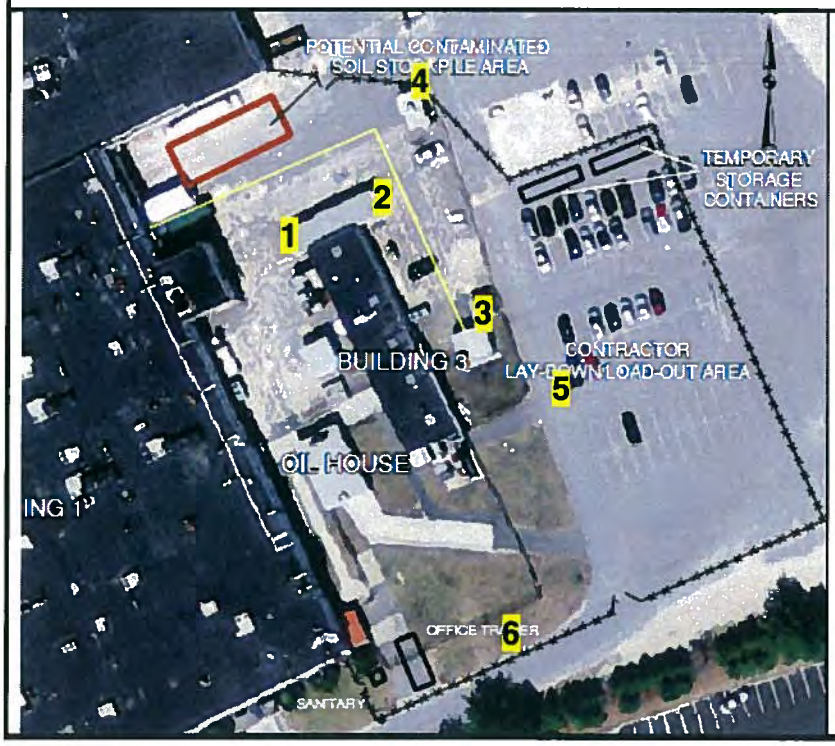
Project Site Name:	LMC Wilmington	**Date:**	6/21/11
Project No.:	112IC03346	**Recorded By:**	M. Atray
Weather:	CLEAR 50's | 80's		
Subcontractor:	TANTALO		
Personnel:	Nik, C., D. Grunnet, S. Servoli		

Field Screening Instruments/Action Levels/Units

PRD 1000 Particulate Monitor	Jerome Mercury Vapor Analyzer	Flame Ionization Detector
0.5 mg/m^3	0.05 mg/m^3	1.25 ppm (5 min. sustained)

Field Screening Sample Station	1			2			3			4			5			6		
	P	J	F	P	J	F	P	J	F	P	J	F	P	J	F	P	J	F
Time																		
0800	0.03	0.0	0.0															
0900				0.04	0.0	0.0												
10:00							0.02	0.0	0.0									
11:00										0.008	0.0	0.0						
12:00													0.004	0.0	0.0			
13:00																0.002	0.0	0.0
14:00	0.005	0.0	0.0															
15:00				0.03	0.0	0.0												

OBSERVATIONS/NOTES/FIELD SKETCH:



NO DETECTIONS OBSERVED ABOVE SITE SPECIFIC SCREENING LEVELS

TETRA TECH INC.

LMC Wilmington Health and Safety Field Screening Log

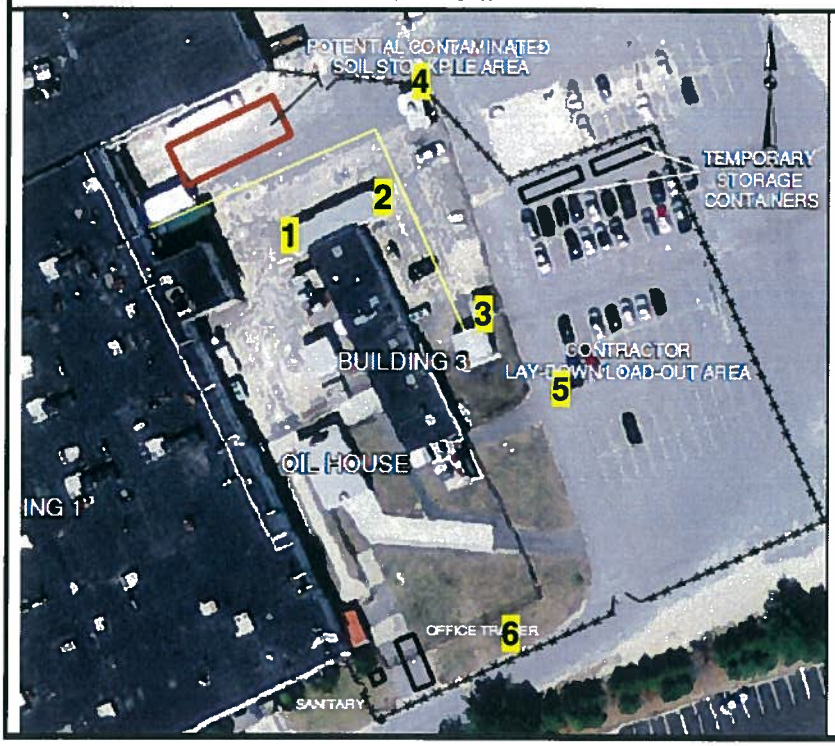
Project Site Name:	LMC Wilmington	**Date:**	6/22/11
Project No.:	112IC03346	**Recorded By:**	M. Alray
Weather:	CLOUDY / RAIN 60s/70s		
Subcontractor:	TANTARA		
Personnel:	Scott S., Dave G., Nik C.		

Field Screening Instruments/Action Levels/Units

PRD 1000 Particulate Monitor	Jerome Mercury Vapor Analyzer	Flame Ionization Detector
0.5 mg/m^3	0.05 mg/m^3	1.25 ppm (5 min. sustained)

Field Screening Sample Station	1			2			3			4			5			6		
	P	J	F	P	J	F	P	J	F	P	J	F	P	J	F	P	J	F
Time																		
0800	0.002	0.0	0.0															
0900				0.05	0.0	0.0												
10:00							0.04	0.0	0.0									
11:00										0.002	0.0	0.0						
12:00													0.002	0.0	0.0			

OBSERVATIONS/NOTES/FIELD SKETCH:



DUE TO RAIN IN AFTERNOON, NO ADDITIONAL READINGS TAKEN

NO DETECTIONS OBSERVED ABOVE SITE SPECIFIC SCREENING LEVELS

TETRA TECH INC.

LMC Wilmington Health and Safety Field Screening Log

Project Site Name:	LMC Wilmington	**Date:**	6/23/11
Project No.:	112IC03346	**Recorded By:**	M. Atray
Weather:	CLOUDY / RAIN 60's		
Subcontractor:	TANTARA / INTERSTATE		
Personnel:	DAVE B., Scott S., Nik C., Stephen, George		

Field Screening Instruments/Action Levels/Units

PRD 1000 Particulate Monitor	Jerome Mercury Vapor Analyzer	Flame Ionization Detector
0.5 mg/m^3	0.05 mg/m^3	1.25 ppm (5 min. sustained)

Field Screening Sample Station	1			2			3			4			5			6		
	P	J	F	P	J	F	P	J	F	P	J	F	P	J	F	P	J	F
Time																		

OBSERVATIONS/NOTES/FIELD SKETCH:

- AFTER 3 DAYS OF NON-DETECTS WITH JEROME METER IT WAS DETERMINED BY H&S DEPT THAT MERCURY VAPOR MONITORING NOT NEEDED
- DUE TO RAIN NO EH&S SCREENING PERFORMED

TETRA TECH INC.

LMC Wilmington Health and Safety Field Screening Log

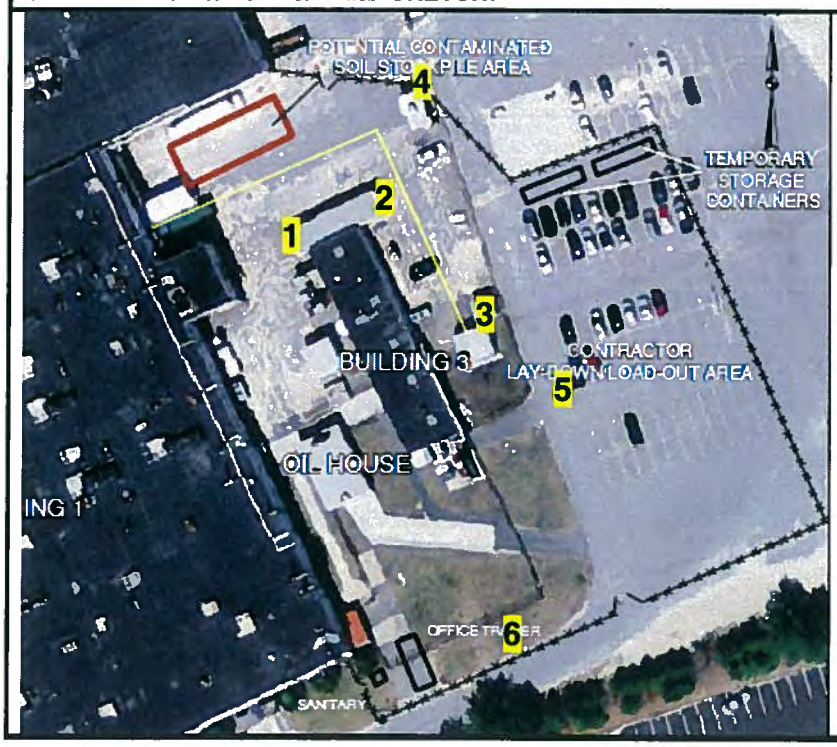
Project Site Name:	LMC Wilmington	**Date:**	6/24/11
Project No.:	112IC03346	**Recorded By:**	M. Akoy
Weather:	Cloudy Rain 60's		
Subcontractor:	Tantara, Interstate		
Personnel:	Scott S, Nick C, Dave G, George, Steve		

Field Screening Instruments/Action Levels/Units

PRD 1000 Particulate Monitor	Jerome Mercury Vapor Analyzer	Flame Ionization Detector
0.5 mg/m^3	0.05 mg/m^3	1.25 ppm (5 min. sustained)

Field Screening Sample Station	1			2			3			4			5			6		
	P	J	F	P	J	F	P	J	F	P	J	F	P	J	F	P	J	F
Time																		

OBSERVATIONS/NOTES/FIELD SKETCH:



- Due to rain no EH&S screening performed

TETRA TECH INC.

LMC Wilmington Health and Safety Field Screening Log

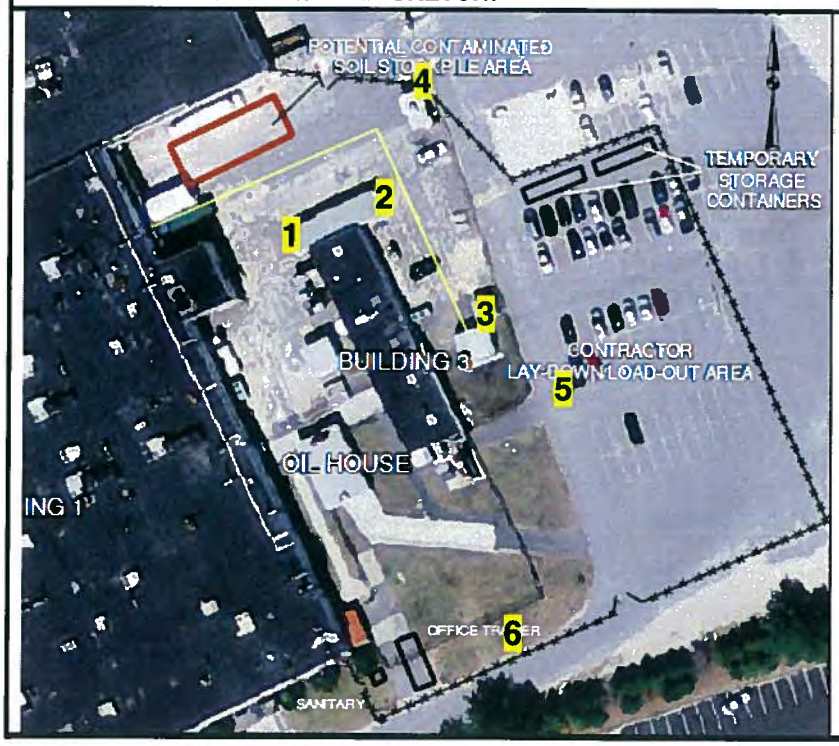
Project Site Name:	LMC Wilmington	**Date:**	11/4/11
Project No.:	112IC03346	**Recorded By:**	M. Alroy
Weather:	P. cloudy 40s 50's		
Subcontractor:	Tantus		
Personnel:	George		

Field Screening Instruments/Action Levels/Units

PRD 1000 Particulate Monitor	Flame Ionization Detector
0.5 mg/m^3	1.25 ppm (5 min. sustained)

Field Screening Sample Station	1		2		3		4		5		6	
	P	F	P	F	P	F	P	F	P	F	P	F
Time												
0900	0.011											
0900			0.007									
1000					0.021							
1100							0.035		0.007			
1200											0.017	
1300	0.012											
1400			0.009									
1500					0.011							

OBSERVATIONS/NOTES/FIELD SKETCH:



NO DETECTIONS OBSERVED GREATER THAN SITE SPECIFIC ACTION LEVELS

APPENDIX C

Laboratory Analytical Data Package – Imported Fill Characterization

analytics environmental laboratory LLC

195 Commerce Way Suite E
Portsmouth, New Hampshire 03801
603-436-5111 Fax 603-430-2151
800-929-9906
www.analyticslab.com

September 1, 2011

Mr. Scott Nesbitt
Tetra Tech NUS, Inc.
661 Andersen Drive, Foster Plaza 7
Pittsburgh PA 15220

RE: Analytical Results Case Narrative
LMC Wilmington Project No:1121C03346
Analytics # 70798

Dear Mr. Nesbit:

Enclosed please find the analytical results for samples submitted for the above-mentioned project. The attached Cover Page lists the sample IDs, Lab tracking numbers and collection dates for the samples included in this deliverable.

Samples were analyzed for Volatile Organic Compounds (VOCs) using EPA Method 8260B, Semi-Volatile Organic Compounds (SVOCs) using EPA Method 8270D,Volatile Petroleum Hydrocarbons (VPH) using MADEP VPH Method Rev 1.1, May 2004, Extractable Petroleum Hydrocarbons (EPH) using MADEP EPH Method Rev 1.1, Polychlorinated Biphenyls (PCBs) by EPA Method 8082 and MCP Metals. The metals analysis were subcontracted to Test America-Westfield MA.

Unless otherwise noted in the Non-conformance Summary listed below, all of the quality control (QC) criteria including initial calibration, calibration verification, surrogate recovery, holding time and method accuracy/precision for these analyses were within acceptable limits.

This Level II package has been assembled in the following:

- Case Narrative/Non-Conformance Summary
- Sample Log Sheet - Cover Page
- MCP Cover Pages
- VOC Form I Data Sheet for Samples and Blanks
- VOC Form 3 MS/MSD (LCS) Recoveries
- SVOC Form I Data Sheet for Samples and Blanks
- SVOC Form 3 MS/MSD (LCS) Recoveries
- VPH Form I Data Sheet for Samples and Blanks
- VPH Form 3 MS/MSD (LCS) Recoveries
- EPH Form I Data Sheet for Samples and Blanks
- EPH Form 3 MS/MSD (LCS) Recoveries
- PCB Form I Data Sheet for Samples and Blanks
- PCB Form 3 MS/MSD (LCS) Recoveries
- Subcontracted Reports and Narratives
- Chain of Custody (COC) Forms
- Sample Receipt Checklist

QC NON CONFORMANCE SUMMARY

Sample Receipt:
The EPH sample was not collected in an amber container. The sample was delivered to laboratory in a cooler and protected from light. Upon receipt at the laboratory the sample containers were wrapped in aluminum foil to protect from light while being stored at the laboratory. The client was contacted and instructed the laboratory to proceed with analysis.

Volatile Organic Compounds (VOCs) by EPA 8260B:
This narrative is specific to target analytes reported on the Form 1 data pages. Non-target (NT) analyte deviations were not addressed. The following analytes were not "J" flagged in this report: Methylene chloride, Diethyl ether and Acetone.

Due to method limitations the quantitation limits for Dibromochloromethane, Dichloromethane, 1,3-Dichloropropene, Methyl ethyl ketone, Methyl isobutyl ketone, 1,1,2,2-Tetrachloroethane and 1,4-Dioxane may not meet regulatory standards for high level preserved solid samples.

Methyl ethyl ketone did not meet minimum Rf requirement of 0.1 in the initial calibration (V808231C) and in the continuing calibration standard (file#C79912SC). The initial calibration verification standard was in control for all analytes except Dichlorodifluoromethane that high high recovery (131%). Results were reported without qualification.

The laboratory control samples (LS082611C/LS082611C2) had some analytes with recoveries above the laboratory acceptance but within MCP acceptance criteria (70-130%) (see form3). These analytes were not detected in any samples associated with this QC and results were reported without qualification.

Semi-Volatile Organic Compounds (SVOCs) by EPA 8270D:
This narrative is specific to target analytes reported on the Form 1 data pages. Non-target (NT) analyte deviations were not addressed.

Nitrobenzene (0.17) did not meet minimum Rf requirement of 0.2 in the initial calibration (ABN083011). The initial calibration verification standard was in control for all analytes. Results were reported without qualification.

Volatile Petroleum Hydrocarbons (VPH):
No QC deviations.

Extractable Petroleum Hydrocarbons (EPH)
The continuing calibration standards (file# N15432SC & N15438SC) had %D greater 20% for up to four analytes. This is within the method allowed exceptions and results were reported without qualification.

PCBs by EPA Method 8082:
No QC deviations.

If you have any questions or I can be of further assistance, please do not hesitate to contact me.

Sincerely,
ANALYTICS Environmental Laboratory, LLC

Stephen L. Knollmeyer
Laboratory Director

analytics environmental laboratory LLC

195 Commerce Way Suite E
Portsmouth, New Hampshire 03801
603-436-5111 Fax 603-430-2151
800-929-9906
www.analyticslab.com

Mr. Scott Nesbit
Terta Tech NUS, Inc.
661 Andersen Drive, Foster Plaza 7
Pittsburgh PA 15220

Report Number: 70798

Revision: Rev. 0

Re: LMC Wilmington (Project No: 1121C03346)

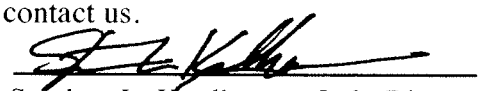
Enclosed are the results of the analyses on your sample(s). Samples were received on 25 August 2011 and analyzed for the tests listed. Samples were received in acceptable condition, with the exceptions noted below or on the chain of custody. These results pertain to samples as received by the laboratory and for the analytical tests requested on the chain of custody. The results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report. Please see individual reports for specific methodologies and references.

Lab Number	Sample Date	Station Location	Analysis	Comments
70798-1	08/25/11	LMC-SO-PROCESSED	EPA 8082 (PCBs only)	
	08/25/11	LMC-SO-PROCESSED	EPA 8260 Volatile Organics	
	08/25/11	LMC-SO-PROCESSED	EPA 8270 Acid/Base Neutrals	
	08/25/11	LMC-SO-PROCESSED	MADEP EPH	
	08/25/11	LMC-SO-PROCESSED	MCP Metals plus Mercury	
	08/25/11	LMC-SO-PROCESSED	Volatile Petroleum Hydrocarbons	

Sample Receipt Exceptions: None

Analytics Environmental Laboratory is certified by the states of New Hampshire, Maine, Massachusetts, Connecticut, Rhode Island, Virginia, Maryland, and North Carolina, and is accredited by the Deparment of Defense (DOD) ELAP program. A list of actual certified parameters is available upon request.

If you have any questions on these results, please do not hesitate to contact us.

Authorized signature 

Stephen L. Knollmeyer Lab. Director

Date 9/1/2011

analytics environmental laboratory LLC

195 Commerce Way
Portsmouth, New Hampshire 03801
603-436-5111 Fax 603-430-2151
800-929-9906

MassDEP Analytical Protocol Certification Form

Laboratory Name: Analytics Environmental Laboratory, LLC Project #: 70798

Project Location: LMC Wilmington RTN:

This Form provides certifications for the following data set. Laboratory Sample ID Number(s):

70798-1

Matrices: ☐ Groundwater/Surface Water ☒ Soil/Sediment ☐ Drinking Water ☐ Air ☐ Other

CAM Protocol (check all that apply below):

8260 VOC CAM II A ☒	7470/7471 Hg CAM III B ☐	MassDEP VPH CAM IV A ☒	8081 Pesticides CAM V B ☐	7196 Hex Cr CAM VI B ☐	MassDEP APH CAM IX A ☐
8270 SVOC CAM II B ☒	7010 Metals CAM III C ☐	MassDEP EPH CAM IV B ☒	8151 Herbicides CAM V C ☐	8330 Explosives CAM VIII A ☐	TO-15 VOC CAM IX B ☐
6010 Metals CAM III A ☐	6020 Metals CAM III D ☐	8082 PCB CAM V A ☒	9014 Total Cyanide/PAC CAM VI A ☐	6860 Perchlorate CAM VIII B ☐	

Affirmative Responses to Questions A through F are required for "Presumptive Certainty" status

A	Were all samples received in a condition conistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times?	☐Yes ☒No
B	Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed?	☒Yes ☐No
C	Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances?	☒Yes ☐No
D	Does the laboratory report comply with all reporting requirements specified in CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data"?	☒Yes ☐No
E	a. VPH, EPH, and APH Methods only: Was each method conducted without significant modification(s)? (Refer to individual method(s) for a list of significant modifications). b. APH and TO-15 Methods only: Was the complete analyte list reported for each method?	☒Yes ☐No ☐Yes ☐No
F	Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all "No" responses to Questions A through E)?	☒Yes ☐No

Responses to Questions G, H and I below are required for "Presumptive Certainty" status

G	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)?	☒Yes ☐No[1]

Data User Note: Data that achieve "Preseumptive Certainty" status may not necessarily meet the data usability and representativeness requirements described in 310 CMR 40. 1056 (2)(k) and WSC-07-350.

H	Were ALL QC performance standards specified in the CAM protocol(s) achieved?	☐Yes ☒No[1]
I	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	☒Yes ☐No[1]

[1] *All negative responses must be addressed in an attached laboratory narrative.*

I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this analytical report is, to the best of my knowledge and belief, accurate and complete.

Signature: _____ **Position:** Laboratory Director

Printed Name: Stephen L. Knollmeyer **Date:** September 01, 2011

Surrogate Compound Limits

Matrix: / Units:	Aqueous % Recovery	Solid % Recovery	Method
Volatile Organic Compounds - Drinking Water			
1,4-Difluorobenzene	70-130		EPA 524.2
Bromofluorobenzene	70-130		
1,2-Dichlorobenzene-d4	70-130		
Volatile Organic Compounds			
1,2-Dichloroethane-d4	70-120	70-120	EPA 624/8260B
Toluene-d8	85-120	85-120	
Bromofluorobenzene	75-120	75-120	
Semi-Volatile Organic Compounds			
2-Fluorophenol	20-110	35-105	EPA 625/8270C
d5-Phenol	15-110	40-100	
d5-nitrobenzene	40-110	35-100	
2-Fluorobiphenyl	50-110	45-105	
2,4,6-Tribromophenol	40-110	40-125	
d14-p-terphenyl	50-130	30-125	
PAH's by SIM			
d5-nitrobenzene	21-110	35-110	EPA 8270C
2-Fluorobiphenyl	36-121	45-105	
d14-p-terphenyl	33-141	30-125	
Pesticides and PCBs			
2,4,5,6-Tetrachloro-m-xylene (TCX)	46-122	40-130	EPA 608/8082
Decachlorobiphenyl (DCB)	40-135	40-130	
Herbicides			
Dichloroacetic acid (DCAA)	30-150	30-150	
Gasoline Range Organics/TPH Gasoline			
Trifluorotoluene TFT (FID)	60-140	60-140	MEDEP 4217/EPA 8015
Bromofluorobenzene (BFB) (FID)	60-140	60-140	
Trifluorotoluene TFT (PID)	60-140	60-140	
Bromofluorobenzene (BFB) (PID)	60-140	60-140	
Diesel Range Organics/TPH Diesel			
m-terphenyl	60-140	60-140	MEDEP 4125/EPA 8015/CT ETPH
Volatile Petroleum Hydrocarbons			
2,5-Dibromotoluene (PID)	70-130	70-130	MADEP VPH May 2004 Rev1.1
2,5-Dibromotoluene (FID)	70-130	70-130	
Extracatable Petroleum Hydrocarbons			
1-chloro-octadecane (aliphatic)	40-140	40-140	MADEP EPH May 2004 Rev1.1
o-Terphenyl (aromatic)	40-140	40-140	
2-Fluorobiphenyl (Fractionation)	40-140	40-140	
2-Bromonaphthalene (fractionation)	40-140	40-140	

VOLATILE
DATA SUMMARIES

analytics environmental laboratory LLC

195 Commerce Way
Portsmouth, New Hampshire 03801
603-436-5111 Fax 603-430-2151
800-929-9906

Mr. Scott Nesbit
Terta Tech NUS, Inc.
661 Andersen Drive, Foster Plaza 7
Pittsburgh PA 15220

August 29, 2011

SAMPLE DATA

CLIENT SAMPLE ID

Project Name: LMC Wilmington

Project Number: 1121C03346

Field Sample ID: LAB QC

Lab Sample ID: MB08261C2
Matrix: Solid
Percent Solid: 100
Dilution Factor: 100
Collection Date: N/A
Lab Receipt Date: N/A
Analysis Date: 08/26/11

ANALYTICAL RESULTS VOLATILE ORGANICS

COMPOUND	Quantitation Limit µg/kg	Result µg/kg	COMPOUND	Quantitation Limit µg/kg	Result µg/kg
Benzene	100	U	1,3-Dichloropropane	100	U
Bromobenzene	100	U	cis-1,3-Dichloropropene	100	U
Bromochloromethane	100	U	trans-1,3-Dichloropropene	100	U
Bromodichloromethane	75	U	2,2-Dichloropropane	100	U
Bromoform	75	U	1,1-Dichloropropene	100	U
Bromomethane	100	U	Ethylbenzene	100	U
n-butylbenzene	100	U	Hexachlorobutadiene	100	U
sec-butylbenzene	100	U	Isopropylbenzene	100	U
tert-butylbenzene	100	U	p-isopropyltoluene	100	U
Carbon Tetrachloride	100	U	Methylene Chloride	500	U
Chlorobenzene	100	U	Methyl-tert-butyl ether (MTBE)	75	U
Chloroethane	100	U	Naphthalene	100	U
Chloroform	75	U	n-Propylbenzene	100	U
Chloromethane	100	U	Styrene	100	U
2-Chlorotoluene	100	U	1,1,1,2-Tetrachloroethane	100	U
4-Chlorotoluene	100	U	1,1,2,2-Tetrachloroethane	75	U
Dibromochloromethane	75	U	Tetrachloroethene	100	U
1,2-Dibromo-3-chloropropane	100	U	Toluene	100	U
1,2-Dibromoethane	75	U	1,2,3-Trichlorobenzene	100	U
Dibromomethane	100	U	1,2,4-Trichlorobenzene	100	U
1,2-Dichlorobenzene	100	U	1,1,1-Trichloroethane	100	U
1,3-Dichlorobenzene	100	U	1,1,2-Trichloroethane	75	U
1,4-Dichlorobenzene	100	U	Trichloroethene	100	U
Dichlorodifluoromethane	100	U	Trichlorofluoromethane	100	U
1,1-Dichloroethane	100	U	1,2,3-Trichloropropane	100	U
1,2-Dichloroethane	75	U	1,2,4-Trimethylbenzene	100	U
1,1-Dichloroethene	75	U	1,3,5-Trimethylbenzene	100	U
cis-1,2-Dichloroethene	100	U	Vinyl Chloride	100	U
trans-1,2-Dichloroethene	100	U	o-Xylene	100	U
1,2-Dichloropropane	75	U	m,p-Xylene	100	U
Acetone	1000	U	Diethyl ether	100	U
Carbon Disulfide	100	U	2-Hexanone	1000	U
Tetrahydrofuran	500	U	Methyl isobutyl ketone	1000	U
Methyl ethyl ketone	1000	U	Di-isopropyl ether (DIPE)	100	U
t-Butyl alcohol (TBA)	2000	U	Ethyl t-butyl ether (ETBE)	100	U
t-Amyl methyl ether (TAME)	100	U	1,4-Dioxane	3000	U

Surrogate Standard Recovery

d4-1,2-Dichloroethane	96 %	d8-Toluene	100 %	Bromofluorobenzene	96 %

U=Undetected J=Estimated E=Exceeds Calibration Range B=Detected in

METHODOLOGY: Sample collection in accordance with SW-846 method 5035A. Sample analysis was conducted according to: Test Methods for Evaluating Solid Waste, SW-846 Method 8260B.

COMMENTS: Results are expressed on a dry weight basis.

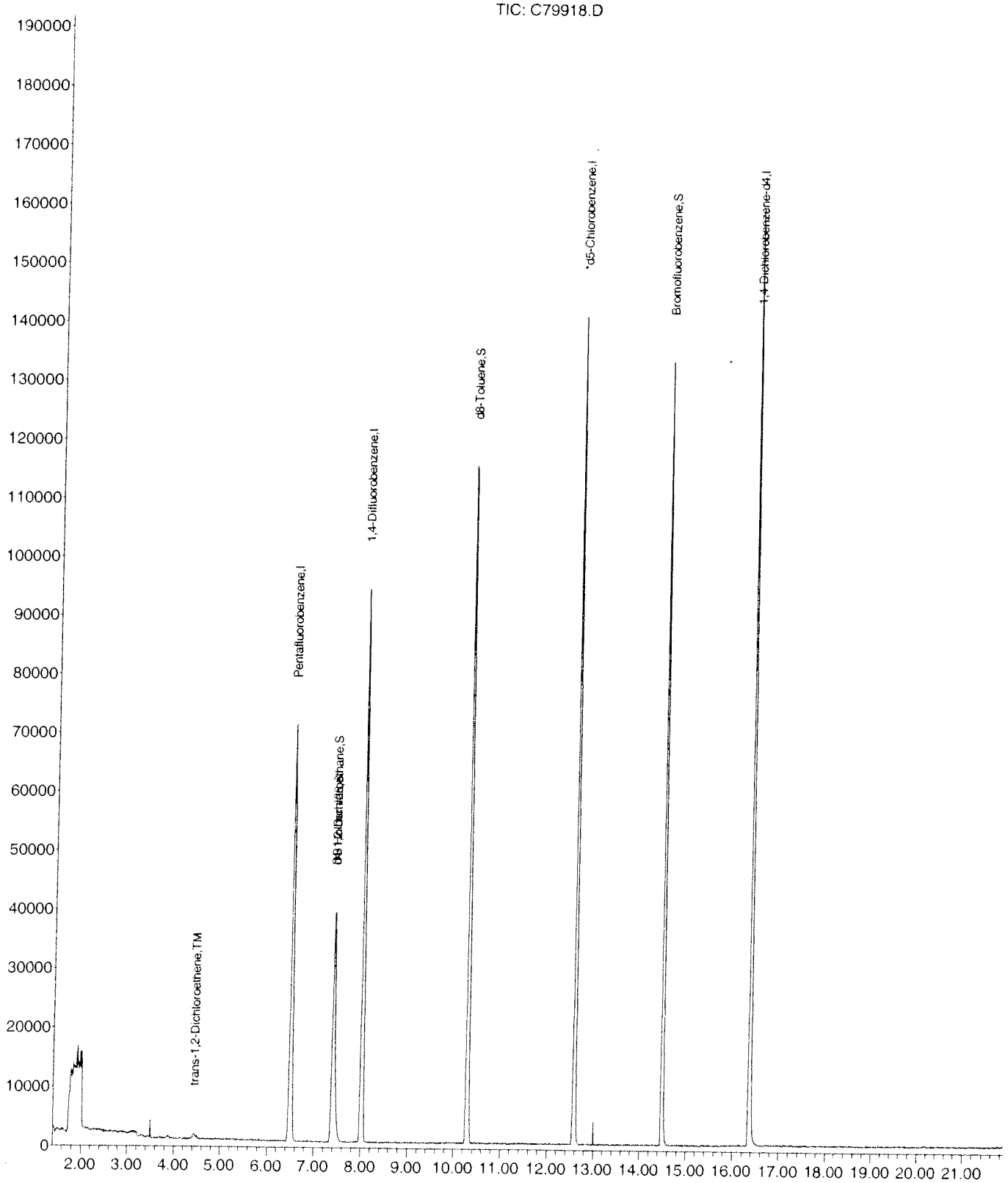
~8260MCP (3) + Dioxane:Res(72):Rec(3)

Authorized signature

Data File : C:\HPCHEM\1\DATA\DATA\082611-C\C79918.D Vial: 11
Acq On : 26 Aug 2011 3:28 pm Operator: TD
Sample : MB08261C2 Inst : Instr_C
Misc : 50,10.00,SOIL Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 29 9:54 2011 Quant Results File: V808231C.RES

Method : C:\HPCHEM\1\METHODS\MATHODS\METHODS\V808231C.M (RTE Integrator)
Title : 8260 Purgable Organics
Last Update : Thu Aug 25 14:20:31 2011
Response via : Initial Calibration

TIC: C79918.D



analytics environmental laboratory LLC

195 Commerce Way
Portsmouth, New Hampshire 03801
603-436-5111 Fax 603-430-2151
800-929-9906

Mr. Scott Nesbit
Terta Tech NUS, Inc.
661 Andersen Drive, Foster Plaza 7
Pittsburgh PA 15220

August 29, 2011

SAMPLE DATA

CLIENT SAMPLE ID

Project Name: LMC Wilmington

Project Number: 1121C03346

Field Sample ID: LMC-SO-PROCESSED

Lab Sample ID: 70798-1
Matrix: Solid
Percent Solid: 94
Dilution Factor: 96
Collection Date: 08/25/11
Lab Receipt Date: 08/25/11
Analysis Date: 08/26/11

ANALYTICAL RESULTS VOLATILE ORGANICS

COMPOUND	Quantitation Limit µg/kg	Result µg/kg	COMPOUND	Quantitation Limit µg/kg	Result µg/kg
Benzene	96	U	1,3-Dichloropropane	96	U
Bromobenzene	96	U	cis-1,3-Dichloropropene	96	U
Bromochloromethane	96	U	trans-1,3-Dichloropropene	96	U
Bromodichloromethane	72	U	2,2-Dichloropropane	96	U
Bromoform	72	U	1,1-Dichloropropene	96	U
Bromomethane	96	U	Ethylbenzene	96	U
n-butylbenzene	96	U	Hexachlorobutadiene	96	U
sec-butylbenzene	96	U	Isopropylbenzene	96	U
tert-butylbenzene	96	U	p-isopropyltoluene	96	U
Carbon Tetrachloride	96	U	Methylene Chloride	481	U
Chlorobenzene	96	U	Methyl-tert-butyl ether (MTBE)	72	U
Chloroethane	96	U	Naphthalene	96	U
Chloroform	72	U	n-Propylbenzene	96	U
Chloromethane	96	U	Styrene	96	U
2-Chlorotoluene	96	U	1,1,1,2-Tetrachloroethane	96	U
4-Chlorotoluene	96	U	1,1,2,2-Tetrachloroethane	72	U
Dibromochloromethane	72	U	Tetrachloroethene	96	U
1,2-Dibromo-3-chloropropane	96	U	Toluene	96	U
1,2-Dibromoethane	72	U	1,2,3-Trichlorobenzene	96	U
Dibromomethane	96	U	1,2,4-Trichlorobenzene	96	U
1,2-Dichlorobenzene	96	U	1,1,1-Trichloroethane	96	U
1,3-Dichlorobenzene	96	U	1,1,2-Trichloroethane	72	U
1,4-Dichlorobenzene	96	U	Trichloroethene	96	U
Dichlorodifluoromethane	96	U	Trichlorofluoromethane	96	U
1,1-Dichloroethane	96	U	1,2,3-Trichloropropane	96	U
1,2-Dichloroethane	72	U	1,2,4-Trimethylbenzene	96	U
1,1-Dichloroethene	72	U	1,3,5-Trimethylbenzene	96	U
cis-1,2-Dichloroethene	96	U	Vinyl Chloride	96	U
trans-1,2-Dichloroethene	96	U	o-Xylene	96	U
1,2-Dichloropropane	72	U	m,p-Xylene	96	U
Acetone	963	U	Diethyl ether	96	U
Carbon Disulfide	96	U	2-Hexanone	963	U
Tetrahydrofuran	481	U	Methyl isobutyl ketone	963	U
Methyl ethyl ketone	963	U	Di-isopropyl ether (DIPE)	96	U
t-Butyl alcohol (TBA)	1930	U	Ethyl t-butyl ether (ETBE)	96	U
t-Amyl methyl ether (TAME)	96	U	1,4-Dioxane	2890	U

Surrogate Standard Recovery

d4-1,2-Dichloroethane	101 %	d8-Toluene	93 %	Bromofluorobenzene	94 %

U=Undetected J=Estimated E=Exceeds Calibration Range B=Detected in

METHODOLOGY: Sample collection in accordance with SW-846 method 5035A. Sample analysis was conducted according to: Test Methods for Evaluating Solid Waste, SW-846 Method 8260B.

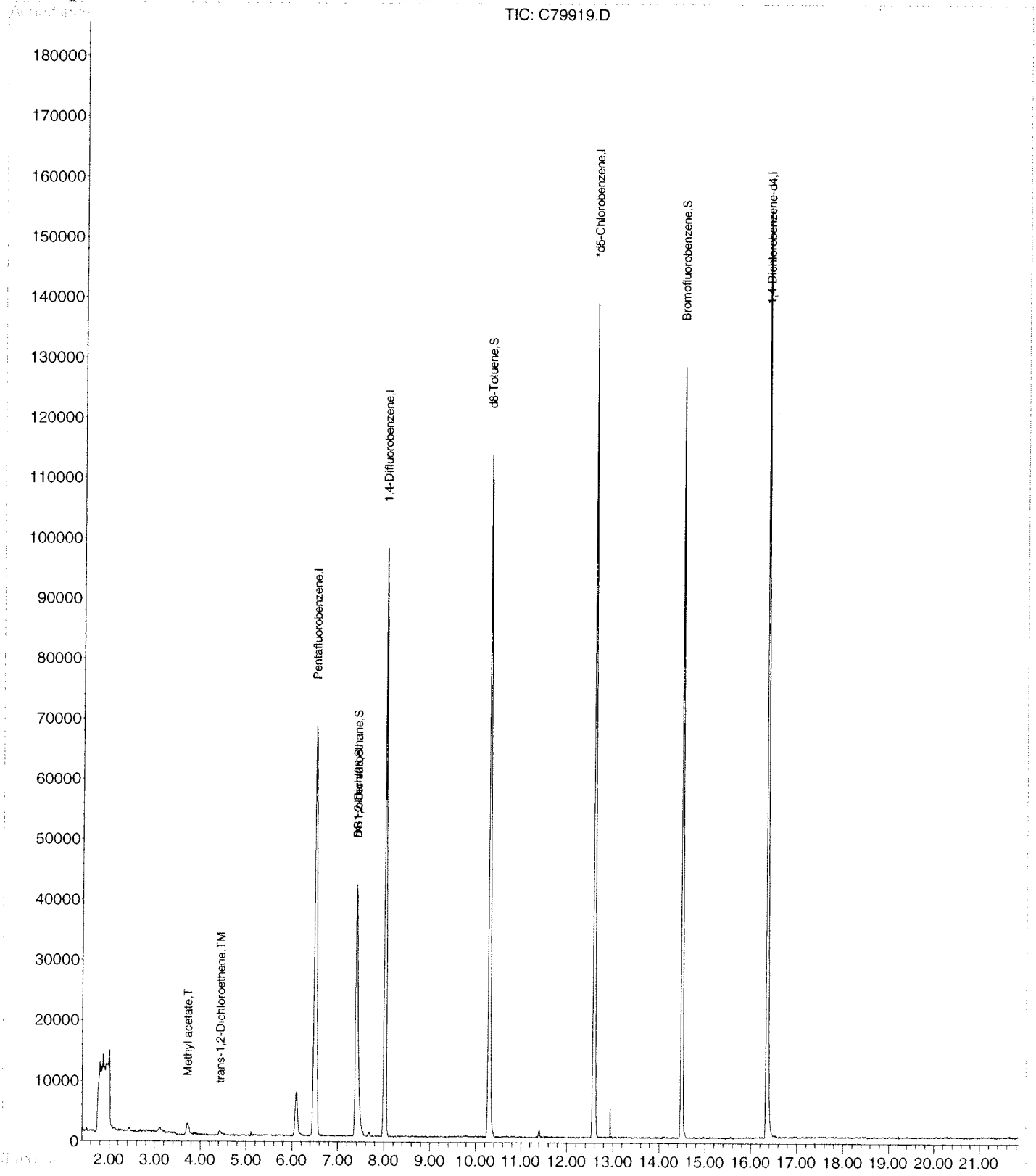
COMMENTS: Results are expressed on a dry weight basis.

-8260MCP (3) + Dioxane:Res(72):Rec(3)

Authorized signature

Data File : C:\HPCHEM\1\DATA\DATA\082611-C\C79919.D Vial: 12
Acq On : 26 Aug 2011 4:14 pm Operator: TD
Sample : 70798-1 Inst : Instr_C
Misc : 50,11.07,SOIL Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 29 9:54 2011 Quant Results File: V808231C.RES

Method : C:\HPCHEM\1\METHODS\MATHODS\METHODS\V808231C.M (RTE Integrator)
Title : 8260 Purgable Organics
Last Update : Thu Aug 25 14:20:31 2011
Response via : Initial Calibration



VOLATILE
QC FORMS

VOLATILE ORGANIC SOIL
LABORATORY CONTROL/LABORATORY CONTROL DUPLICATE
PERCENT RECOVERY

Instrument ID: C
GC Column: RTX-502.2
Column ID: 0.25 mm
Heated purge (Y/N): N

SDG: 70798
Non-spiked sample: MB08261C2
Spike: LS08261C
Spike duplicate: LS08261C2

COMPOUND	LCS SPIKE ADDED (ug/kg)	LCSD SPIKE ADDED (ug/kg)	LOWER LIMIT	UPPER LIMIT	RPD LIMIT	NON-SPIKE RESULT (ug/kg)	SPIKE RESULT (ug/kg)	SPIKE % REC	#	SPIKE DUP RESULT (ug/kg)	SPIKE DUP % REC	#	RPD	#
Dichlorodifluoromethane	2000	2000	49	82	25	0	1281	64		1288	64		1	
Chloromethane	2000	2000	75	125	25	0	1517	76		1583	79		4	
Vinyl Chloride	2000	2000	75	125	25	0	1438	72	*	1467	73	*	2	
Bromomethane	2000	2000	75	125	25	0	1889	94		1792	90		5	
Chloroethane	2000	2000	75	125	25	0	1807	90		1498	75		19	
t-Butyl alcohol (TBA)	10000	10000	60	140	25	0	10410	104		10674	107		3	
Trichlorofluoromethane	2000	2000	75	125	25	0	2011	101		2043	102		2	
Diethyl ether	2000	2000	75	125	25	0	1933	97		1928	96		0	
1,1,2-Trichlorotrifluoroethane	2000	2000	75	125	25	0	2206	110		2246	112		2	
Acetone	5000	5000	75	125	25	0	3859	77		4841	97		23	
1,1-Dichloroethene	2000	2000	75	125	25	0	2228	111		2168	108		3	
Methyl iodide	2000	2000	75	125	25	0	1758	88		1774	89		1	
Di-isopropyl ether (DIPE)	2000	2000	75	125	25	0	2023	101		2039	102		1	
Methylene Chloride	2000	2000	75	125	25	0	1856	93		1849	92		0	
Carbon Disulfide	2000	2000	75	125	25	0	2107	105		2090	105		1	
Acrylonitrile	2000	2000	75	125	25	0	1844	92		1906	95		3	
Methyl-tert-butyl ether (MTBE)	2000	2000	75	125	25	0	2144	107		2183	109		2	
trans-1,2-Dichloroethene	2000	2000	75	125	25	0	2044	102		2032	102		1	
1,1-Dichloroethane	2000	2000	75	125	25	0	1946	97		2009	100		3	
Methyl ethyl ketone	5000	5000	60	140	25	0	4374	87		4855	97		10	
Ethyl t-butyl ether (ETBE)	2000	2000	75	125	25	0	1992	100		1972	99		1	
2,2-Dichloropropane	2000	2000	75	125	25	0	2404	120		2526	126	*	5	
cis-1,2-Dichloroethene	2000	2000	75	125	25	0	2028	101		2027	101		0	
t-Amyl methyl ether (TAME)	2000	2000	75	125	25	0	1924	96		1923	96		0	
Chloroform	2000	2000	75	125	25	0	1948	97		1944	97		0	
Bromochloromethane	2000	2000	75	125	25	0	2031	102		2006	100		1	
Tetrahydrofuran	2000	2000	60	140	25	0	1862	93		1826	91		2	
1,1,1-Trichloroethane	2000	2000	75	125	25	0	2109	105		2058	103		2	
1,1-Dichloropropene	2000	2000	75	125	25	0	2201	110		2125	106		3	
Carbon Tetrachloride	2000	2000	75	125	25	0	2198	110		2327	116		6	
1,2-Dichloroethane	2000	2000	75	125	25	0	1933	97		1973	99		2	
Benzene	2000	2000	75	125	25	0	2028	101		1969	98		3	
Trichloroethene	2000	2000	75	125	25	0	2108	105		2148	107		2	
1,2-Dichloropropane	2000	2000	75	125	25	0	1967	98		1943	97		1	
Methylmethacrylate	2000	2000	75	125	25	0	1738	87		1421	71	*	20	
Bromodichloromethane	2000	2000	75	125	25	0	1974	99		2063	103		4	
Dibromomethane	2000	2000	75	125	25	0	1861	93		1972	99		6	
1,4-Dioxane	25000	25000	60	140	25	0	23740	95		23515	94		1	
2-Hexanone	5000	5000	75	125	25	0	4194	84		4707	94		12	
Methyl isobutyl ketone	5000	5000	75	125	25	0	4406	88		4644	93		5	
cis-1,3-Dichloropropene	2000	2000	75	125	25	0	2097	105		2056	103		2	
Toluene	2000	2000	75	125	25	0	2050	103		2084	104		2	
trans-1,3-Dichloropropene	2000	2000	75	125	25	0	2004	100		2037	102		2	
1,1,2-Trichloroethane	2000	2000	75	125	25	0	1882	94		1923	96		2	
1,3-Dichloropropane	2000	2000	75	125	25	0	1824	91		1797	90		2	
Tetrachloroethene	2000	2000	75	125	25	0	2127	106		2184	109		3	
Dibromochloromethane	2000	2000	75	125	25	0	1980	99		2071	104		4	
1,2-Dibromoethane	2000	2000	75	125	25	0	1852	93		1960	98		6	
Chlorobenzene	2000	2000	75	125	25	0	2071	104		2106	105		2	
1,1,1,2-Tetrachloroethane	2000	2000	75	125	25	0	2037	102		2068	103		2	
Ethylbenzene	2000	2000	75	125	25	0	2118	106		2152	108		2	
m,p-Xylene	4000	4000	75	125	25	0	4495	112		4509	113		0	
o-Xylene	2000	2000	75	125	25	0	2174	109		2269	113		4	

VOLATILE ORGANIC SOIL
LABORATORY CONTROL/LABORATORY CONTROL DUPLICATE
PERCENT RECOVERY

Instrument ID: C
GC Column: RTX-502.2
Column ID: 0.25 mm
Heated purge (Y/N): N

SDG: 70798
Non-spiked sample: MB08261C2
Spike: LS08261C
Spike duplicate: LS08261C2

COMPOUND	LCS SPIKE ADDED (ug/kg)	LCSD SPIKE ADDED (ug/kg)	LOWER LIMIT	UPPER LIMIT	RPD LIMIT	NON-SPIKE RESULT (ug/kg)	SPIKE RESULT (ug/kg)	SPIKE % REC	#	SPIKE DUP RESULT (ug/kg)	SPIKE DUP % REC	#	RPD	#
Styrene	2000	2000	75	125	25	0	2098	105		2207	110		5	
Bromoform	2000	2000	75	125	25	0	1979	99		2108	105		6	
Isopropylbenzene	2000	2000	75	125	25	0	2051	103		2166	108		5	
1,1,2,2-Tetrachloroethane	2000	2000	75	125	25	0	1863	93		2024	101		8	
1,2,3-Trichloropropane	2000	2000	75	125	25	0	1826	91		1967	98		7	
trans-1,4-Dichloro-2-butene	2000	2000	75	125	25	0	1730	86		1883	94		8	
n-Propylbenzene	2000	2000	75	125	25	0	2066	103		2189	109		6	
Bromobenzene	2000	2000	75	125	25	0	2084	104		2118	106		2	
1,3,5-Trimethylbenzene	2000	2000	75	125	25	0	2143	107		2222	111		4	
2-Chlorotoluene	2000	2000	75	125	25	0	2098	105		2092	105		0	
4-Chlorotoluene	2000	2000	75	125	25	0	2116	106		2225	111		5	
tert-butylbenzene	2000	2000	75	125	25	0	2199	110		2222	111		1	
1,2,4-Trimethylbenzene	2000	2000	75	125	25	0	2205	110		2318	116		5	
sec-butylbenzene	2000	2000	75	125	25	0	2278	114		2330	117		2	
p-isopropyltoluene	2000	2000	75	125	25	0	2170	108		2114	106		3	
1,3-Dichlorobenzene	2000	2000	75	125	25	0	2150	107		2125	106		1	
1,4-Dichlorobenzene	2000	2000	75	125	25	0	2080	104		2069	103		1	
n-butylbenzene	2000	2000	75	125	25	0	2200	110		2248	112		2	
1,2-Dichlorobenzene	2000	2000	75	125	25	0	2028	101		2044	102		1	
1,2-Dibromo-3-chloropropane	2000	2000	75	125	25	0	1854	93		2009	100		8	
1,2,4-Trichlorobenzene	2000	2000	75	125	25	0	2031	102		2264	113		11	
Hexachlorobutadiene	2000	2000	75	125	25	0	2083	104		2261	113		8	
Naphthalene	2000	2000	75	125	25	0	1865	93		2057	103		10	
1,2,3-Trichlorobenzene	2000	2000	75	125	25	0	1988	99		2189	109		10	

Column to be used to flag recovery and RPD values outside of QC limits
* Values outside QC limits

Non-spike result of "0" used in place of "U" to allow calculation of spike recovery.

Comments: _____

SEMI-VOLATILE
DATA SUMMARIES

analytics environmental laboratory LLC

195 Commerce Way
Portsmouth, New Hampshire 03801
603-436-5111 Fax 603-430-2151
800-929-9906

Mr. Scott Nesbit
Terta Tech NUS, Inc.
661 Andersen Drive, Foster Plaza 7
Pittsburgh PA 15220

September 1, 2011

CLIENT SAMPLE ID

Project Name: LMC Wilmington

Project Number: 1121C03346

Field Sample ID: LAB QC

SAMPLE DATA

Lab Sample ID: B082911AASE
Matrix: Solid
Percent Solid: 100
Dilution Factor: 1.0
Collection Date:
Lab Receipt Date:
Extraction Date: 08/29/11
Analysis Date: 08/31/11

ANALYTICAL RESULTS SEMI-VOLATILE ORGANICS

COMPOUND	Detection Limit µg/	Result µg/kg	COMPOUND	Detection Limit µg/	Result µg/kg
Acenaphthene	267	U	2,4-dinitrophenol	700	U
Acenaphthylene	267	U	2,4-Dinitrotoluene	350	U
Anthracene	267	U	2,6-Dinitrotoluene	500	U
Benzo[a]anthracene	267	U	di-n-octyl-phthalate	500	U
Benzo[b] fluoranthene	267	U	Fluoranthene	267	U
Benzo[k] fluoranthene	267	U	Fluorene	267	U
Benzo(g,h,i) perylene	267	U	Hexachlorobenzene	350	U
Benzo[a] pyrene	267	U	Hexachlorobutadiene	500	U
Bis(2-chloroethoxy)methane	500	U	Hexachloroethane	350	U
bis(2-chloroethyl) ether	350	U	Indeno [1,2,3-cd] pyrene	267	U
bis(2-chloroisopropyl)ether	350	U	Isophorone	500	U
Bis (2-ethylhexyl) phthalate	500	U	2-Methylnaphthalene	267	U
4-bromophenyl phenyl ether	500	U	2-Methylphenol	700	U
Butyl benzyl phthalate	500	U	3+4-Methylphenol	700	U
4-Chloroaniline	500	U	Naphthalene	267	U
2-Chloronaphthalene	267	U	Nitrobenzene	500	U
2-Chlorophenol	350	U	2-Nitrophenol	700	U
Chrysene	267	U	4-Nitrophenol	700	U
Dibenz [a,h] anthracene	267	U	Pentachlorophenol	700	U
Dibenzofuran	267	U	Phenanthrene	267	U
Di-n-butyl phthalate	500	U	Phenol	700	U
1,2-Dichlorobenzene	500	U	Pyrene	267	U
1,3-Dichlorobenzene	500	U	1,2,4-Trichlorobenzene	500	U
1,4-Dichlorobenzene	350	U	2,4,5-Trichlorophenol	500	U
3,3'-Dichlorobenzidine	500	U	2,4,6-Trichlorophenol	350	U
2,4-Dichlorophenol	350	U	Acetophenone	500	U
Diethyl Phthalate	500	U	Azobenzene	500	U
2,4-Dimethylphenol	350	U			
Dimethyl Phthalate	500	U			
Aniline	500	U			

Surrogate Standard Recovery

2-Fluorophenol	54	%	d5-Phenol	62	%	d5-nitrobenzene	60 %
2-Fluorobiphenyl	67	%	2,4,6-Tribromophenol	32	%	d14-p-terphenyl	87 %

U=Undetected J=Estimated E=Exceeds Calibration Range B=Detected in Blank

METHODOLOGY: Sample analysis was conducted according to: Test Methods for Evaluating Solid Waste, SW-846 Method 8270D. Sample preparation conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 3545.

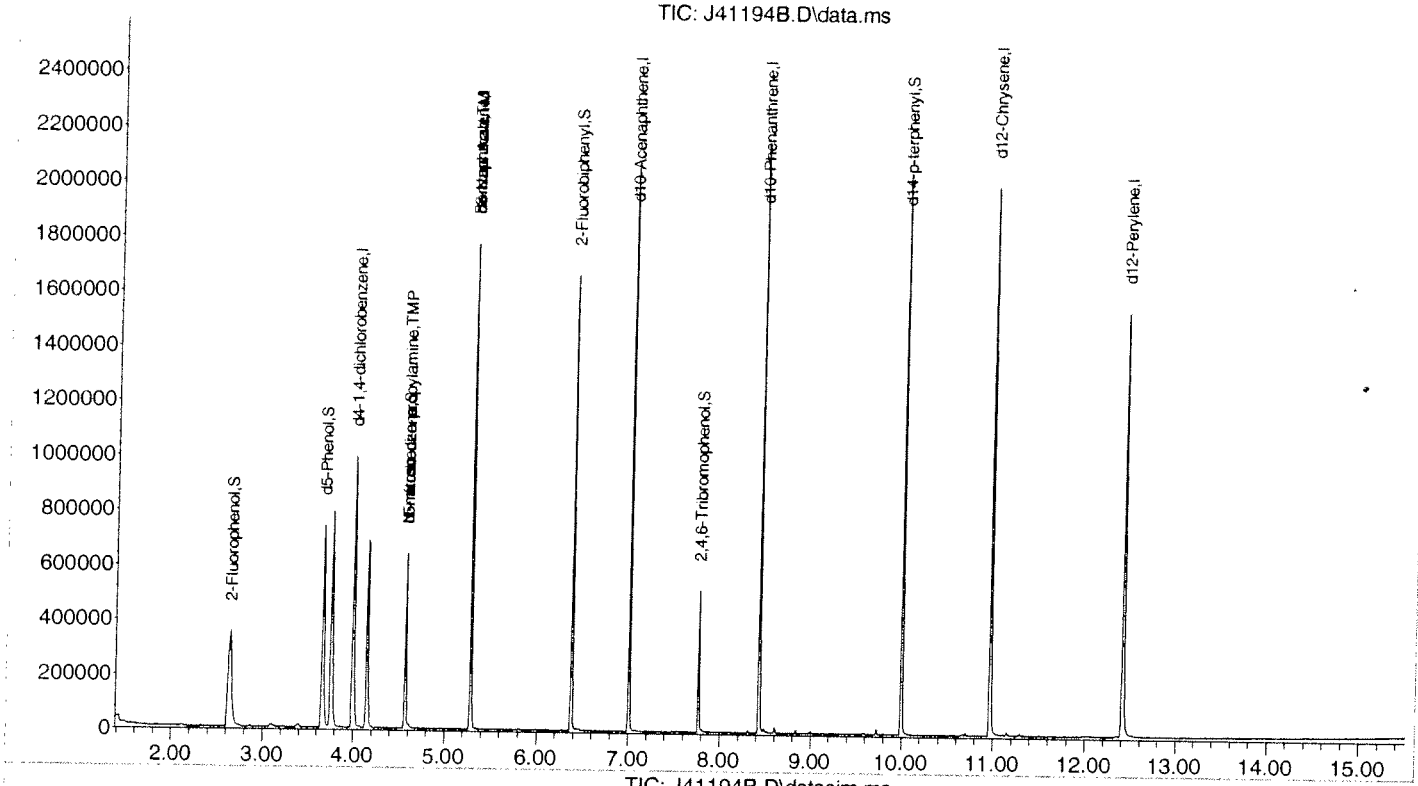
COMMENTS: Results are expressed on a dry weight basis.

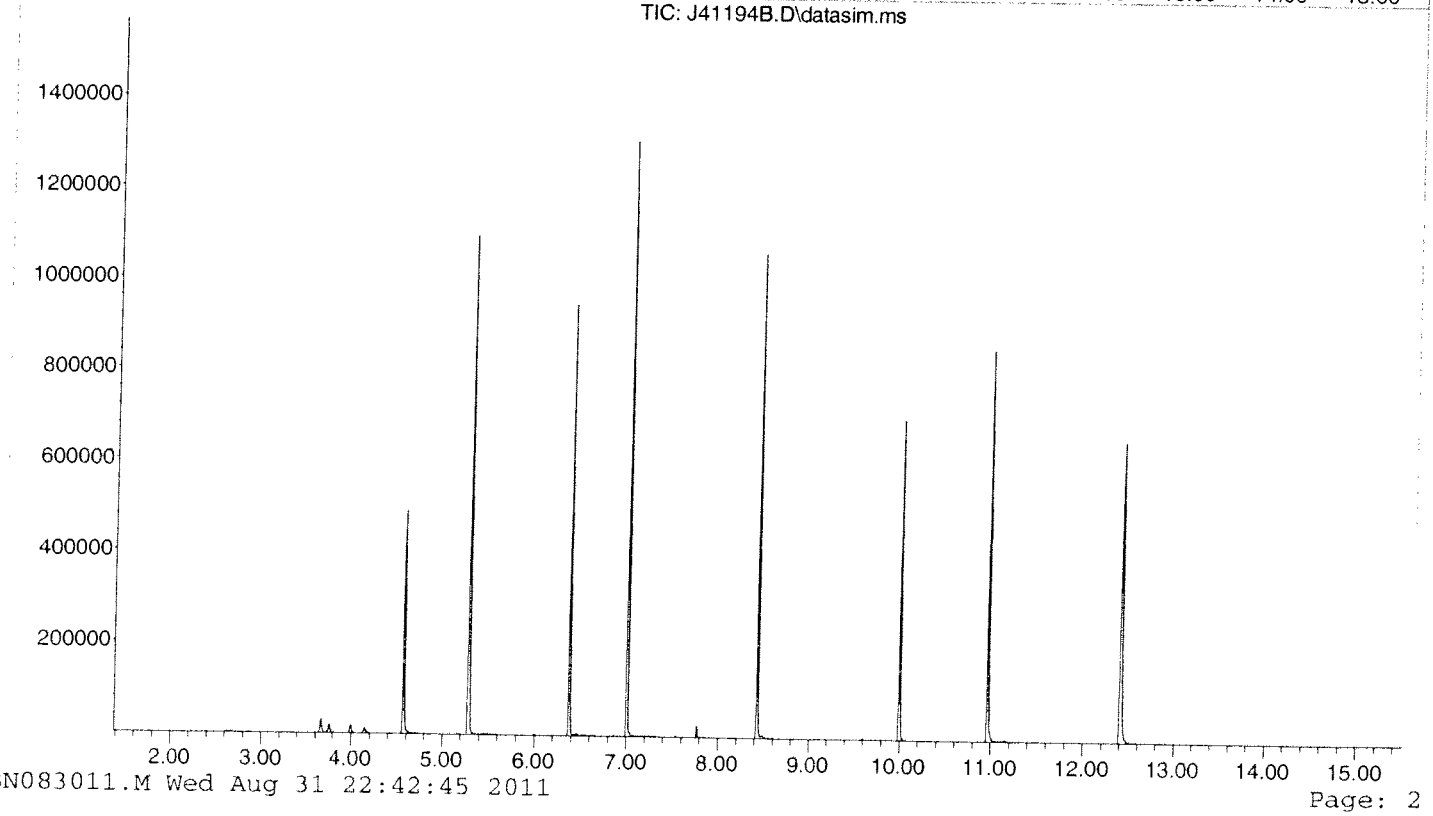
8270 MCP(63)

Authorized signature

Data Path : C:\msdchem\1\DATA\083011-J\
Data File : J41194B.D
Acq On : 31 Aug 2011 12:57 pm
Operator : AR
Sample : B082911AASE
Misc : SOIL
ALS Vial : 24 Sample Multiplier: 1

Quant Time: Aug 31 22:39:19 2011
Quant Method : C:\msdchem\1\METHODS\ABN083011.M
Quant Title : ABN FULL SCAN
QLast Update : Wed Aug 31 22:38:22 2011
Response via : Initial Calibration





ABN083011.M Wed Aug 31 22:42:45 2011 Page: 2

analytics environmental laboratory LLC

195 Commerce Way
Portsmouth, New Hampshire 03801
603-436-5111 Fax 603-430-2151
800-929-9906

Mr. Scott Nesbit
Terta Tech NUS, Inc.
661 Andersen Drive, Foster Plaza 7
Pittsburgh PA 15220

September 1, 2011

CLIENT SAMPLE ID

Project Name: LMC Wilmington

Project Number: 1121C03346

Field Sample ID: LMC-SO-PROCESSED

SAMPLE DATA

Lab Sample ID: 70798-1
Matrix: Solid
Percent Solid: 94
Dilution Factor: 1.0
Collection Date: 08/25/11
Lab Receipt Date: 08/25/11
Extraction Date: 08/29/11
Analysis Date: 08/31/11

ANALYTICAL RESULTS SEMI-VOLATILE ORGANICS

COMPOUND	Detection Limit µg/	Result µg/kg	COMPOUND	Detection Limit µg/	Result µg/kg
Acenaphthene	280	U	2,4-dinitrophenol	730	U
Acenaphthylene	280	U	2,4-Dinitrotoluene	370	U
Anthracene	280	U	2,6-Dinitrotoluene	520	U
Benzo[a]anthracene	280	**293**	di-n-octyl-phthalate	520	U
Benzo[b] fluoranthene	280	**298**	Fluoranthene	280	**655**
Benzo[k] fluoranthene	280	U	Fluorene	280	U
Benzo(g,h,i) perylene	280	U	Hexachlorobenzene	370	U
Benzo[a] pyrene	280	**215 J**	Hexachlorobutadiene	520	U
Bis(2-chloroethoxy)methane	520	U	Hexachloroethane	370	U
bis(2-chloroethyl) ether	370	U	Indeno [1,2,3-cd] pyrene	280	**197 J**
bis(2-chloroisopropyl)ether	370	U	Isophorone	520	U
Bis (2-ethylhexyl) phthalate	520	U	2-Methylnaphthalene	280	U
4-bromophenyl phenyl ether	520	U	2-Methylphenol	730	U
Butyl benzyl phthalate	520	U	3+4-Methylphenol	730	U
4-Chloroaniline	520	U	Naphthalene	280	U
2-Chloronaphthalene	280	U	Nitrobenzene	520	U
2-Chlorophenol	370	U	2-Nitrophenol	730	U
Chrysene	280	**269 J**	4-Nitrophenol	730	U
Dibenz [a,h] anthracene	280	U	Pentachlorophenol	730	U
Dibenzofuran	280	U	Phenanthrene	280	**510**
Di-n-butyl phthalate	520	U	Phenol	730	U
1,2-Dichlorobenzene	520	U	Pyrene	280	**548**
1,3-Dichlorobenzene	520	U	1,2,4-Trichlorobenzene	520	U
1,4-Dichlorobenzene	370	U	2,4,5-Trichlorophenol	520	U
3,3'-Dichlorobenzidine	520	U	2,4,6-Trichlorophenol	370	U
2,4-Dichlorophenol	370	U	Acetophenone	520	U
Diethyl Phthalate	520	U	Azobenzene	520	U
2,4-Dimethylphenol	370	U			
Dimethyl Phthalate	520	U			
Aniline	520	U			

Surrogate Standard Recovery

2-Fluorophenol	65	%	d5-Phenol	74	%	d5-nitrobenzene	71 %
2-Fluorobiphenyl	71	%	2,4,6-Tribromophenol	86	%	d14-p-terphenyl	85 %

U=Undetected J=Estimated E=Exceeds Calibration Range B=Detected in Blank

METHODOLOGY: Sample analysis was conducted according to: Test Methods for Evaluating Solid Waste, SW-846 Method 8270D. Sample preparation conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 3545.

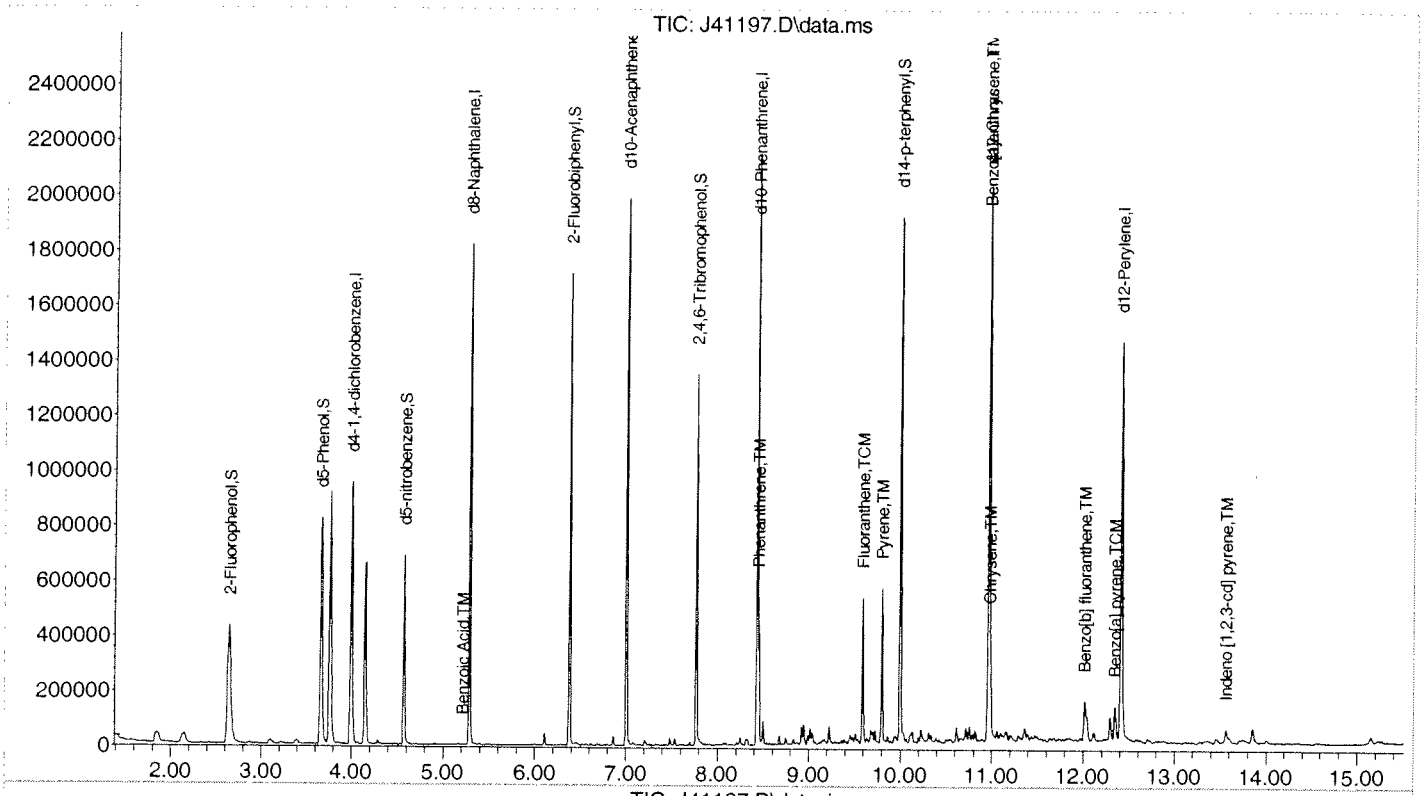
COMMENTS: Results are expressed on a dry weight basis.

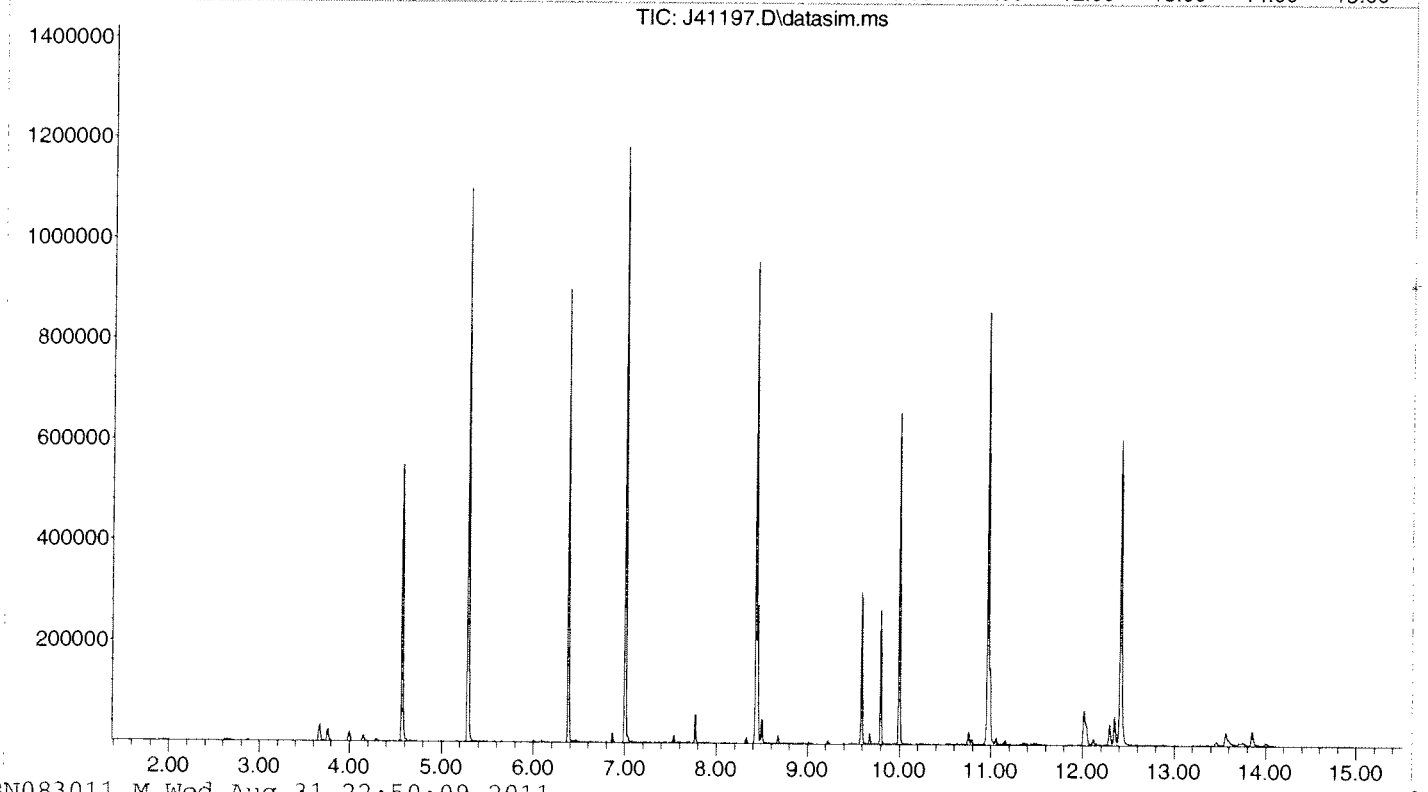
8270 MCP(63)

Authorized signature

Data Path : C:\msdchem\1\DATA\083011-J\
Data File : J41197.D
Acq On : 31 Aug 2011 2:00 pm
Operator : AR
Sample : 70798-1
Misc : SOIL
ALS Vial : 27 Sample Multiplier: 1

Quant Time: Aug 31 22:49:20 2011
Quant Method : C:\msdchem\1\METHODS\ABN083011.M
Quant Title : ABN FULL SCAN
QLast Update : Wed Aug 31 22:38:22 2011
Response via : Initial Calibration





SEMI-VOLATILE
QC FORMS

SEMIVOLATILE ORGANIC SOIL
LABORATORY CONTROL/LABORATORY CONTROL DUPLICATE
PERCENT RECOVERY

Instrument ID: J
GC Column: ZB-5ms
Column ID: 0.25 mm

SDG: 70798
Non-spiked sample: B082911AASE
Spike: L082911AASE
Spike duplicate: LD082911AASE

COMPOUND	LCS SPIKE ADDED (ug/kg)	LCSD SPIKE ADDED (ug/kg)	LOWER LIMIT	UPPER LIMIT	RPD LIMIT	NON-SPIKE RESULT (ug/kg)	SPIKE RESULT (ug/kg)	SPIKE % REC	#	SPIKE DUP RESULT (ug/kg)	SPIKE DUP % REC	#	RPD	#
Pyridine	2667	2667	13	77	25	0	1804	68		1588	60		13	
N-nitrosodimethylamine	2667	2667	20	115	25	0	1981	74		1707	64		15	
n-Decane	2667	2667	40	140	25	0	1644	62		1426	53		14	
Acetophenone	2667	2667	40	140	25	0	1775	67		1635	61		8	
Aniline	2667	2667	60	120	25	0	2145	80		1867	70		14	
Phenol	5333	5333	40	100	25	0	3958	74		3527	66		11	
2-Chlorophenol	5333	5333	45	110	25	0	3652	68		3352	63		9	
bis(2-chloroethyl) ether	2667	2667	40	105	25	0	1937	73		1590	60		20	
1,3-Dichlorobenzene	2667	2667	40	100	25	0	1755	66		1618	61		8	
1,4-Dichlorobenzene	2667	2667	35	105	25	0	1777	67		1634	61		8	
1,2-Dichlorobenzene	2667	2667	45	95	25	0	1778	67		1628	61		9	
Benzyl Alcohol	2667	2667	20	125	25	0	2097	79		1885	71		11	
2-Methylphenol	5333	5333	40	105	25	0	3983	75		3662	69		8	
bis(2-chloroisopropyl)ether	2667	2667	20	115	25	0	1905	71		1655	62		14	
3+4-Methylphenol	5333	5333	40	105	25	0	4209	79		3875	73		8	
Hexachloroethane	2667	2667	35	110	25	0	1844	69		1638	61		12	
N-nitroso-di-n-propylamine	2667	2667	40	115	25	0	2149	81		1924	72		11	
alpha-terpineol	2667	2667	40	140	25	0	1775	67		1614	61		10	
2,3-dichloroaniline	2667	2667	40	140	25	0	2034	76		1929	72		5	
Nitrobenzene	2667	2667	40	115	25	0	1963	74		1832	69		7	
Isophorone	2667	2667	45	110	25	0	2196	82		2007	75		9	
2-Nitrophenol	5333	5333	40	110	25	0	3989	75		3723	70		7	
2,4-Dimethylphenol	5333	5333	30	105	25	0	3660	69		3432	64		6	
Bis(2-chloroethoxy)methane	2667	2667	45	110	25	0	2002	75		1813	68		10	
2,4-Dichlorophenol	5333	5333	45	110	25	0	4139	78		3951	74		5	
Benzoic Acid	5333	5333	30	150	25	0	1043	20	*	1082	20	*	4	
1,2,4-Trichlorobenzene	2667	2667	45	110	25	0	1806	68		1719	64		5	
Naphthalene	2667	2667	40	105	25	0	1895	71		1768	66		7	
4-Chloroaniline	2667	2667	60	120	25	0	2168	81		1983	74		9	
Hexachlorobutadiene	2667	2667	40	115	25	0	1872	70		1774	67		5	
4-Chloro-3-methylphenol	5333	5333	45	115	25	0	4425	83		4089	77		8	
2-Methylnaphthalene	2667	2667	45	105	25	0	2100	79		1921	72		9	
Hexachlorocyclopentadiene	2667	2667	36	97	25	0	1994	75		1805	68		10	
2,4,6-Trichlorophenol	5333	5333	45	110	25	0	4377	82		4110	77		6	
2,4,5-Trichlorophenol	5333	5333	50	110	25	0	4545	85		4250	80		7	
2-Chloronaphthalene	2667	2667	45	105	25	0	2148	81		1944	73		10	
2-Nitroaniline	2667	2667	45	120	25	0	2718	102		2257	85		19	
2,6-Dinitrotoluene	2667	2667	50	110	25	0	2340	88		2176	82		7	
Dimethyl Phthalate	2667	2667	50	110	25	0	2364	89		2201	83		7	
Acenaphthylene	2667	2667	45	105	25	0	2205	83		2046	77		7	
3-Nitroaniline	2667	2667	25	110	25	0	2610	98		2345	88		11	
Acenaphthene	2667	2667	45	110	25	0	2144	80		1952	73		9	
2,4-dinitrophenol	5333	5333	15	130	25	0	2360	44		2186	41		8	
Dibenzofuran	2667	2667	50	105	25	0	2257	85		2039	76		10	
4-Nitrophenol	5333	5333	15	140	25	0	4943	93		4569	86		8	
2,4-Dinitrotoluene	2667	2667	50	115	25	0	2458	92		2331	87		5	
Fluorene	2667	2667	50	110	25	0	2200	83		2052	77		7	
Diethyl Phthalate	2667	2667	50	115	25	0	2280	85		2109	79		8	
4-Chlorophenyl phenyl ether	2667	2667	45	110	25	0	2315	87		2184	82		6	
4-Nitroaniline	2667	2667	35	115	25	0	2385	89		2170	81		9	
4,6-Dinitro-2-methylphenol	5333	5333	30	135	25	0	3610	68		3167	59		13	
n-nitrosodiphenylamine	2667	2667	50	115	25	0	1904	71		1823	68		4	
Azobenzene	2667	2667	63	115	25	0	2337	88		2080	78		12	
Biphenyl	2667	2667	60	140	25	0	2097	79		1927	72		8	

SEMIVOLATILE ORGANIC SOIL
LABORATORY CONTROL/LABORATORY CONTROL DUPLICATE
PERCENT RECOVERY

Instrument ID: J
GC Column: ZB-5ms
Column ID: 0.25 mm

SDG: 70798
Non-spiked sample: B082911AASE
Spike: L082911AASE
Spike duplicate: LD082911AASE

COMPOUND	LCS SPIKE ADDED (ug/kg)	LCSD SPIKE ADDED (ug/kg)	LOWER LIMIT	UPPER LIMIT	RPD LIMIT	NON-SPIKE RESULT (ug/kg)	SPIKE RESULT (ug/kg)	SPIKE % REC	#	SPIKE DUP RESULT (ug/kg)	SPIKE DUP % REC	#	RPD	#
Octadecane	2667	2667	40	140	25	0	2288	86		1895	71		19	
4-bromophenyl phenyl ether	2667	2667	45	115	25	0	2340	88		2171	81		7	
Hexachlorobenzene	2667	2667	45	120	25	0	2296	86		2192	82		5	
Pentachlorophenol	5333	5333	20	120	25	0	3862	72		3638	68		6	
Phenanthrene	2667	2667	50	110	25	0	2273	85		2135	80		6	
Anthracene	2667	2667	55	105	25	0	2302	86		2162	81		6	
Carbazole	5333	5333	45	115	25	0	5082	95		4696	88		8	
Di-n-butyl phthalate	2667	2667	55	110	25	0	2414	91		2254	85		7	
Fluoranthene	2667	2667	55	115	25	0	2355	88		2225	83		6	
Benzidine	5333	5333	29	187	25	0	3387	63		3201	60		6	
Pyrene	2667	2667	45	125	25	0	2376	89		2197	82		8	
Butyl benzyl phthalate	2667	2667	50	125	25	0	2572	96		2296	86		11	
Benzo[a]anthracene	2667	2667	50	110	25	0	2261	85		2175	82		4	
Chrysene	2667	2667	55	110	25	0	2370	89		2195	82		8	
3,3'-Dichlorobenzidine	5333	5333	64	113	25	0	3667	69		3525	66		4	
Bis (2-ethylhexyl) phthalate	2667	2667	45	125	25	0	2549	96		2291	86		11	
di-n-octyl-phthalate	2667	2667	40	130	25	0	2537	95		2298	86		10	
Benzo[b] fluoranthene	2667	2667	45	115	25	0	2344	88		2209	83		6	
Benzo[k] fluoranthene	2667	2667	45	125	25	0	2277	85		2232	84		2	
Benzo[a] pyrene	2667	2667	50	110	25	0	2174	82		2075	78		5	
Indeno [1,2,3-cd] pyrene	2667	2667	40	120	25	0	2245	84		2196	82		2	
Dibenz [a,h] anthracene	2667	2667	40	125	25	0	2427	91		2361	89		3	
Benzo(g,h,i) perylene	2667	2667	40	125	25	0	2324	87		2296	86		1	

Column to be used to flag recovery and RPD values outside of QC limits
* Values outside QC limits

Non-spike result of "0" used in place of "U" to allow calculation of spike recovery.

Comments: _____

SEMIVOLATILE ORGANIC SOIL
MATRIX SPIKE/MATRIX SPIKE DUPLICATE
PERCENT RECOVERY

Instrument ID: J
GC Column: ZB-5ms
Column ID: 0.25 mm

SDG: 70798
Non-spiked sample: 70798-1
Spike: 70798-1.MS
Spike duplicate: 70798-1.MSD

COMPOUND	MS SPIKE ADDED (ug/kg)	MSD SPIKE ADDED (ug/kg)	LOWER LIMIT	UPPER LIMIT	RPD LIMIT	NON-SPIKE RESULT (ug/kg)	SPIKE RESULT (ug/kg)	SPIKE % REC	#	SPIKE DUP RESULT (ug/kg)	SPIKE DUP % REC	#	RPD	#
Pyridine	2730	2794	13	77	25	0	1724	63		1896	68		10	
N-nitrosodimethylamine	2730	2794	20	115	25	0	1874	69		2092	75		11	
n-Decane	2730	2794	40	140	25	0	1490	55		1593	57		7	
Acetophenone	2730	2794	40	140	25	0	1814	66		1955	70		7	
Aniline	2730	2794	60	120	25	0	2046	75		2221	79		8	
Phenol	5459	5588	40	100	25	0	3965	73		4342	78		9	
2-Chlorophenol	5459	5588	45	110	25	0	3747	69		4044	72		8	
bis(2-chloroethyl) ether	2730	2794	40	105	25	0	1986	73		2229	80		12	
1,3-Dichlorobenzene	2730	2794	40	100	25	0	1749	64		1864	67		6	
1,4-Dichlorobenzene	2730	2794	35	105	25	0	1782	65		1908	68		7	
1,2-Dichlorobenzene	2730	2794	45	95	25	0	1785	65		1922	69		7	
Benzyl Alcohol	2730	2794	20	125	25	0	2207	81		2356	84		7	
2-Methylphenol	5459	5588	40	105	25	0	4138	76		4473	80		8	
bis(2-chloroisopropyl)ether	2730	2794	20	115	25	0	1832	67		2031	73		10	
3+4-Methylphenol	5459	5588	40	105	25	0	4418	81		4722	85		7	
Hexachloroethane	2730	2794	35	110	25	0	1770	65		1940	69		9	
N-nitroso-di-n-propylamine	2730	2794	40	115	25	0	2173	80		2354	84		8	
alpha-terpineol	2730	2794	40	140	25	0	1845	68		1938	69		5	
2,3-dichloroaniline	2730	2794	40	140	25	0	2226	82		2306	83		4	
Nitrobenzene	2730	2794	40	115	25	0	2046	75		2215	79		8	
Isophorone	2730	2794	45	110	25	0	2264	83		2465	88		8	
2-Nitrophenol	5459	5588	40	110	25	0	4230	77		4483	80		6	
2,4-Dimethylphenol	5459	5588	30	105	25	0	4023	74		4284	77		6	
Bis(2-chloroethoxy)methane	2730	2794	45	110	25	0	2056	75		2245	80		9	
2,4-Dichlorophenol	5459	5588	45	110	25	0	4516	83		4694	84		4	
Benzoic Acid	5459	5588	30	150	25	0	392	7	*	403	7	*	3	
1,2,4-Trichlorobenzene	2730	2794	45	110	25	0	1880	69		1973	71		5	
Naphthalene	2730	2794	40	105	25	0	1989	73		2105	75		6	
4-Chloroaniline	2730	2794	60	120	25	0	2311	85		2475	89		7	
Hexachlorobutadiene	2730	2794	40	115	25	0	1991	73		2027	73		2	
4-Chloro-3-methylphenol	5459	5588	45	115	25	0	4685	86		4933	88		5	
2-Methylnaphthalene	2730	2794	45	105	25	0	2264	83		2392	86		6	
Hexachlorocyclopentadiene	2730	2794	36	97	25	0	1857	68		2009	72		8	
2,4,6-Trichlorophenol	5459	5588	45	110	25	0	4740	87		4935	88		4	
2,4,5-Trichlorophenol	5459	5588	50	110	25	0	4954	91		5210	93		5	
2-Chloronaphthalene	2730	2794	45	105	25	0	2282	84		2390	86		5	
2-Nitroaniline	2730	2794	45	120	25	0	2688	98		3033	109		12	
2,6-Dinitrotoluene	2730	2794	50	110	25	0	2528	93		2639	94		4	
Dimethyl Phthalate	2730	2794	50	110	25	0	2497	91		2627	94		5	
Acenaphthylene	2730	2794	45	105	25	0	2396	88		2484	89		4	
3-Nitroaniline	2730	2794	25	110	25	0	2713	99		2867	103		6	
Acenaphthene	2730	2794	45	110	25	0	2318	85		2415	86		4	
2,4-dinitrophenol	5459	5588	15	130	25	0	812	15		943	17		15	
Dibenzofuran	2730	2794	50	105	25	0	2457	90		2567	92		4	
4-Nitrophenol	5459	5588	15	140	25	0	5194	95		5515	99		6	
2,4-Dinitrotoluene	2730	2794	50	115	25	0	2660	97		2760	99		4	
Fluorene	2730	2794	50	110	25	0	2374	87		2485	89		5	
Diethyl Phthalate	2730	2794	50	115	25	0	2407	88		2537	91		5	
4-Chlorophenyl phenyl ether	2730	2794	45	110	25	0	2538	93		2635	94		4	
4-Nitroaniline	2730	2794	35	115	25	0	2483	91		2637	94		6	
4,6-Dinitro-2-methylphenol	5459	5588	30	135	25	0	3448	63		3918	70		13	

SVOA FORM 3

SEMIVOLATILE ORGANIC SOIL
MATRIX SPIKE/MATRIX SPIKE DUPLICATE
PERCENT RECOVERY

Instrument ID: J
GC Column: ZB-5ms
Column ID: 0.25 mm

SDG: 70798
Non-spiked sample: 70798-1
Spike: 70798-1,MS
Spike duplicate: 70798-1,MSD

COMPOUND	MS SPIKE ADDED (ug/kg)	MSD SPIKE ADDED (ug/kg)	LOWER LIMIT	UPPER LIMIT	RPD LIMIT	NON-SPIKE RESULT (ug/kg)	SPIKE RESULT (ug/kg)	SPIKE % REC	#	SPIKE DUP RESULT (ug/kg)	SPIKE DUP % REC	#	RPD	#
n-nitrosodiphenylamine	2730	2794	50	115	25	0	2076	76		2134	76		3	
Azobenzene	2730	2794	63	115	25	0	2385	87		2592	93		8	
Biphenyl	2730	2794	60	140	25	0	2222	81		2315	83		4	
Octadecane	2730	2794	40	140	25	0	2192	80		2457	88		11	
4-bromophenyl phenyl ether	2730	2794	45	115	25	0	2505	92		2600	93		4	
Hexachlorobenzene	2730	2794	45	120	25	0	2531	93		2601	93		3	
Pentachlorophenol	5459	5588	20	120	25	0	4143	76		4456	80		7	
Phenanthrene	2730	2794	50	110	25	510	2693	80		2775	81		3	
Anthracene	2730	2794	55	105	25	99	2497	88		2618	90		5	
Carbazole	5459	5588	45	115	25	0	5343	98		5584	100		4	
Di-n-butyl phthalate	2730	2794	55	110	25	0	2634	96		2695	96		2	
Fluoranthene	2730	2794	55	115	25	655	2977	85		2962	83		0	
Benzidine	5459	5588	29	187	25	0	2799	51		3016	54		7	
Pyrene	2730	2794	45	125	25	548	3040	91		3132	93		3	
Butyl benzyl phthalate	2730	2794	50	125	25	0	2616	96		2944	105		12	
Benzo[a]anthracene	2730	2794	50	110	25	293	2712	89		2844	91		5	
Chrysene	2730	2794	55	110	25	269	2713	90		2843	92		5	
3,3'-Dichlorobenzidine	5459	5588	64	113	25	0	5228	96		5734	103		9	
Bis (2-ethylhexyl) phthalate	2730	2794	45	125	25	0	2617	96		2948	106		12	
di-n-octyl-phthalate	2730	2794	40	130	25	0	2661	97		2906	104		9	
Benzo[b] fluoranthene	2730	2794	45	115	25	298	2840	93		2867	92		1	
Benzo[k] fluoranthene	2730	2794	45	125	25	0	2527	93		2519	90		0	
Benzo[a] pyrene	2730	2794	50	110	25	215	2543	85		2592	85		2	
Indeno [1,2,3-cd] pyrene	2730	2794	40	120	25	197	2703	92		2794	93		3	
Dibenz [a,h] anthracene	2730	2794	40	125	25	0	2735	100		2814	101		3	
Benzo(g,h,i) perylene	2730	2794	40	125	25	0	2701	99		2739	98		1	

Column to be used to flag recovery and RPD values outside of QC limits
* Values outside QC limits

Non-spike result of "0" used in place of "U" to allow calculation of spike recovery.

Comments: _____

VPH
DATA SUMMARIES

analytics environmental laboratory LLC

195 Commerce Way
Portsmouth, New Hampshire 03801
603-436-5111 Fax 603-430-2151
800-929-9906

Mr. Scott Nesbit
Terta Tech NUS, Inc.
661 Andersen Drive, Foster Plaza 7
Pittsburgh PA 15220

August 31, 2011

CLIENT SAMPLE ID

Project Name: LMC Wilmington

Project Number: 1121C03346
Client Sample ID: LabQC

SAMPLE DATA

Lab Sample ID: MBV083011K
Matrix: Soil
Percent Solid: 100
Dilution Factor: 50.0
Collection Date:
Lab Receipt Date:
Analysis Date: 08/30/11

VPH ANALYTICAL RESULTS

RANGE/TARGET ANALYTE	Elution Range	RL	Units	Result
Unadjusted C5-C8 Aliphatics[1]	N/A	2500	µg/kg	U
Unadjusted C9-C12 Aliphatics[1]	N/A	2500	µg/kg	U
Benzene	C5-C8	100	µg/kg	U
Ethylbenzene	C9-C12	100	µg/kg	U
Methyl-tert-butyl ether	C5-C8	100	µg/kg	U
Naphthalene	N/A	100	µg/kg	U
Toluene	C5-C8	100	µg/kg	U
m- & p-Xylenes	C9-C12	200	µg/kg	U
o-Xylene	C9-C12	100	µg/kg	U
C5-C8 Aliphatics Hydrocarbons[1,2]	N/A	2500	µg/kg	U
C9-C12 Aliphatic Hydrocarbons[1,3]	N/A	2500	µg/kg	U
C9-C10 Aromatic Hydrocarbons[1]	N/A	500	µg/kg	U
Surrogate % Recovery (Trifluorotoluene) PID				95
Surrogate % Recovery (Trifluorotoluene) FID				99
Surrogate Acceptance Range				70-130%

[1]Hydrocarbon Range data exclude concentrations of any surrogate(s) and/or internal standards eluting in that range.
[2]C5-C8 Aliphatic Hydrocarbons exclude the concentration of Target Analytes eluting in that range
[3]C9-C12 Aliphatic Hydrocarbons exclude conc. of Target Analytes eluting in that range and conc. of C9-C10 Aromatic Hydrocarbons.
RL = Report Limit
U=Undetected J=Estimated E=Exceeds Calibration Range B=Detected in Blank

METHODOLOGY: MADEP Volatile Petroleum Hydrocarbons (VPH), ORS Division of Environmental Analysis,Revision 1.1 May 2004.

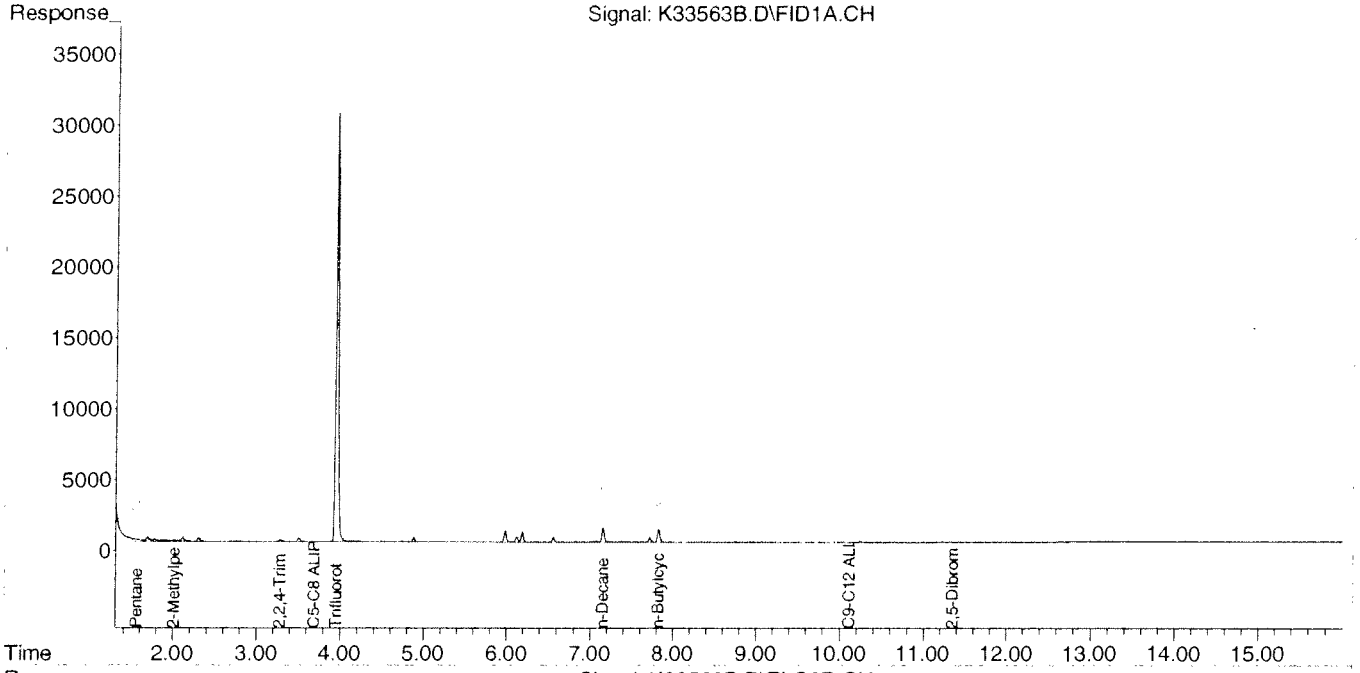
COMMENTS: Samples were received in accordance with method criteria unless noted on the sample receipt checklist. Results are expressed on a moisture corrected and dry weight basis.

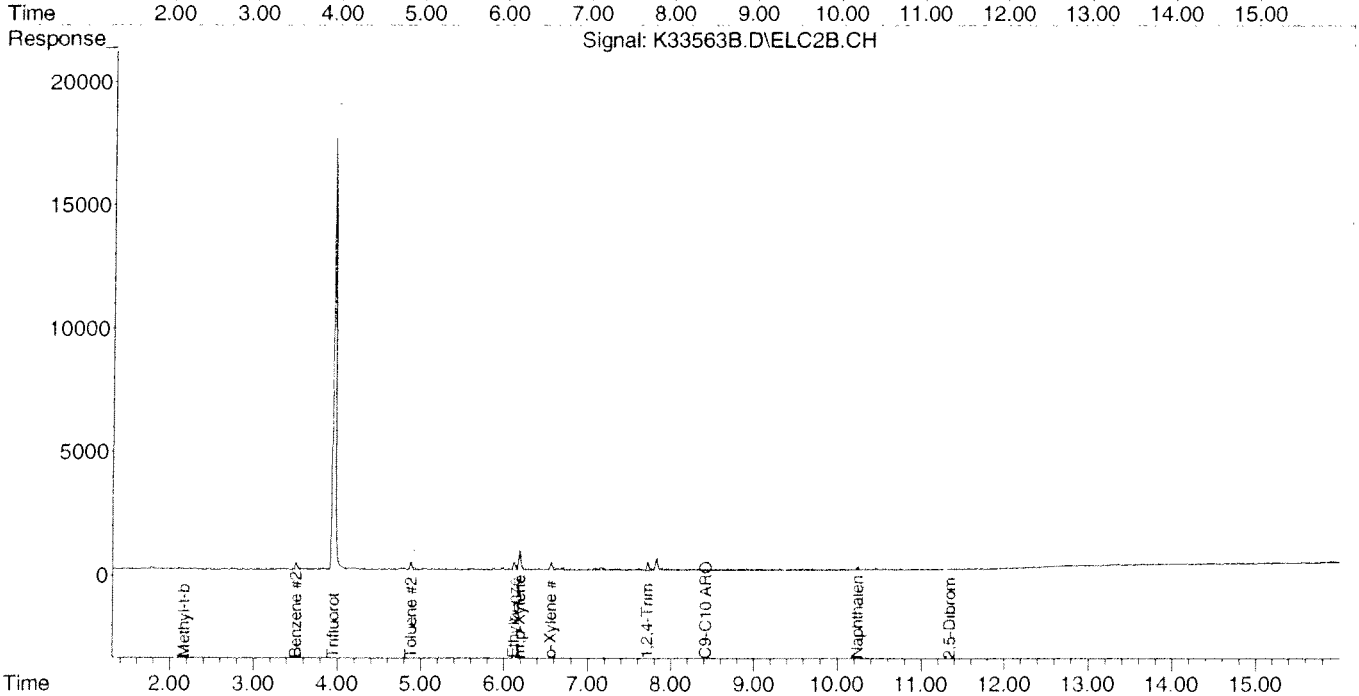
Authorized signature: 

Data Path : C:\msdchem\1\DATA\083011-K\
Data File : K33563B.D
Signal(s) : Signal #1: FID1A.CH Signal #2: ELC2B.CH
Acq On   : 30 Aug 2011 11:07 am
Operator : JJL
Sample   : MBV083011K
Misc   : 100,10.00,SOIL
ALS Vial : 6   Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Aug 30 11:26:44 2011
Quant Method : C:\msdchem\1\METHODS\VPHTFT082611.M
Quant Title : Volatile Petroleum Hydrocarbons (VPH) MA DEP 2004
QLast Update : Mon Aug 29 07:37:33 2011
Response via : Initial Calibration
Integrator: ChemStation   6890 Scale Mode: Small noise peaks clipped

Volume Inj.   :
Signal #1 Phase :   Signal #2 Phase:
Signal #1 Info :   Signal #2 Info :





analytics environmental laboratory LLC

195 Commerce Way
Portsmouth, New Hampshire 03801
603-436-5111 Fax 603-430-2151
800-929-9906

Mr. Scott Nesbit
Terta Tech NUS, Inc.
661 Andersen Drive, Foster Plaza 7
Pittsburgh PA 15220

August 31, 2011

CLIENT SAMPLE ID

Project Name: LMC Wilmington

Project Number: 1121C03346
Client Sample ID: LMC-SO-PROCESSED

SAMPLE DATA

Lab Sample ID: 70798-1
Matrix: Solid
Percent Solid: 94
Dilution Factor: 57
Collection Date: 08/25/11
Lab Receipt Date: 08/25/11
Analysis Date: 08/30/11

VPH ANALYTICAL RESULTS

RANGE/TARGET ANALYTE	Elution Range	RL	Units	Result
Unadjusted C5-C8 Aliphatics[1]	N/A	2838	µg/kg	U
Unadjusted C9-C12 Aliphatics[1]	N/A	2838	µg/kg	U
Benzene	C5-C8	114	µg/kg	U
Ethylbenzene	C9-C12	114	µg/kg	U
Methyl-tert-butyl ether	C5-C8	114	µg/kg	U
Naphthalene	N/A	114	µg/kg	U
Toluene	C5-C8	114	µg/kg	U
m- & p-Xylenes	C9-C12	227	µg/kg	U
o-Xylene	C9-C12	114	µg/kg	U
C5-C8 Aliphatics Hydrocarbons[1,2]	N/A	2838	µg/kg	U
C9-C12 Aliphatic Hydrocarbons[1,3]	N/A	2838	µg/kg	U
C9-C10 Aromatic Hydrocarbons[1]	N/A	568	µg/kg	U
Surrogate % Recovery (2,5-Dibromotoluene) PID				
Surrogate % Recovery (2,5-Dibromotoluene) FID				
Surrogate Acceptance Range				70-130%

[1]Hydrocarbon Range data exclude concentrations of any surrogate(s) and/or internal standards eluting in that range.
[2]C5-C8 Aliphatic Hydrocarbons exclude the concentration of Target Analytes eluting in that range
[3]C9-C12 Aliphatic Hydrocarbons exclude conc. of Target Analytes eluting in that range and conc. of C9-C10 Aromatic Hydrocarbons.
RL = Report Limit
U=Undetected J=Estimated E=Exceeds Calibration Range B=Detected in Blank

METHODOLOGY: MADEP Volatile Petroleum Hydrocarbons (VPH), ORS Division of Environmental Analysis,Revision 1.1 May 2004.

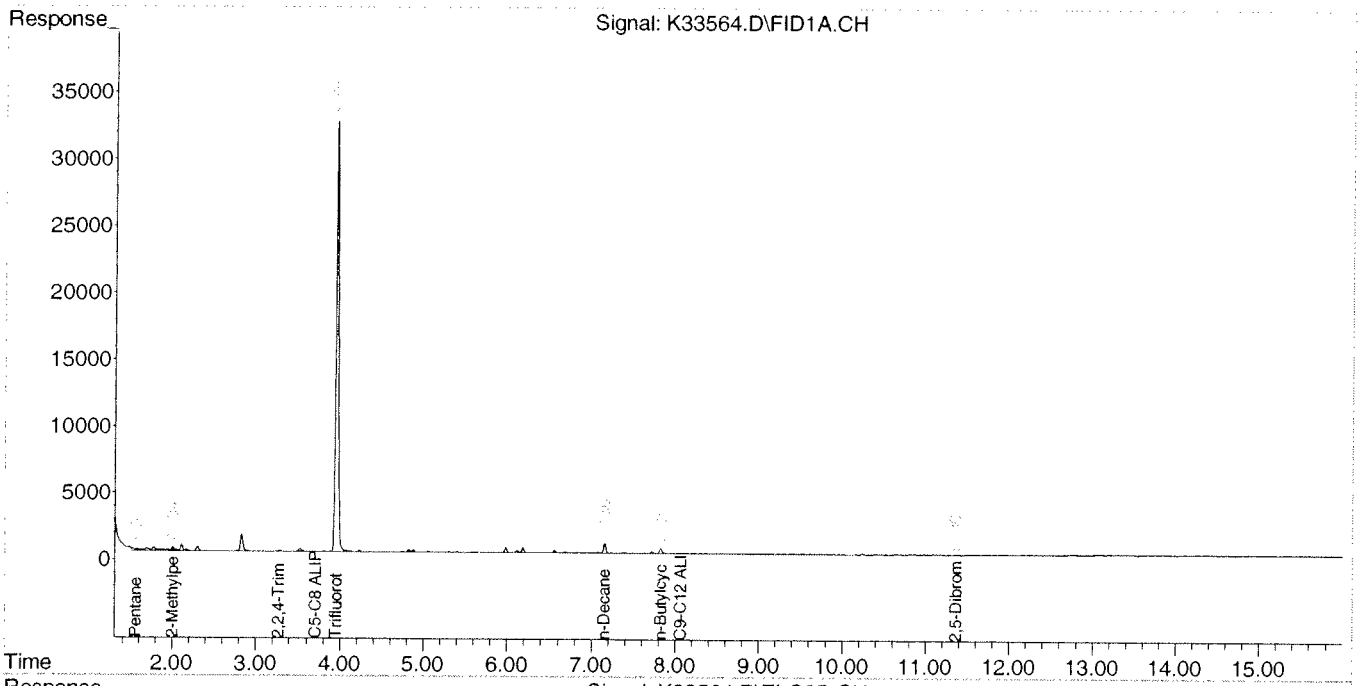
COMMENTS: Samples were received in accordance with method criteria unless noted on the sample receipt checklist. Results are expressed on a moisture corrected and dry weight basis.

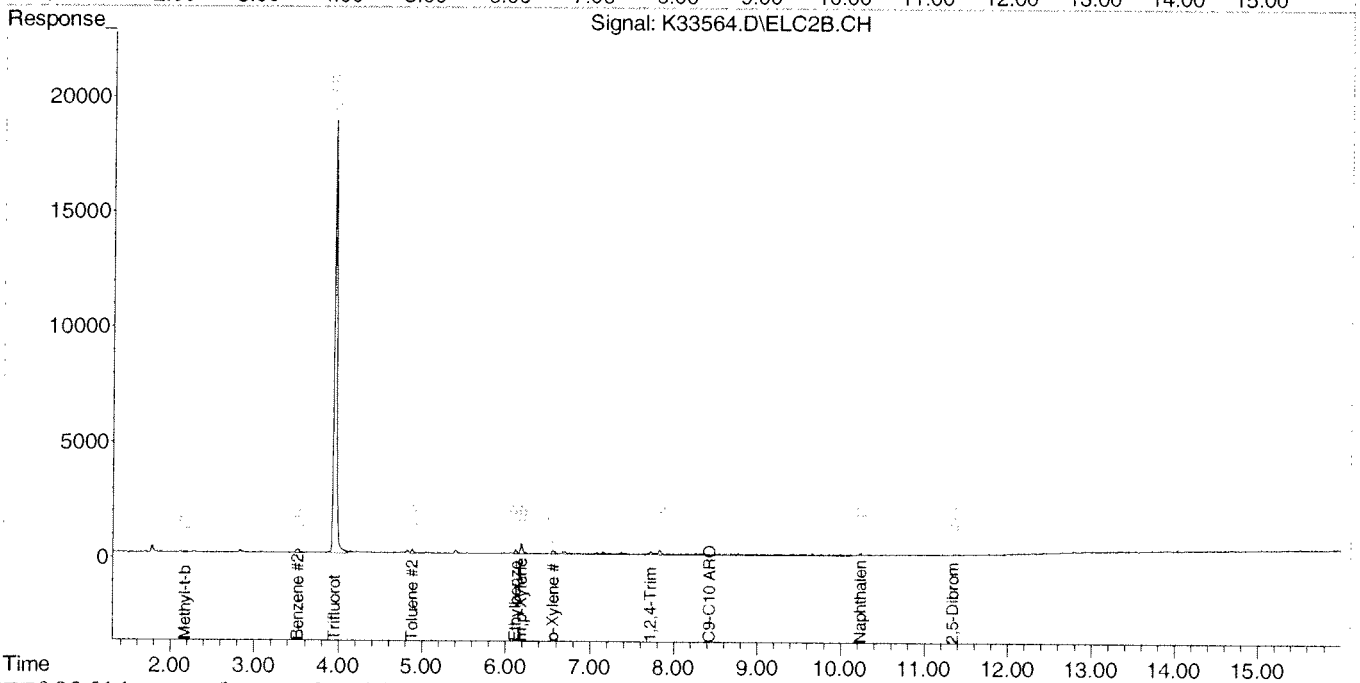
Authorized signature: _____

Data Path : C:\msdchem\1\DATA\083011-K\
Data File : K33564.D
Signal(s) : Signal #1: FID1A.CH Signal #2: ELC2B.CH
Acq On : 30 Aug 2011 11:45 am
Operator : JJL
Sample : 70798-1
Misc : 100,9.97,SOIL
ALS Vial : 7 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Aug 30 12:04:09 2011
Quant Method : C:\msdchem\1\METHODS\VPHTFT082611.M
Quant Title : Volatile Petroleum Hydrocarbons (VPH) MA DEP 2004
QLast Update : Mon Aug 29 07:37:33 2011
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Small noise peaks clipped

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :





VPH
QC FORMS

VOLATILE PETROLEUM HYDROCARBONS SOIL
LABORATORY CONTROL/LABORATORY CONTROL DUPLICATE
PERCENT RECOVERY

Instrument ID: K
GC Column: RTX-502.2
Column ID: 0.25 mm

SDG:
Non-spiked sample: MBV083011K
Spike: LSV083011K
Spike duplicate: LSV083011K2

COMPOUND	LCS SPIKE ADDED (ug/kg)	LCSD SPIKE ADDED (ug/kg)	LOWER LIMIT	UPPER LIMIT	RPD LIMIT	NON-SPIKE RESULT (ug/kg)	SPIKE RESULT (ug/kg)	SPIKE % REC	#	SPIKE DUP RESULT (ug/kg)	SPIKE DUP % REC	#	RPD	#
Pentane	5000	5000	70	130	25	0	4530	91		4467	89		1	
2-Methylpentane	5000	5000	70	130	25	0	4970	99		4905	98		1	
2,2,4-Trimethylpentane	5000	5000	70	130	25	0	5087	102		4907	98		4	
n-Decane	5000	5000	70	130	25	0	5779	116		6135	123		6	
n-Butylcyclohexane	5000	5000	70	130	25	0	5553	111		5797	116		4	
Methyl-t-butylether #2	5000	5000	70	130	25	0	4444	89		4624	92		4	
Benzene #2	5000	5000	70	130	25	0	4452	89		4491	90		1	
Toluene #2	5000	5000	70	130	25	0	4290	86		4343	87		1	
Ethylbenzene #2	5000	5000	70	130	25	0	4519	90		4555	91		1	
m,p-Xylene #2	10000	10000	70	130	25	0	9373	94		9428	94		1	
o-Xylene #2	5000	5000	70	130	25	0	4523	90		4500	90		1	
1,2,4-Trimethylbenzene #2	5000	5000	70	130	25	0	4948	99		4985	100		1	
Naphthalene #2	5000	5000	70	130	25	0	4557	91		5069	101		11	
C5-C8 Aliphatics	15000	15000	70	130	25	0	14588	97		14279	95		2	
C9-C12 Aliphatics	10000	10000	70	130	25	0	11332	113		11932	119		5	
C9-C10 Aromatics #2	5000	5000	70	130	25	0	4948	99		4985	100		1	

Column to be used to flag recovery and RPD values outside of QC limits
* Values outside QC limits

Non-spike result of "0" used in place of "U" to allow calculation of spike recovery.

Comments: _____

EPH
DATA SUMMARIES

analytics environmental laboratory LLC

195 Commerce Way
Portsmouth, New Hampshire 03801
603-436-5111 Fax 603-430-2151
800-929-9906

August 30, 2011

Mr. Scott Nesbit
Terta Tech NUS, Inc.
661 Andersen Drive, Foster Plaza 7
Pittsburgh PA 15220

CLIENT SAMPLE ID

Project Name: LMC Wilmington

Project Number: 1121C03346
Client Sample ID: LabQC

SAMPLE DATA

Lab Sample ID: B082911EASE
Matrix: Solid
Percent Solid: 100
Dilution Factor: 1.0
Collection Date:
Lab Receipt Date:
Extraction Date: 08/29/11
Analysis Date: 08/30/11

EPH ANALYTICAL RESULTS

RANGE/TARGET ANALYTE		RL	Units	Result
Unadjusted C11-C22 Aromatics[1]		26700	µg/kg	U
Diesel PAH Analytes	Naphthalene	267	µg/kg	U
	2-Methylnaphthalene	267	µg/kg	U
	Phenanthrene	267	µg/kg	U
	Acenaphthene	267	µg/kg	U
Other Target PAH Analytes	Acenaphthylene	267	µg/kg	U
	Fluorene	267	µg/kg	U
	Anthracene	267	µg/kg	U
	Fluoranthene	267	µg/kg	U
	Pyrene	267	µg/kg	U
	Benzo[a]anthracene	267	µg/kg	U
	Chrysene	267	µg/kg	U
	Benzo[b]fluoranthene	267	µg/kg	U
	Benzo[k]fluoranthene	267	µg/kg	U
	Benzo[a]pyrene	267	µg/kg	U
	Indeno[1,2,3-cd]pyrene	267	µg/kg	U
	Dibenzo[a,h]anthracene	267	µg/kg	U
	Benzo[g,h,i]perylene	267	µg/kg	U
C9-C18 Aliphatic Hydrocarbons[1]		26700	µg/kg	U
C19-C36 Aliphatic Hydrocarbons[1]		26700	µg/kg	U
C11-C22 Aromatic Hydrocarbons[1,2]		26700	µg/kg	U
Aliphatic Surrogate % Recovery (1-Chloro-octadecane)				71
Aromatic Surrogate % Recovery (O-Terphenyl)				86
Sample Surrogate Acceptance Range		--	--	40-140%
#1 Fractionation Surrogate % Recovery (2-Fluorobiphenyl)				80
#2 Fractionation Surrogate % Recovery (2-Bromonaphthalene)				67
Fractionation Surrogate Acceptance Range		--	--	40-140%

[1]Hydrocarbon Range data exclude concentrations of any surrogate(s) and/or internal standards eluting in that
[2]C11-C22 Aromatic Hydrocarbons exclude the concentration of Target PAH Analytes.
RL = Report Limit
U=Undetected J=Estimated E=Exceeds Calibration Range B=Detected in Blank

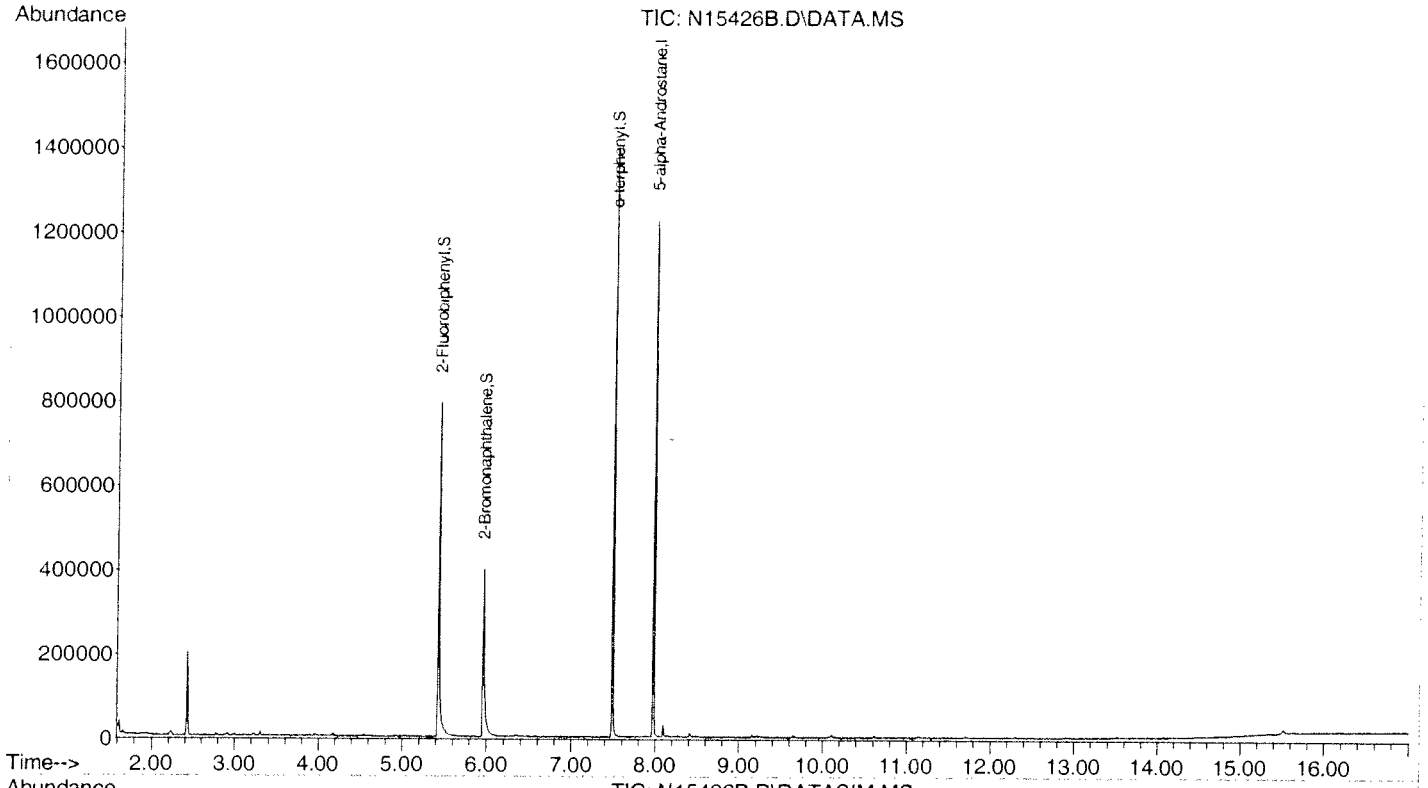
METHODOLOGY: MADEP Extractable Petroleum Hydrocarbons (EPH), ORS Division of Environmental Analysis, May 2004 Revision 1.1. Samples were extracted in accordance with SW-846 Method 3545

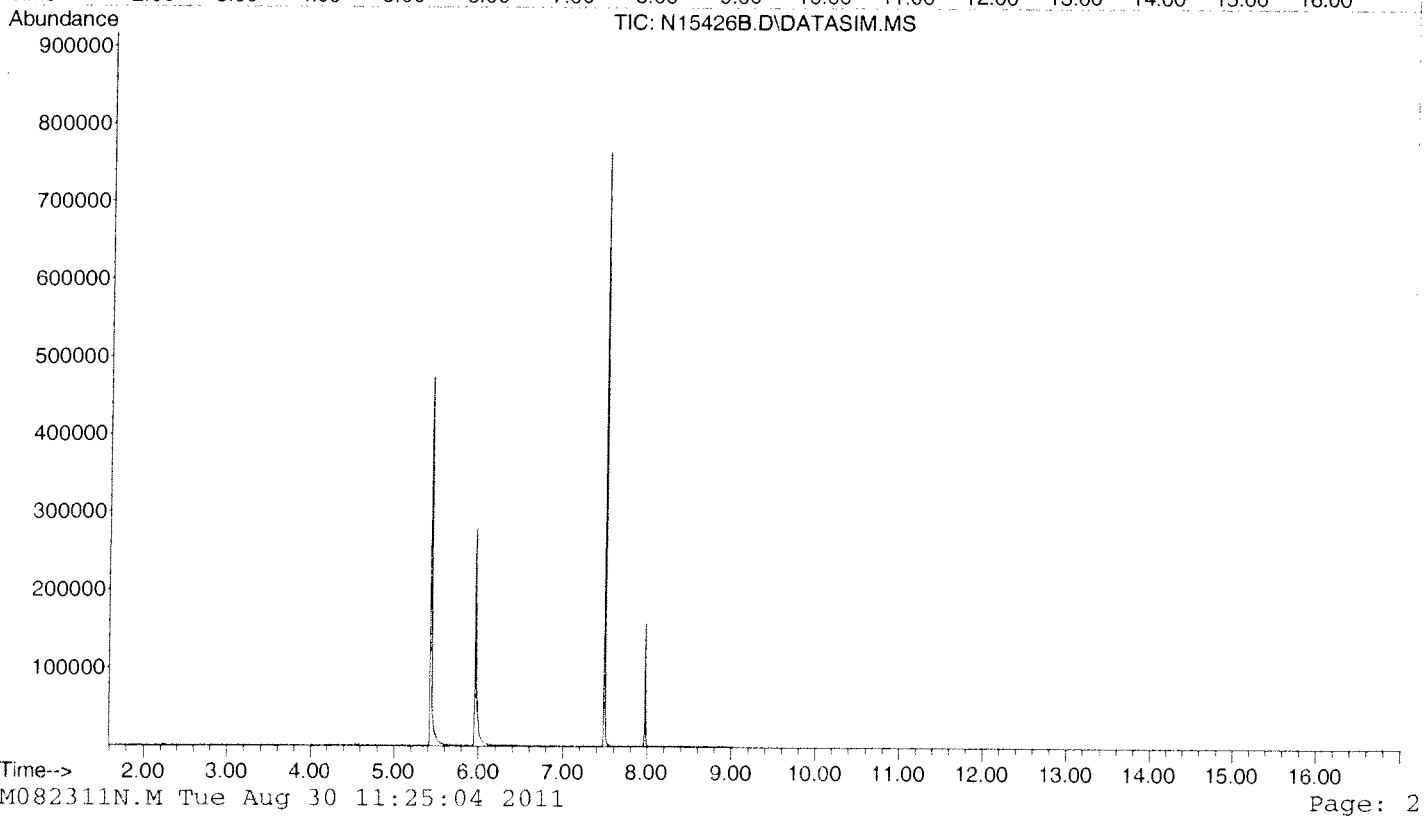
COMMENTS: EPH analyses utilized the use of a GC/MS system to detect and quantify ranges and target analytes. Samples were received in accordance with method criteria unless noted on the sample receipt checklist.
Results are expressed on a dry weight basis.

SIGNATURE: Angelina Richard

Data Path : C:\msdchem\1\DATA\083011-N\
Data File : N15426B.D
Acq On : 30 Aug 2011 11:08 am
Operator : MT
Sample : B082911EASE
Misc : SOIL,ARO
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Aug 30 11:25:04 2011
Quant Method : C:\msdchem\1\METHODS\ARM082311N.M
Quant Title : EPH MS AROMATICS
QLast Update : Wed Aug 24 04:14:25 2011
Response via : Initial Calibration

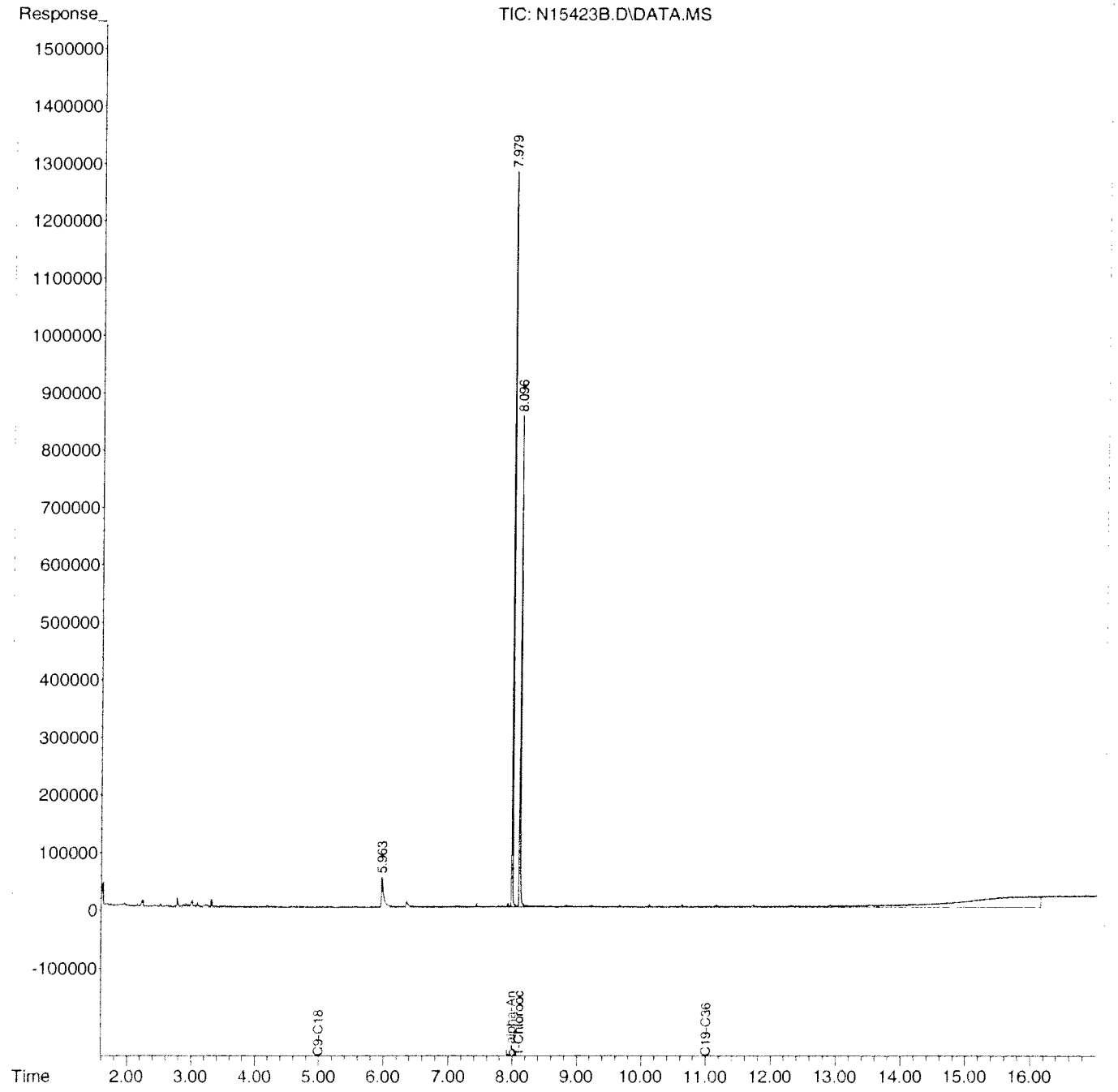




Data Path : C:\msdchem\1\DATA\083011-N\
Data File : N15423B.D
Signal(s) : DATA.MS
Acq On : 30 Aug 2011 10:06 am
Operator : MT
Sample : B082911EASE
Misc : SOIL,ALI
ALS Vial : 6 Sample Multiplier: 1

Integration File: rteint.p
Quant Time: Aug 30 10:22:22 2011
Quant Method : C:\msdchem\1\METHODS\ALG080611N.M
Quant Title : EPH GC ALIPHATICS
QLast Update : Sun Aug 07 09:15:03 2011
Response via : Initial Calibration
Integrator: RTE

Volume Inj. :
Signal Phase :
Signal Info :



analytics environmental laboratory LLC

195 Commerce Way
Portsmouth, New Hampshire 03801
603-436-5111 Fax 603-430-2151
800-929-9906

Mr. Scott Nesbit
Terta Tech NUS, Inc.
661 Andersen Drive, Foster Plaza 7
Pittsburgh PA 15220

August 30, 2011

CLIENT SAMPLE ID

Project Name: LMC Wilmington

Project Number: 1121C03346
Client Sample ID: LMC-SO-PROCESSED

SAMPLE DATA

Lab Sample ID: 70798-1
Matrix: Solid
Percent Solid: 94
Dilution Factor: 1.0
Collection Date: 08/25/11
Lab Receipt Date: 08/25/11
Extraction Date: 08/29/11
Analysis Date: 08/30/11

EPH ANALYTICAL RESULTS

RANGE/TARGET ANALYTE		RL	Units	Result
Unadjusted C11-C22 Aromatics[1]		27500	µg/kg	**38600**
Diesel PAH Analytes	Naphthalene	275	µg/kg	U
	2-Methylnaphthalene	275	µg/kg	U
	Phenanthrene	275	µg/kg	**629**
	Acenaphthene	275	µg/kg	U
Other Target PAH Analytes	Acenaphthylene	275	µg/kg	U
	Fluorene	275	µg/kg	U
	Anthracene	275	µg/kg	U
	Fluoranthene	275	µg/kg	**747**
	Pyrene	275	µg/kg	**782**
	Benzo[a]anthracene	275	µg/kg	**378**
	Chrysene	275	µg/kg	**435**
	Benzo[b]fluoranthene	275	µg/kg	**395**
	Benzo[k]fluoranthene	275	µg/kg	**144 J**
	Benzo[a]pyrene	275	µg/kg	**339**
	Indeno[1,2,3-cd]pyrene	275	µg/kg	**216 J**
	Dibenzo[a,h]anthracene	275	µg/kg	U
	Benzo[g,h,i]perylene	275	µg/kg	**203 J**
C9-C18 Aliphatic Hydrocarbons[1]		27500	µg/kg	U
C19-C36 Aliphatic Hydrocarbons[1]		27500	µg/kg	**41200**
C11-C22 Aromatic Hydrocarbons[1,2]		27500	µg/kg	**34300**
Aliphatic Surrogate % Recovery (1-Chloro-octadecane)				65
Aromatic Surrogate % Recovery (O-Terphenyl)				75
Sample Surrogate Acceptance Range		--	--	40-140%
#1 Fractionation Surrogate % Recovery (2-Fluorobiphenyl)				71
#2 Fractionation Surrogate % Recovery (2-Bromonaphthalene)				66
Fractionation Surrogate Acceptance Range		--	--	40-140%

[1]Hydrocarbon Range data exclude concentrations of any surrogate(s) and/or internal standards eluting in that
[2]C11-C22 Aromatic Hydrocarbons exclude the concentration of Target PAH Analytes.
RL = Report Limit
U=Undetected J=Estimated E=Exceeds Calibration Range B=Detected in Blank

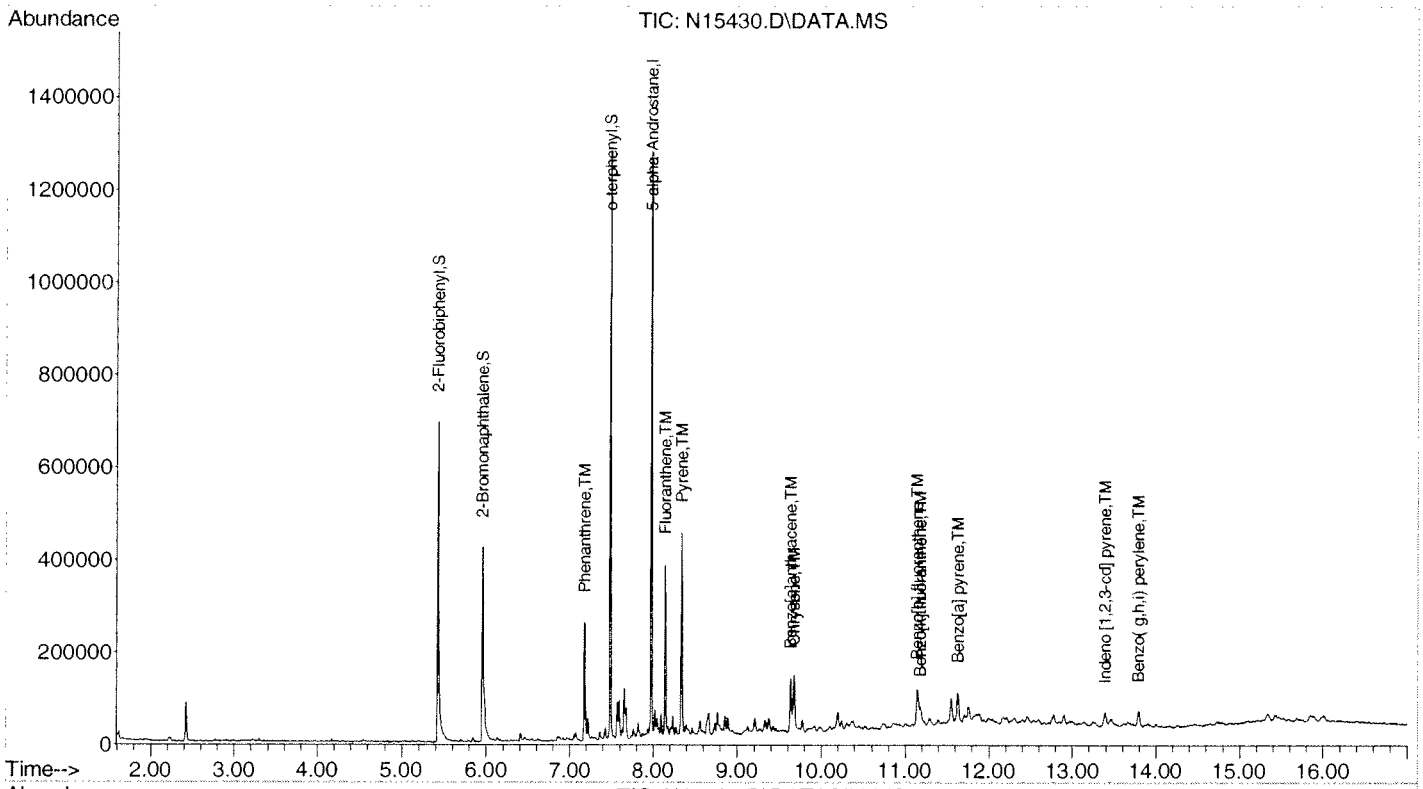
METHODOLOGY: MADEP Extractable Petroleum Hydrocarbons (EPH), ORS Division of Environmental Analysis, May 2004 Revision 1.1. Samples were extracted in accordance with SW-846 Method 3545

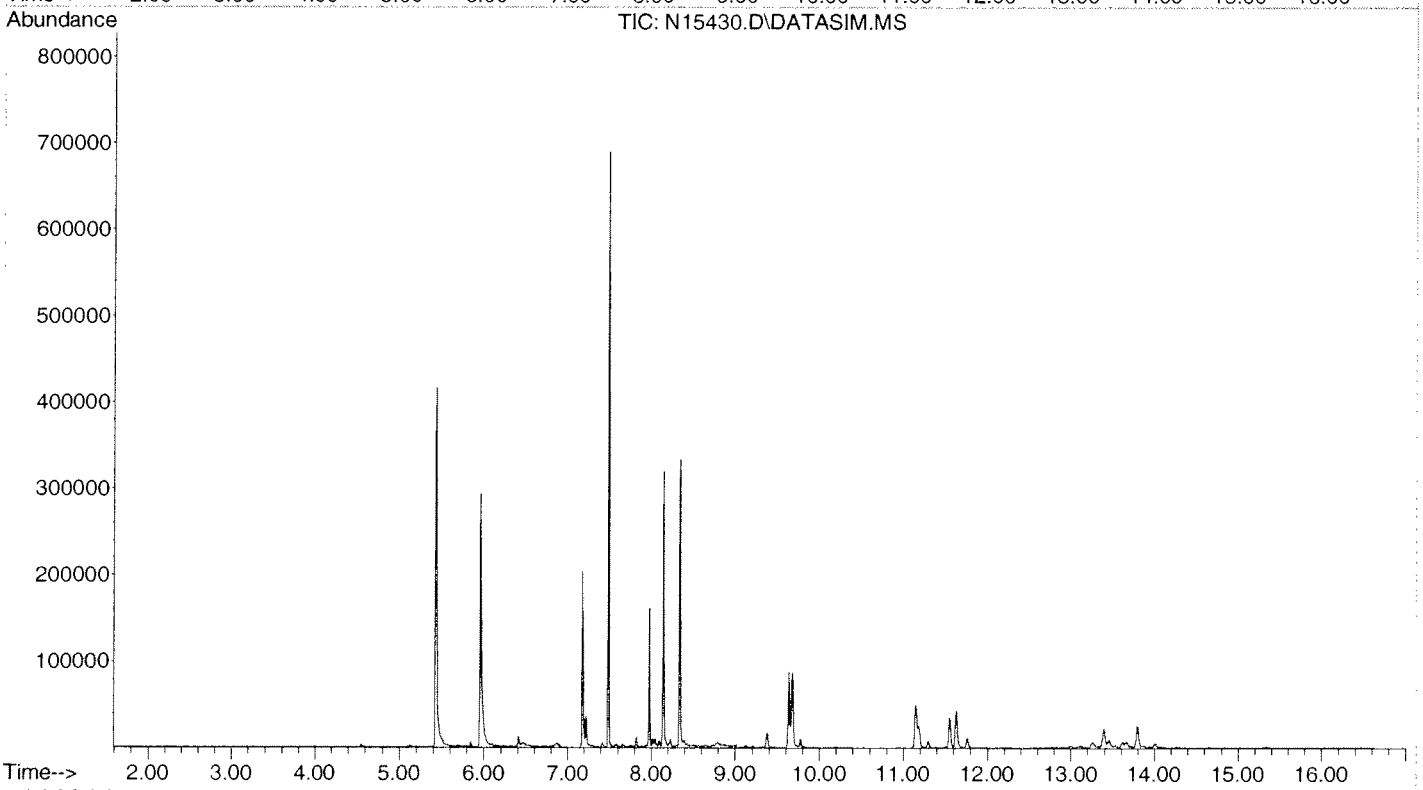
COMMENTS: EPH analyses utilized the use of a GC/MS system to detect and quantify ranges and target analytes. Samples were received in accordance with method criteria unless noted on the sample receipt checklist.
Results are expressed on a dry weight basis.

SIGNATURE: Angelina Richard

Data Path : C:\msdchem\1\DATA\083011-N\
Data File : N15430.D
Acq On : 30 Aug 2011 12:31 pm
Operator : MT
Sample : 70798-1
Misc : SOIL,ARO
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Aug 30 13:15:19 2011
Quant Method : C:\msdchem\1\METHODS\ARM082311N.M
Quant Title : EPH MS AROMATICS
QLast Update : Wed Aug 24 04:14:25 2011
Response via : Initial Calibration

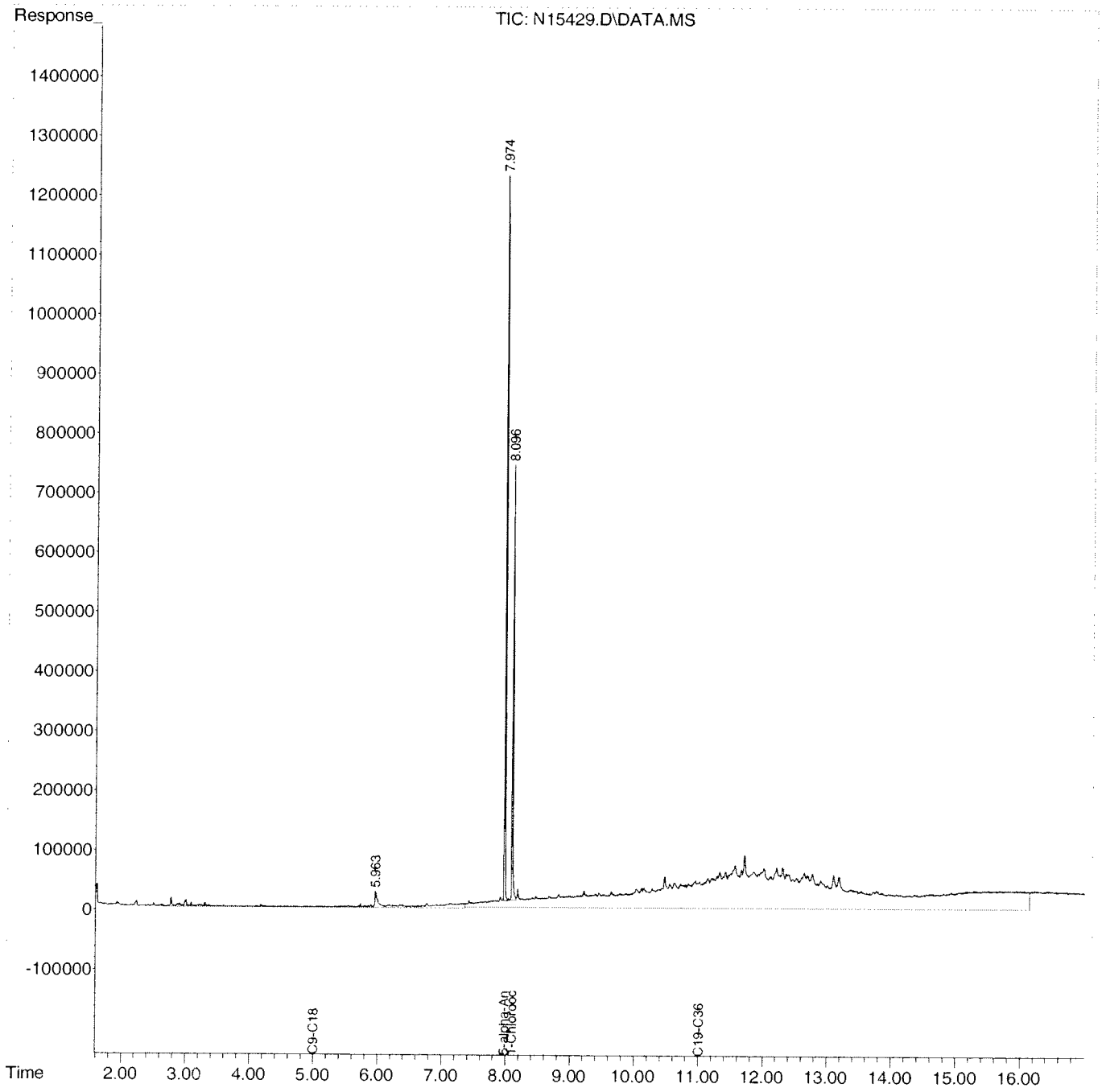




Data Path : C:\msdchem\1\DATA\083011-N\
Data File : N15429.D
Signal(s) : DATA.MS
Acq On : 30 Aug 2011 12:11 pm
Operator : MT
Sample : 70798-1
Misc : SOIL,ALI
ALS Vial : 12 Sample Multiplier: 1

Integration File: rteint.p
Quant Time: Aug 30 13:13:29 2011
Quant Method : C:\msdchem\1\METHODS\ALG080611N.M
Quant Title : EPH GC ALIPHATICS
QLast Update : Sun Aug 07 09:15:03 2011
Response via : Initial Calibration
Integrator: RTE

Volume Inj. :
Signal Phase :
Signal Info :



EPH
QC FORMS

EPH ALIPHATICS
SOIL MATRIX SPIKE
MATRIX SPIKE DUPLICATE
PERCENT RECOVERY

Instrument ID: N
GC Column: ZB-5ms
Column ID: 0.25 mm

SDG: 70798
Non-spiked sample: B082911EASE
Spike: L082911EASE
Spike duplicate: LD082911EASE

COMPOUND	LCS SPIKE ADDED (ug/kg)	LCD SPIKE ADDED (ug/kg)	LOWER LIMIT	UPPER LIMIT	RPD LIMIT	NON-SPIKE RESULT (ug/kg)	SPIKE RESULT (ug/kg)	SPIKE % REC	#	SPIKE DUP RESULT (ug/kg)	SPIKE DUP % REC	#	RPD	#
C-9	3333	3333	30	140	25	0	1539	46		1620	49		5	
C-10	3333	3333	40	140	25	0	1771	53		1864	56		5	
C-12	3333	3333	40	140	25	0	1952	59		2081	62		6	
C-14	3333	3333	40	140	25	0	2076	62		2200	66		6	
C-16	3333	3333	40	140	25	0	2232	67		2340	70		5	
C-18	3333	3333	40	140	25	0	2303	69		2475	74		7	
C-19	3333	3333	40	140	25	0	2217	67		2367	71		7	
C-20	3333	3333	40	140	25	0	2427	73		2536	76		4	
C-22	3333	3333	40	140	25	0	2385	72		2557	77		7	
C-24	3333	3333	40	140	25	0	2373	71		2552	77		7	
C-26	3333	3333	40	140	25	0	2324	70		2487	75		7	
C-28	3333	3333	40	140	25	0	2157	65		2387	72		10	
C-30	3333	3333	40	140	25	0	2073	62		2297	69		10	
C-36	3333	3333	40	140	25	0	2097	63		2372	71		12	
C9-C18 Aliphatics	20000	20000	40	140	25	0	11872	59		12580	63		6	
C19-C36 Aliphatics	26667	26667	40	140	25	0	18055	68		19555	73		8	

Column to be used to flag recovery and RPD values outside of QC limits
* Values outside QC limits

Non-spike result of "0" used in place of "U" to allow calculation of spike recovery.

Comments: _____

EPH AROMATICS
SOIL LABORATORY CONTROL SAMPLE
LABORATORY CONTROL SAMPLE DUPLICATE
PERCENT RECOVERY

Instrument ID: N
GC Column: ZB-5ms
Column ID: 0.25 mm

SDG: 70798
Non-spiked sample: B082911EASE
Spike: L082911EASE
Spike duplicate: LD082911EASE

COMPOUND	LCS SPIKE ADDED (ug/kg)	LCSD SPIKE ADDED (ug/kg)	LOWER LIMIT	UPPER LIMIT	RPD LIMIT	NON-SPIKE RESULT (ug/kg)	SPIKE RESULT (ug/kg)	SPIKE % REC	#	SPIKE DUP RESULT (ug/kg)	SPIKE DUP % REC	#	RPD	#
Naphthalene	3333	3333	40	140	30	0	2053	62		2406	72		16	
2-Methylnaphthalene	3333	3333	40	140	30	0	2184	66		2554	77		16	
Acenaphthylene	3333	3333	40	140	30	0	2366	71		2674	80		12	
Acenaphthene	3333	3333	40	140	30	0	2372	71		2684	81		12	
Fluorene	3333	3333	40	140	30	0	2591	78		2820	85		8	
Phenanthrene	3333	3333	40	140	30	0	2821	85		3007	90		6	
Anthracene	3333	3333	40	140	30	0	2823	85		2967	89		5	
Fluoranthene	3333	3333	40	140	30	0	2882	86		3036	91		5	
Pyrene	3333	3333	40	140	30	0	2878	86		3053	92		6	
Benzo[a]anthracene	3333	3333	40	140	30	0	2957	89		3152	95		6	
Chrysene	3333	3333	40	140	30	0	2896	87		3042	91		5	
Benzo[b] fluoranthene	3333	3333	40	140	30	0	2956	89		3101	93		5	
Benzo[k] fluoranthene	3333	3333	40	140	30	0	2935	88		3154	95		7	
Benzo[a] pyrene	3333	3333	40	140	30	0	2980	89		3160	95		6	
Indeno [1,2,3-cd] pyrene	3333	3333	40	140	30	0	3126	94		3326	100		6	
Dibenz [a,h] anthracene	3333	3333	40	140	30	0	3198	96		3420	103		7	
Benzo(g,h,i) perylene	3333	3333	40	140	30	0	3097	93		3351	101		8	

Column to be used to flag recovery and RPD values outside of QC limits
* Values outside QC limits

Non-spike result of "0" used in place of "U" to allow calculation of spike recovery.

Comments: _____

EPH AROMATIC BREAKTHOUGH REPORT
OF ALIPHATIC LABORATORY CONTROL SAMPLE

Instrument ID: N
GC Column: ZB-5ms
Column ID: 0.25 mm

SDG: 70798
Aliphatic LCS: L082911EASE
Aromatic LCS: L082911EASE

COMPOUND	LOWER LIMIT	UPPER LIMIT	ALIPHATIC RESULT (ug/mL)	AROMATIC RESULT (ug/mL)	% BREAKTHROUGH	#
Naphthalene	0	5	0.00	15.4	0.0	
2-Methylnaphthalene	0	5	0.00	16.4	0.0	

Column to be used to flag breakthrough values outside of QC limits
* Values outside QC limits

Non-spike result of "0" used in place of "U" to allow calculation of spike recovery

Comments: _____

_____

EPH AROMATIC BREAKTHOUGH REPORT
OF ALIPHATIC LABORATORY CONTROL SAMPLE

Instrument ID: N
GC Column: ZB-5ms
Column ID: 0.25 mm

SDG: 70798
Aliphatic LCS: LD082911EASE
Aromatic LCS: LD082911EASE

COMPOUND	LOWER LIMIT	UPPER LIMIT	ALIPHATIC RESULT (ug/mL)	AROMATIC RESULT (ug/mL)	% BREAKTHROUGH	#
Naphthalene	0	5	0.00	18.0	0.0	
2-Methylnaphthalene	0	5	0.00	19.2	0.0	

Column to be used to flag breakthrough values outside of QC limits
* Values outside QC limits

Non-spike result of "0" used in place of "U" to allow calculation of spike recovery

Comments: _____

EPH AROMATICS
SOIL MATRIX SPIKE/MATRIX SPIKE DUPLICATE
PERCENT RECOVERY

Instrument ID: N
GC Column: ZB-5ms
Column ID: 0.25 mm

SDG: 70798
Non-spiked sample: 70798-1
Spike: 70798-1,MS
Spike duplicate: 70798-1,MSD

COMPOUND	MS SPIKE ADDED (ug/kg)	MSD SPIKE ADDED (ug/kg)	LOWER LIMIT	UPPER LIMIT	RPD LIMIT	NON-SPIKE RESULT (ug/kg)	SPIKE RESULT (ug/kg)	SPIKE % REC	#	SPIKE DUP RESULT (ug/kg)	SPIKE DUP % REC	#	RPD	#
Naphthalene	3371	3532	40	140	50	0	2035	60		2678	76		27	
2-Methylnaphthalene	3371	3532	40	140	50	0	2207	65		2752	78		22	
Acenaphthylene	3371	3532	40	140	50	0	2423	72		3026	86		22	
Acenaphthene	3371	3532	40	140	50	0	2444	73		2993	85		20	
Fluorene	3371	3532	40	140	50	0	2689	80		3199	91		17	
Phenanthrene	3371	3532	40	140	50	629	3316	80		4239	102		24	
Anthracene	3371	3532	40	140	50	0	2929	87		3448	98		16	
Fluoranthene	3371	3532	40	140	50	747	3410	79		4337	102		24	
Pyrene	3371	3532	40	140	50	782	3410	78		4218	97		21	
Benzo[a]anthracene	3371	3532	40	140	50	378	3273	86		3961	101		19	
Chrysene	3371	3532	40	140	50	435	3075	78		3685	92		18	
Benzo[b] fluoranthene	3371	3532	40	140	50	395	3255	85		3876	99		17	
Benzo[k] fluoranthene	3371	3532	40	140	50	144	3019	85		3600	98		18	
Benzo[a] pyrene	3371	3532	40	140	50	339	3231	86		3839	99		17	
Indeno [1,2,3-cd] pyrene	3371	3532	40	140	50	216	3433	95		4013	107		16	
Dibenz [a,h] anthracene	3371	3532	40	140	50	0	3377	100		3844	109		13	
Benzo(g,h,i) perylene	3371	3532	40	140	50	203	3390	95		3911	105		14	

Column to be used to flag recovery and RPD values outside of QC limits
* Values outside QC limits

Non-spike result of "0" used in place of "U" to allow calculation of spike recovery.

Comments: _____

EPH ALIPHATICS
SOIL MATRIX SPIKE
MATRIX SPIKE DUPLICATE
PERCENT RECOVERY

Instrument ID: N
GC Column: ZB-5ms
Column ID: 0.25 mm

SDG: 70798
Non-spiked sample: 70798-1
Spike: 70798-1,MS
Spike duplicate: 70798-1,MSD

COMPOUND	LCS SPIKE ADDED (ug/kg)	LCD SPIKE ADDED (ug/kg)	LOWER LIMIT	UPPER LIMIT	RPD LIMIT	NON-SPIKE RESULT (ug/kg)	SPIKE RESULT (ug/kg)	SPIKE % REC	#	SPIKE DUP RESULT (ug/kg)	SPIKE DUP % REC	#	RPD	#
C-9	3371	3532	30	140	50	0	1560	46		1723	49		10	
C-10	3371	3532	40	140	50	0	1809	54		2031	58		12	
C-12	3371	3532	40	140	50	0	2075	62		2270	64		9	
C-14	3371	3532	40	140	50	0	2246	67		2457	70		9	
C-16	3371	3532	40	140	50	0	2391	71		2659	75		11	
C-18	3371	3532	40	140	50	0	2516	75		2917	83		15	
C-19	3371	3532	40	140	50	0	2423	72		2745	78		12	
C-20	3371	3532	40	140	50	0	2592	77		2947	83		13	
C-22	3371	3532	40	140	50	0	2577	76		2878	81		11	
C-24	3371	3532	40	140	50	0	2555	76		2845	81		11	
C-26	3371	3532	40	140	50	0	2505	74		2799	79		11	
C-28	3371	3532	40	140	50	0	2383	71		2763	78		15	
C-30	3371	3532	40	140	50	0	2289	68		2694	76		16	
C-36	3371	3532	40	140	50	0	2337	69		2818	80		19	
C9-C18 Aliphatics	20225	21190	40	140	50	0	12598	62		14058	66		11	
C19-C36 Aliphatics	26967	28254	40	140	50	0	19660	73		22489	80		13	

Column to be used to flag recovery and RPD values outside of QC limits
* Values outside QC limits

Non-spike result of "0" used in place of "U" to allow calculation of spike recovery.

Comments: _____

PCB
DATA SUMMARIES

analytics environmental laboratory LLC

195 Commerce Way
Portsmouth, New Hampshire 03801
603-436-5111 Fax 603-430-2151
800-929-9906

Mr. Scott Nesbit
Terta Tech NUS, Inc.
661 Andersen Drive, Foster Plaza 7
Pittsburgh PA 15220

August 29, 2011

CLIENT SAMPLE ID

Project Name: LMC Wilmington

Project Number: 1121C03346

Field Sample ID: Lab QC

SAMPLE DATA

Lab Sample ID: B082511PSOX RR
Matrix: Soil
Percent Solid: 100
Dilution Factor: 1.0
Collection Date:
Lab Receipt Date:
Extraction Date: 08/25/11
Analysis Date: 08/26/11

PCB ANALYTICAL RESULTS

COMPOUND	Quantitation Limit µg/kg	Results µg/kg
PCB-1016	33	U
PCB-1221	33	U
PCB-1232	33	U
PCB-1242	33	U
PCB-1248	33	U
PCB-1254	33	U
PCB-1260	33	U
PCB-1262	33	U
PCB-1268	33	U

Surrogate Standard Recovery

2,4,5,6-Tetrachloro-m-xylene	95	%
Decachlorobiphenyl	75	%

U=Undetected J=Estimated E=Exceeds Calibration Range B=Detected in Blank

METHODOLOGY: Sample analysis conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 8082.

COMMENTS: Sample preparation conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 3540C. Results are expressed on a dry weight basis.

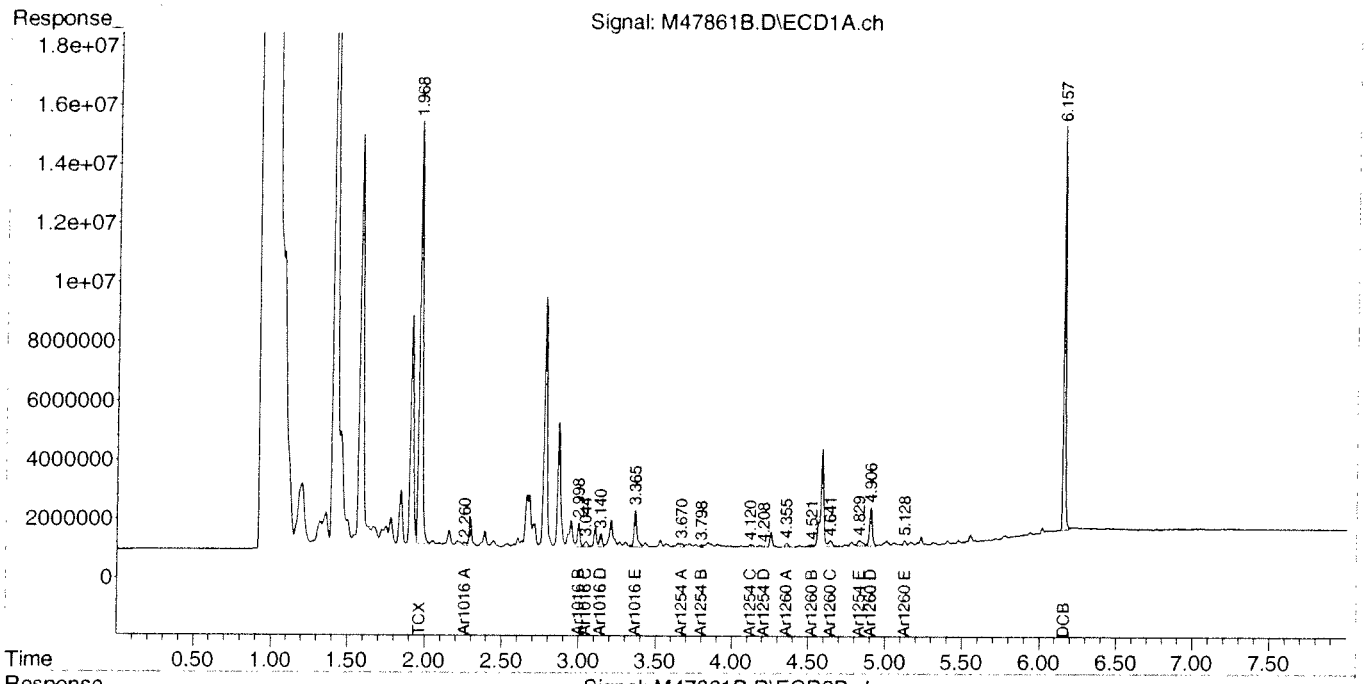
PCB EXT Report

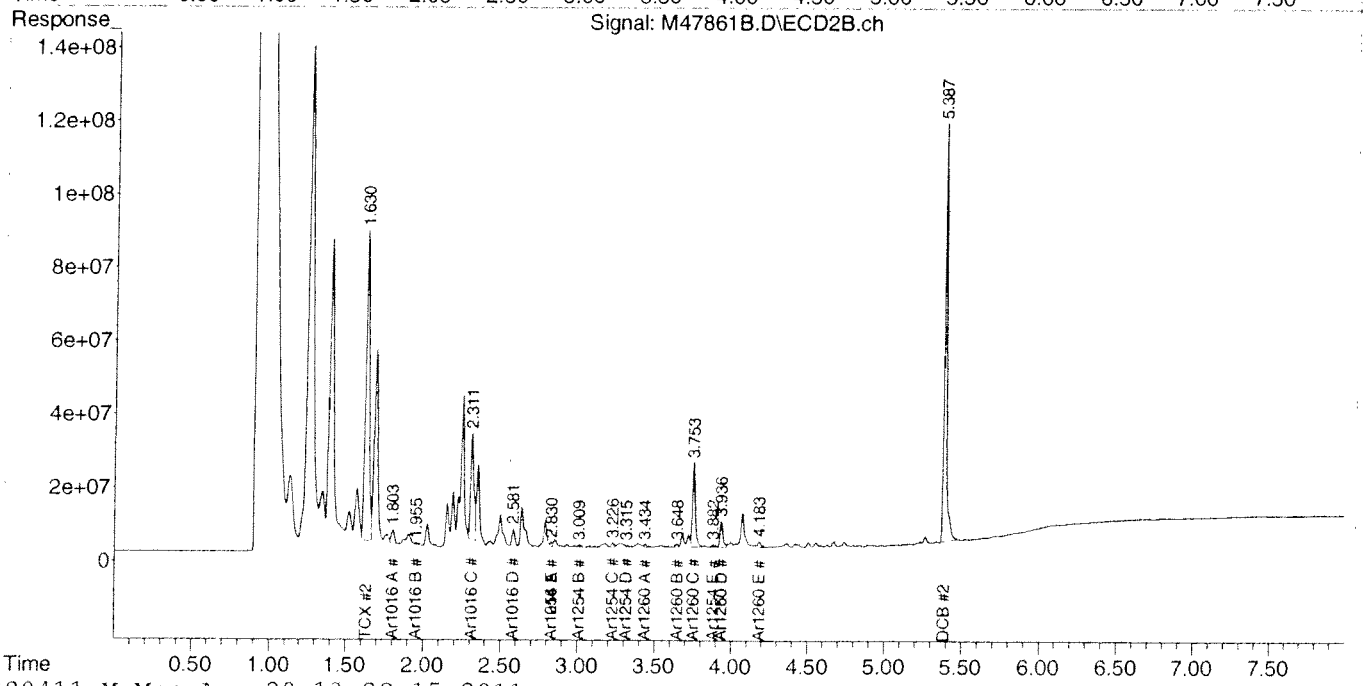
Authorized signature

Data Path : C:\msdchem\1\DATA\082611-M\
Data File : M47861B.D
Signal(s) : Signal #1: ECD1A.ch Signal #2: ECD2B.ch
Acq On   : 26 Aug 2011   5:30 pm
Operator : JK
Sample   : B082511PSOX,RR,,A/C
Misc   : SOIL
ALS Vial : 6   Sample Multiplier: 1

Integration File signal 1: events.e
Integration File signal 2: events2.e
Quant Time: Aug 29 08:48:59 2011
Quant Method : C:\msdchem\1\METHODS\PCB080411.M
Quant Title : SW-846 METHOD 8082 Aroclor 1016/1260/1254
QLast Update : Tue Aug 23 09:00:21 2011
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj.   : 2 uL
Signal #1 Phase : STX-CLPPesticides Signal #2 Phase: STX-CLPPesticides
Signal #1 Info : 30 m x 0.25mm x 0 Signal #2 Info : 30 m x 0.25mm x 0.25 um





analytics environmental laboratory LLC

195 Commerce Way
Portsmouth, New Hampshire 03801
603-436-5111 Fax 603-430-2151
800-929-9906

Mr. Scott Nesbit
Terta Tech NUS, Inc.
661 Andersen Drive, Foster Plaza 7
Pittsburgh PA 15220

August 29, 2011

CLIENT SAMPLE ID

Project Name: LMC Wilmington

Project Number: 1121C03346

Field Sample ID: LMC-SO-PROCESSED

SAMPLE DATA

Lab Sample ID: 70798-1
Matrix: Solid
Percent Solid: 94
Dilution Factor: 1.1
Collection Date: 08/25/11
Lab Receipt Date: 08/25/11
Extraction Date: 08/25/11
Analysis Date: 08/26/11

PCB ANALYTICAL RESULTS

COMPOUND	Quantitation Limit µg/kg	Results µg/kg
PCB-1016	36	U
PCB-1221	36	U
PCB-1232	36	U
PCB-1242	36	U
PCB-1248	36	U
PCB-1254	36	U
PCB-1260	36	U
PCB-1262	36	U
PCB-1268	36	U

Surrogate Standard Recovery

2,4,5,6-Tetrachloro-m-xylene	92	%
Decachlorobiphenyl	75	%

U=Undetected J=Estimated E=Exceeds Calibration Range B=Detected in Blank

METHODOLOGY: Sample analysis conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 8082.

COMMENTS: Sample preparation conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 3540C. Results are expressed on a dry weight basis.

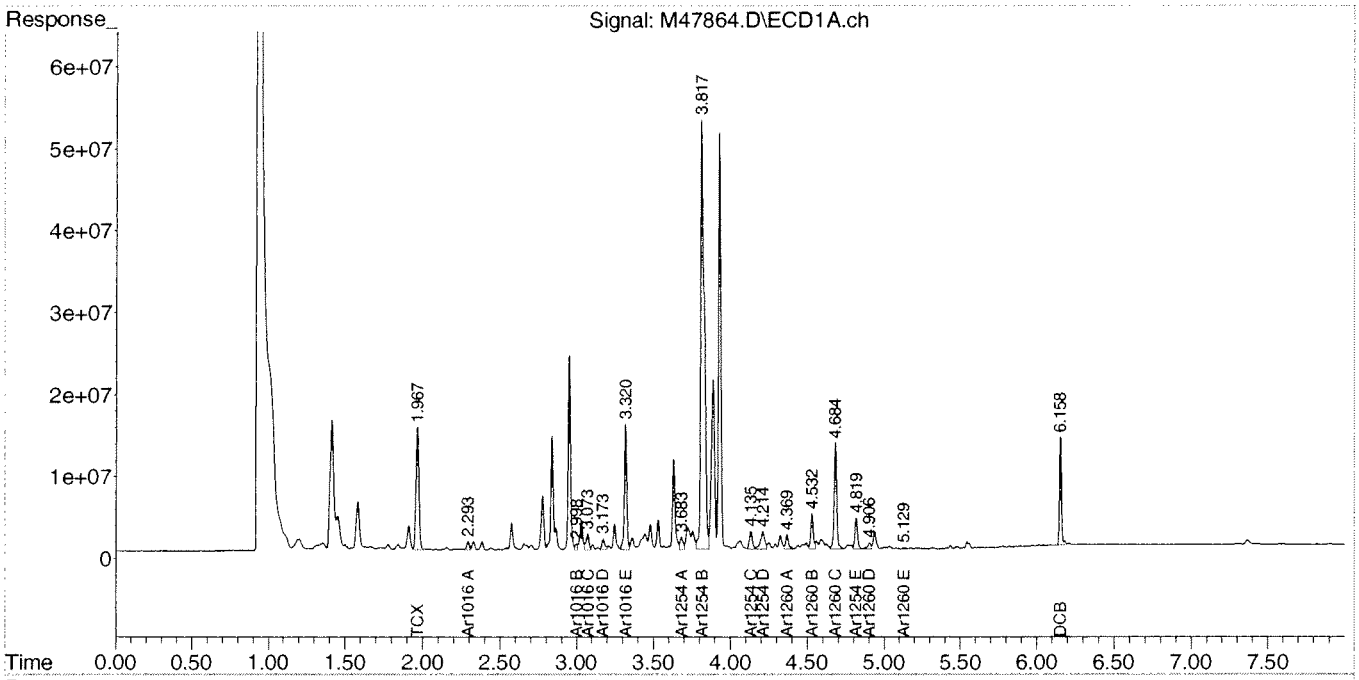
PCB EXT Report

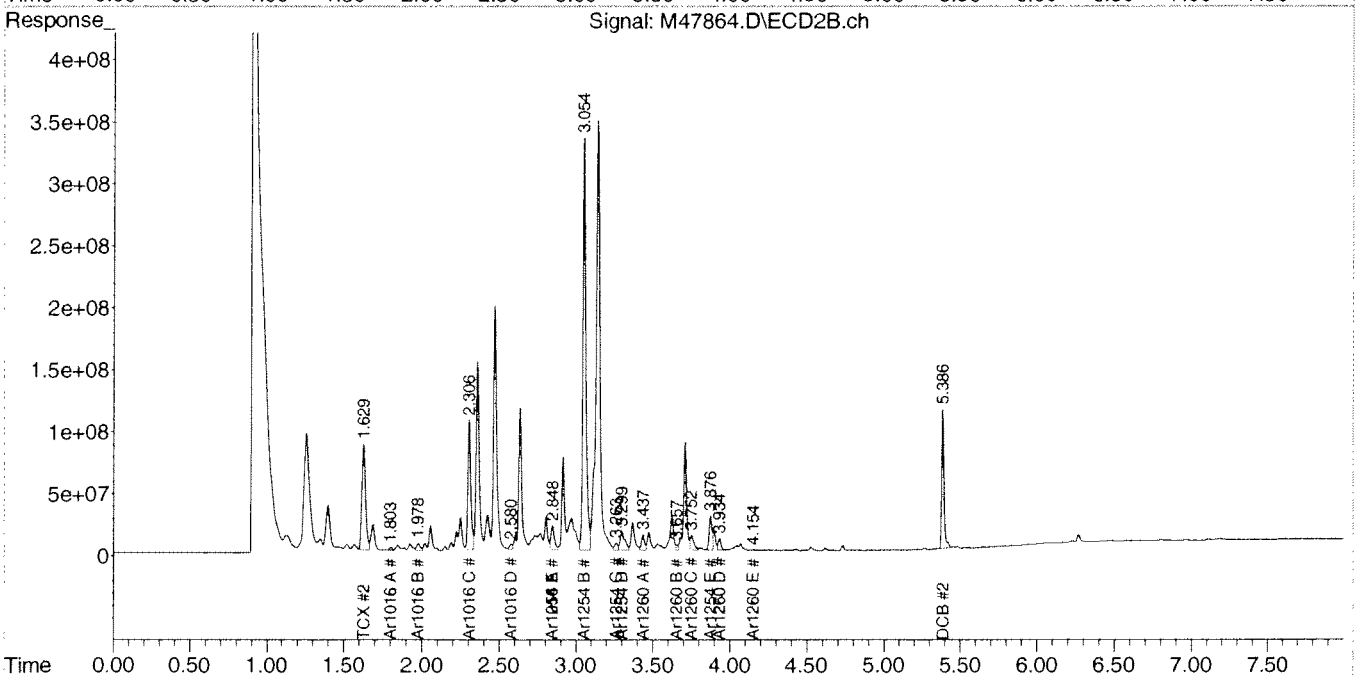
Authorized signature

Data Path : C:\msdchem\1\DATA\082611-M\
Data File : M47864.D
Signal(s) : Signal #1: ECD1A.ch Signal #2: ECD2B.ch
Acq On : 26 Aug 2011 6:00 pm
Operator : JK
Sample : 70798-1,,A/C
Misc : SOIL
ALS Vial : 17 Sample Multiplier: 1

Integration File signal 1: events.e
Integration File signal 2: events2.e
Quant Time: Aug 29 08:49:05 2011
Quant Method : C:\msdchem\1\METHODS\PCB080411.M
Quant Title : SW-846 METHOD 8082 Aroclor 1016/1260/1254
QLast Update : Tue Aug 23 09:00:21 2011
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 2 uL
Signal #1 Phase : STX-CLPPesticides Signal #2 Phase: STX-CLPPesticides
Signal #1 Info : 30 m x 0.25mm x 0 Signal #2 Info : 30 m x 0.25mm x 0.25 um





PCB
QC FORMS

PCB SOIL
LABORATORY CONTROL SAMPLE/DUPLICATE
PERCENT RECOVERY

Instrument ID: M

GC Column #1: STX-CLPesticides I

Column ID: 0.25 mm

GC Column #2: STX-CLPesticides II

Column ID: 0.25 mm

SDG:

Non-spiked sample: B082511PSOX,RR,,A/C

Spike: L082511PSOX,,A/C

Spike duplicate: LD082511PSOX,,A/C

COMPOUND	LCS SPIKE ADDED (ug/kg)	LCSD SPIKE ADDED (ug/kg)	LOWER LIMIT	UPPER LIMIT	RPD LIMIT	NON-SPIKE RESULT (ug/kg)	SPIKE RESULT (ug/kg)	SPIKE % REC	#	SPIKE DUP RESULT (ug/kg)	SPIKE DUP % REC	#	RPD	#
PCB 1016	200	200	65	140	30	0	189	94		188	94		0.7	
PCB 1260	200	200	60	130	30	0	207	103		194	97		6.2	
PCB 1016 #2	200	200	65	140	30	0	248	124		203	101		20.1	
PCB 1260 #2	200	200	60	130	30	0	184	92		177	89		3.5	

Column to be used to flag recovery and RPD values outside of QC limits

* Values outside QC limits

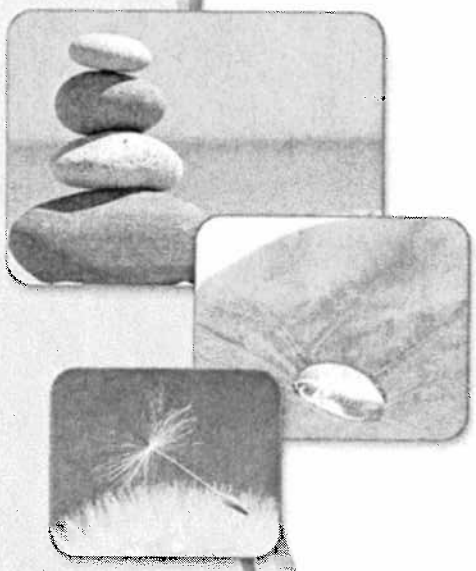
LCS/LCSD spike added values have been weight adjusted.

Non-spike result of "0" used in place of "U" to allow calculation of spike recovery.

Comments: _____

_____

SUBCONTRACTED REPORTS
&
NARRATIVES



TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Westfield
Westfield Executive Park
53 Southampton Road
Westfield, MA 01085
Tel: (413)572-4000

TestAmerica Job ID: 360-36016-1
Client Project/Site: LMC Wilmington

For:
Analytics Environmental Laboratory, LLC
195 Commerce Way
Suite E
Portsmouth, New Hampshire 03801

Attn: Ms. Kate Zaleski

Authorized for release by:
09/01/2011 12:56:27 PM
Joe Chimi
Report Production Representative
joe.chimi@testamericainc.com

Designee for

Lisa Worthington
Project Manager II
lisa.worthington@testamericainc.com

Table of Contents

MassDEP Analytical Protocol Certification Form

Laboratory Name: **TestAmerica Westfield** Project #: **360-36016-1**

Project Location: **LMC Wilmington** RTN:

This form provides certifications for the following data set: list Laboratory Sample ID Number(s):

360-36016-1

Matrices: ☐ Groundwater/Surface Water ☒ Soil/Sediment ☐ Drinking Water ☐ Air ☐ Other:

CAM Protocols (check all that apply below):

8260 VOC CAM II A ☐	7470/7471 Hg CAM III B ☒	Mass DEP VPH CAM IV A ☐	8081 Pesticides CAM V B ☐	7196 Hex Cr CAM VI B ☐	Mass DEP APH CAM IX A ☐
8270 SVOC CAM II B ☐	7010 Metals CAM III C ☐	Mass DEP EPH CAM IV B ☐	8151 Herbicides CAM V C ☐	8330 Explosives CAM VIII A ☐	TO-15 VOC CAM IX B ☐
6010 Metals CAM III A ☒	6020 Metals CAM III D ☐	8082 PCB CAM V A ☐	9014 Total Cyanide/PAC CAM VI A ☐	332.0 Perchlorate CAM VIII B ☐	

Affirmative Responses to Questions A through F are required for "Presumptive Certainty" status

A	Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding time.	☒ Yes ☐ No
B	Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed?	☒ Yes ☐ No
C	Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances?	☒ Yes ☐ No
D	Does the laboratory report comply with all the reporting requirements specified in CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data"?	☒ Yes ☐ No
E	a. VPH, EPH and APH Methods only: Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications). b. APH and TO-15 Methods only: Was the complete analyte list reported for each method?	☐ Yes ☐ No ☐ Yes ☐ No
F	Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all "No" responses to Questions A through E)?	☒ Yes ☐ No

Responses to Questions G, H and I below are required for "Presumptive Certainty" status

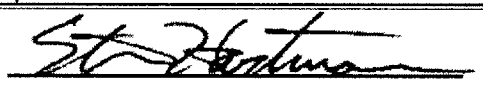
G	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)?	☒ Yes ☐ No[1]

***Data User Note:* Data that achieve "Presumptive Certainty" status may not necessarily meet the data usability and representativeness requirements described in 310 CMR 40. 1056 (2)(k) and WCS-07-350**

H	Were **all** QC performance standards specified in the CAM protocol(s) achieved?	☒ Yes ☐ No
I	Were results reported for the complete analyte list specified in the selected CAM protocol(s) ?	☒ Yes ☐ No

[1] All negative responses must be addressed in an attached laboratory narrative.

I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this analytical report is, to the best of my knowledge and belief, is accurate and complete.

Signature:  Position: Laboratory Director

Printed Name: Steven C. Hartmann Date: 9/1/11 12:53

This form has been electronically signed and approved

Case Narrative

Client: Analytics Environmental Laboratory, LLC
Project/Site: LMC Wilmington

TestAmerica Job ID: 360-36016-1

Job ID: 360-36016-1

Laboratory: TestAmerica Westfield

Narrative

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

RECEIPT

The samples were received on 08/31/2011; the samples arrived in good condition, properly preserved and on ice. The temperature of the coolers at receipt was 1.2 C.

Note: All samples that require thermal preservation are considered acceptable if the arrival temperature is <6°C or within the method specified range. For samples with a specified temperature of <6°C, temperatures ranging from just above the freezing temperature of water to 6°C shall be deemed acceptable. Samples that are hand delivered, immediately following collection, may not meet these criteria; however, they will be considered acceptable according to NELAC and State standards, if there is evidence that the chilling process has begun, such as stored and transported to the laboratory on ice.

TOTAL METALS (ICP)

Sample LMC-SO-Processed/70798-1 (360-36016-1) was analyzed for total metals (ICP) in accordance with EPA SW-846 Method 6010B. The sample was prepared and analyzed on 08/31/2011.

No difficulties were encountered during the metals analysis.

All quality control parameters were within the acceptance limits.

TOTAL MERCURY

Sample LMC-SO-Processed/70798-1 (360-36016-1) was analyzed for total mercury in accordance with EPA SW-846 Method 7471A. The sample was prepared on 08/31/2011 and analyzed on 09/01/2011.

No difficulties were encountered during the mercury analysis.

All quality control parameters were within the acceptance limits.

PERCENT SOLIDS

Sample LMC-SO-Processed/70798-1 (360-36016-1) was analyzed for percent solids in accordance with EPA Moisture. The sample was analyzed on 08/31/2011.

No difficulties were encountered during the % solids analysis.

All quality control parameters were within the acceptance limits.

Detection Summary

Client: Analytics Environmental Laboratory, LLC
Project/Site: LMC Wilmington

TestAmerica Job ID: 360-36016-1

Client Sample ID: LMC-SO-Processed/70798-1

Lab Sample ID: 360-36016-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	6.6		1.3		mg/Kg	1	☼	6010B	Total/NA
Barium	34		0.66		mg/Kg	1	☼	6010B	Total/NA
Beryllium	0.31		0.27		mg/Kg	1	☼	6010B	Total/NA
Chromium	14		0.66		mg/Kg	1	☼	6010B	Total/NA
Lead	11		0.66		mg/Kg	1	☼	6010B	Total/NA
Nickel	9.6		1.3		mg/Kg	1	☼	6010B	Total/NA
Vanadium	20		0.66		mg/Kg	1	☼	6010B	Total/NA
Zinc	30		3.3		mg/Kg	1	☼	6010B	Total/NA

Method Summary

Client: Analytics Environmental Laboratory, LLC
Project/Site: LMC Wilmington

TestAmerica Job ID: 360-36016-1

Method	Method Description	Protocol	Laboratory
6010B	Metals (ICP)	SW846	TAL WFD
7471A	Mercury (CVAA)	SW846	TAL WFD
Moisture	Percent Moisture	EPA	TAL WFD

Protocol References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL WFD = TestAmerica Westfield, Westfield Executive Park, 53 Southampton Road, Westfield, MA 01085, TEL (413)572-4000

Sample Summary

Client: Analytics Environmental Laboratory, LLC
Project/Site: LMC Wilmington

TestAmerica Job ID: 360-36016-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
360-36016-1	LMC-SO-Processed/70798-1	Solid	08/25/11 14:00	08/31/11 07:50

Method: 6010B - Metals (ICP)

Client Sample ID: LMC-SO-Processed/70798-1
Date Collected: 08/25/11 14:00
Date Received: 08/31/11 07:50

Lab Sample ID: 360-36016-1
Matrix: Solid
Percent Solids: 93.7

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.66		mg/Kg	☼	08/31/11 10:04	08/31/11 19:59	1
Arsenic	6.6		1.3		mg/Kg	☼	08/31/11 10:04	08/31/11 19:59	1
Barium	34		0.66		mg/Kg	☼	08/31/11 10:04	08/31/11 19:59	1
Beryllium	0.31		0.27		mg/Kg	☼	08/31/11 10:04	08/31/11 19:59	1
Cadmium	ND		0.27		mg/Kg	☼	08/31/11 10:04	08/31/11 19:59	1
Chromium	14		0.66		mg/Kg	☼	08/31/11 10:04	08/31/11 19:59	1
Lead	11		0.66		mg/Kg	☼	08/31/11 10:04	08/31/11 19:59	1
Nickel	9.6		1.3		mg/Kg	☼	08/31/11 10:04	08/31/11 19:59	1
Selenium	ND		0.66		mg/Kg	☼	08/31/11 10:04	08/31/11 19:59	1
Silver	ND		0.66		mg/Kg	☼	08/31/11 10:04	08/31/11 19:59	1
Thallium	ND		1.3		mg/Kg	☼	08/31/11 10:04	08/31/11 19:59	1
Vanadium	20		0.66		mg/Kg	☼	08/31/11 10:04	08/31/11 19:59	1
Zinc	30		3.3		mg/Kg	☼	08/31/11 10:04	08/31/11 19:59	1

Client Sample Results

Client: Analytics Environmental Laboratory, LLC
Project/Site: LMC Wilmington

TestAmerica Job ID: 360-36016-1

Method: 7471A - Mercury (CVAA)

Client Sample ID: LMC-SO-Processed/70798-1
Date Collected: 08/25/11 14:00
Date Received: 08/31/11 07:50

Lab Sample ID: 360-36016-1
Matrix: Solid
Percent Solids: 93.7

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.11		mg/Kg	☼	08/31/11 09:25	09/01/11 11:42	1

Client: Analytics Environmental Laboratory, LLC
Project/Site: LMC Wilmington

TestAmerica Job ID: 360-36016-1

General Chemistry

Client Sample ID: LMC-SO-Processed/70798-1
Date Collected: 08/25/11 14:00
Date Received: 08/31/11 07:50

Lab Sample ID: 360-36016-1
Matrix: Solid

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	6.3		1.0		%			08/31/11 11:17	1
Percent Solids	94		1.0		%			08/31/11 11:17	1

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
☼	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
DL, RA, RE, IN	Indicates a Dilution, Reanalysis, Re-extraction, or additional Initial metals/anion analysis of the sample
EDL	Estimated Detection Limit (Dioxin)
EPA	United States Environmental Protection Agency
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
ND	Not detected at the reporting limit (or method detection limit if shown)
PQL	Practical Quantitation Limit
RL	Reporting Limit
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

QC Association Summary

Client: Analytics Environmental Laboratory, LLC
Project/Site: LMC Wilmington

TestAmerica Job ID: 360-36016-1

Metals

Prep Batch: 79240

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
360-36016-1	LMC-SO-Processed/70798-1	Total/NA	Solid	7471A	
360-36016-1 DU	LMC-SO-Processed/70798-1	Total/NA	Solid	7471A	
360-36016-1 MS	LMC-SO-Processed/70798-1	Total/NA	Solid	7471A	
LCDSRM 360-79240/3-A LCDSI	Lab Control Sample Dup	Total/NA	Solid	7471A	
LCSSRM 360-79240/2-A	Lab Control Sample	Total/NA	Solid	7471A	
MB 360-79240/1-A	Method Blank	Total/NA	Solid	7471A	

Prep Batch: 79256

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
360-36016-1	LMC-SO-Processed/70798-1	Total/NA	Solid	3050B	
LCDSRM 360-79256/3-A LCDSI	Lab Control Sample Dup	Total/NA	Solid	3050B	
LCSSRM 360-79256/2-A	Lab Control Sample	Total/NA	Solid	3050B	
MB 360-79256/1-A	Method Blank	Total/NA	Solid	3050B	

Analysis Batch: 79324

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
360-36016-1	LMC-SO-Processed/70798-1	Total/NA	Solid	6010B	79256
LCDSRM 360-79256/3-A LCDSI	Lab Control Sample Dup	Total/NA	Solid	6010B	79256
LCSSRM 360-79256/2-A	Lab Control Sample	Total/NA	Solid	6010B	79256
MB 360-79256/1-A	Method Blank	Total/NA	Solid	6010B	79256

Analysis Batch: 79364

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
360-36016-1	LMC-SO-Processed/70798-1	Total/NA	Solid	7471A	79240
360-36016-1 DU	LMC-SO-Processed/70798-1	Total/NA	Solid	7471A	79240
360-36016-1 MS	LMC-SO-Processed/70798-1	Total/NA	Solid	7471A	79240
LCDSRM 360-79240/3-A LCDSI	Lab Control Sample Dup	Total/NA	Solid	7471A	79240
LCSSRM 360-79240/2-A	Lab Control Sample	Total/NA	Solid	7471A	79240
MB 360-79240/1-A	Method Blank	Total/NA	Solid	7471A	79240

General Chemistry

Analysis Batch: 79270

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
360-36016-1	LMC-SO-Processed/70798-1	Total/NA	Solid	Moisture	

QC Sample Results

Client: Analytics Environmental Laboratory, LLC
Project/Site: LMC Wilmington

TestAmerica Job ID: 360-36016-1

Method: 6010B - Metals (ICP)

Lab Sample ID: MB 360-79256/1-A
Matrix: Solid
Analysis Batch: 79324

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 79256

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.50		mg/Kg		08/31/11 10:04	08/31/11 19:30	1
Arsenic	ND		1.0		mg/Kg		08/31/11 10:04	08/31/11 19:30	1
Barium	ND		0.50		mg/Kg		08/31/11 10:04	08/31/11 19:30	1
Beryllium	ND		0.20		mg/Kg		08/31/11 10:04	08/31/11 19:30	1
Cadmium	ND		0.20		mg/Kg		08/31/11 10:04	08/31/11 19:30	1
Chromium	ND		0.50		mg/Kg		08/31/11 10:04	08/31/11 19:30	1
Lead	ND		0.50		mg/Kg		08/31/11 10:04	08/31/11 19:30	1
Nickel	ND		1.0		mg/Kg		08/31/11 10:04	08/31/11 19:30	1
Selenium	ND		0.50		mg/Kg		08/31/11 10:04	08/31/11 19:30	1
Silver	ND		0.50		mg/Kg		08/31/11 10:04	08/31/11 19:30	1
Thallium	ND		1.0		mg/Kg		08/31/11 10:04	08/31/11 19:30	1
Vanadium	ND		0.50		mg/Kg		08/31/11 10:04	08/31/11 19:30	1
Zinc	ND		2.5		mg/Kg		08/31/11 10:04	08/31/11 19:30	1

Lab Sample ID: LCDSRM 360-79256/3-A
LCDSRM
Matrix: Solid
Analysis Batch: 79324

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 79256

Analyte	Spike Added	LCDSRM Result	LCDSRM Qualifier	Unit	D	% Rec	% Rec. Limits	RPD	RPD Limit
Antimony	152	40.0		mg/Kg		26	10.0 - 110	14	30
Arsenic	90.0	85.1		mg/Kg		95	61 - 117	0	30
Barium	730	655		mg/Kg		90	71.1 - 119	2	30
Beryllium	83.0	73.5		mg/Kg		89	65.8 - 112	1	30
Cadmium	106	88.5		mg/Kg		83	65.6 - 113	1	30
Chromium	272	262		mg/Kg		96	68.0 - 124	1	30
Lead	267	215		mg/Kg		80	64.8 - 110	2	30
Nickel	179	161		mg/Kg		90	67.6 - 117	1	30
Selenium	154	129		mg/Kg		84	53.1 - 110	1	30
Silver	67.5	57.1		mg/Kg		85	56.9 - 113	3	30
Thallium	286	230		mg/Kg		81	61.9 - 116	2	30
Vanadium	124	144		mg/Kg		116	73.0 - 138	6	30
Zinc	655	549		mg/Kg		84	67.5 - 116	1	30

Lab Sample ID: LCSSRM 360-79256/2-A
Matrix: Solid
Analysis Batch: 79324

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 79256

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	% Rec	% Rec. Limits
Antimony	152	34.9		mg/Kg		23	10.0 - 110
Arsenic	90.0	85.4		mg/Kg		95	61 - 117
Barium	730	665		mg/Kg		91	71.1 - 119
Beryllium	83.0	74.1		mg/Kg		89	65.8 - 112
Cadmium	106	87.9		mg/Kg		83	65.6 - 113
Chromium	272	264		mg/Kg		97	68.0 - 124
Lead	267	218		mg/Kg		82	64.8 - 110
Nickel	179	163		mg/Kg		91	67.6 - 117
Selenium	154	128		mg/Kg		83	53.1 - 110
Silver	67.5	58.7		mg/Kg		87	56.9 - 113
Thallium	286	235		mg/Kg		82	61.9 - 116

Method: 6010B - Metals (ICP) (Continued)

Lab Sample ID: LCSSRM 360-79256/2-A
Matrix: Solid
Analysis Batch: 79324

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 79256

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	% Rec	% Rec. Limits
Vanadium	124	136		mg/Kg		110	73.0 - 138
Zinc	655	552		mg/Kg		84	67.5 - 116

Method: 7471A - Mercury (CVAA)

Lab Sample ID: MB 360-79240/1-A
Matrix: Solid
Analysis Batch: 79364

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 79240

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.10		mg/Kg		08/31/11 09:25	09/01/11 11:37	1

Lab Sample ID: LCDSRM 360-79240/3-A
LCDSRM
Matrix: Solid
Analysis Batch: 79364

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 79240

Analyte	Spike Added	LCDSRM Result	LCDSRM Qualifier	Unit	D	% Rec	% Rec. Limits	RPD	RPD Limit
Mercury	10.3	9.85		mg/Kg		96	46.5 - 135	17	30

Lab Sample ID: LCSSRM 360-79240/2-A
Matrix: Solid
Analysis Batch: 79364

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 79240

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	% Rec	% Rec. Limits
Mercury	10.3	8.28		mg/Kg		80	46.5 - 135

Lab Sample ID: 360-36016-1 MS
Matrix: Solid
Analysis Batch: 79364

Client Sample ID: LMC-SO-Processed/70798-1
Prep Type: Total/NA
Prep Batch: 79240

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	% Rec	% Rec. Limits
Mercury	ND		1.27	1.19		mg/Kg	☼	94	75 - 125

Lab Sample ID: 360-36016-1 DU
Matrix: Solid
Analysis Batch: 79364

Client Sample ID: LMC-SO-Processed/70798-1
Prep Type: Total/NA
Prep Batch: 79240

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Mercury	ND		ND		mg/Kg	☼	NC	35

Lab Chronicle

Client: Analytics Environmental Laboratory, LLC
Project/Site: LMC Wilmington

TestAmerica Job ID: 360-36016-1

Client Sample ID: LMC-SO-Processed/70798-1
Date Collected: 08/25/11 14:00
Date Received: 08/31/11 07:50

Lab Sample ID: 360-36016-1
Matrix: Solid
Percent Solids: 93.7

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared Or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			79256	08/31/11 10:04	OG	TAL WFD
Total/NA	Analysis	6010B		1	79324	08/31/11 19:59	TJS	TAL WFD
Total/NA	Prep	7471A			79240	08/31/11 09:25	OG	TAL WFD
Total/NA	Analysis	7471A		1	79364	09/01/11 11:42	EMN	TAL WFD
Total/NA	Analysis	Moisture		1	79270	08/31/11 11:17	OG	TAL WFD

Laboratory References:
TAL WFD = TestAmerica Westfield, Westfield Executive Park, 53 Southampton Road, Westfield, MA 01085, TEL (413)572-4000

Certification Summary

Client: Analytics Environmental Laboratory, LLC
Project/Site: LMC Wilmington

TestAmerica Job ID: 360-36016-1

Laboratory	Authority	Program	EPA Region	Certification ID
TestAmerica Westfield	Connecticut	State Program	1	PH-0494
TestAmerica Westfield	Maine	State Program	1	MA00014
TestAmerica Westfield	Massachusetts	State Program	1	M-MA014
TestAmerica Westfield	New Hampshire	NELAC	1	2539
TestAmerica Westfield	New York	NELAC	2	10843
TestAmerica Westfield	North Carolina	North Carolina DENR	4	647
TestAmerica Westfield	Rhode Island	State Program	1	LAO00057
TestAmerica Westfield	Vermont	State Program	1	VT-10843

Accreditation may not be offered or required for all methods and analytes reported in this package. Please contact your project manager for the laboratory's current list of certified methods and analytes.

State Accreditation Matrix

Method Name	Description	State where **Primary** Accreditation is Carried			
		New Hampshire (NELAC)	Mass	Conn	North Carolina
821-R-02-012	Toxicity, Acute (48-Hour)(list upon request)	NP			
SM 4500 Cl F	Chlorine, Residual		NP		
SM 9215E	Heterotrophic Plate Count (SimPlate)		P		
SM 9222D	Coliforms, Fecal (Membrane Filter)		P/NP		
SM 9223	Coliforms, Total, and E.Coli (Colilert-P/A)		P		
SM 9224	Coliforms, Total, and E.Coli (Enumeration)		P		
1103.1	E.coli		ambient/ source		
Enterolert	Enterococcus				
200.8 Rev 5.4	Metals (ICP/MS) (list upon request)	NP/P	NP/P		
200.7 Rev 4.4	Metals (ICP)(list upon request)	NP/P	NP/P		
6010B	Metals (ICP)(list upon request)	NP/SW			
245.1	Mercury (CVAA)	NP/P	NP		
7470A	Mercury (CVAA)	NP			
7471A	Mercury (CVAA)	SW			
SM 2340B	Total Hardness (as CaCO3) by calculation	NP/P	NP		
3005A	Preparation, Total Recoverable or Dissolved Metals	NP/P			
3010A	Preparation, Total Metals	NP/P			
3020A	Preparation, Total Metals	NP/P/SW			
3050B	Preparation, Metals	SW			
504.1	EDB, DBCP and 1,2,3-TCP (GC)	P	P		
608	Organochlorine Pest/PCBs (list upon request)	NP	NP		
625	Semivolatile Org Comp (GC/MS)(list upon request)	NP	NP		
3546	Microwave Extraction	SW			
3510C	Liquid-Liquid Extraction (Separatory Funnel)	NP			
3550B	Ultrasonic Extraction	SW			
8081A	Organochlorine Pesticides (GC)(list upon request)	NP/SW			
8082	PCBs by Gas Chromatography(list upon request)	NP/SW			
8270C	Semivolatile Comp.(GC/MS)(list upon request)	NP/SW			
CT ETPH	Conn - Ext. Total petroleum Hydrocarbons (GC)			NP/SW	
MA-EPH	Mass - Extractable Petroleum Hydrocarbons (GC)				NP/SW
524.2	Volatile Org Comp (GC/MS)(list upon request)	P	P		
524.2	Trihalomethane compounds	P	P		
624	Volatile Org Comp (GC/MS)(list upon request)	NP	NP		
5035	Closed System Purge and Trap	SW			
5030B	Purge and Trap	NP			
8260B	Volatile Org Comp. (GC/MS)(list upon request)	NP/SW			
MAVPH	Mass - Volatile Petroleum Hydrocarbons (GC)				NP/SW
180.1	Turbidity, Nephelometric	P	P		
300	Anions, Ion Chromatography	NP/P	NP/P		
410.4	COD	NP	NP		
1010	Ignitability, Pensky-Martens Closed-Cup Method	SW			
10-107-06-2	Nitrogen, Total Kjeldahl	NP	NP		
7196A	Chromium, Hexavalent	NP/SW			
9012A	Cyanide, Total and/or Amenable	NP/SW			
9030B	Sulfide, Distillation (Acid Soluble and Insoluble)	NP			
9045C	pH	SW			
L107041C	Nitrogen, Nitrate	NP	P		
L107-06-1B	Nitrogen Ammonia	NP	NP		
L204001A CN	Cyanide, Total	P	NP/P		
L210-001A	Phenolics, Total Recoverable	NP	NP		
SM 2320B	Alkalinity	NP/P	NP/P		
SM 2510B	Conductivity, Specific Conductance	NP/P	NP/P		
SM 2540C	Solids, Total Dissolved (TDS)	NP/P	NP/P		
SM 2540D	Solids, Total Suspended (TSS)	NP	NP		
SM 3500 CR D	Chromium, Hexavalent	NP			
SM 4500 H+ B	pH	NP/P	NP/P		
SM 4500 NO2 B	Nitrogen, Nitrite	NP	P		
SM 4500 P E	Phosphorus, Orthophosphate	NP/P	NP		
SM 4500 P E	Phosphorus, Total	NP	NP		
SM 4500 S2 D	Sulfide, Total	NP			
SM 5210B	BOD, 5-Day	NP	NP		
SM 5310B	Organic Carbon, Total (TOC)	NP/P	NP		

Not all organic compounds are accreditied under NELAC
For methods with multiple compounds all compounds may not meet NELAC criteria, listing should be obtained from the laboratory
The lab carries additional accreditations with several states. This is the laboratories typcial listing but is subject to change based on the laboratories current certification standing.

Login Sample Receipt Checklist

Client: Analytics Environmental Laboratory, LLC

Job Number: 360-36016-1

Login Number: 36016
List Number: 1
Creator: Mason, Becky C

List Source: TestAmerica Westfield

Question	Answer	Comment
Radioactivity either was not measured or, if measured, is at or below background	N/A	
The cooler's custody seal, if present, is intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Chain Of Custody Form TA West 360-36016

analytics environmental laboratory LLC
195 Commerce Way, Suite E
Portsmouth, NH 03801
(800) 929-9906
(603) 436-5111
(603) 430-2151 Fax

Project Name: LMC Wilmington
Project#: 11216033346
Company: Analytics Environmental Laboratory
Report to: Project Manager
Address: 195 Commerce Way, Suite E
Portsmouth, NH 03801
Phone: 603-436-5111
Quote #:
PO# (if required): 70798

Preservation Code: B

Preservation Key:
A= HCL
B= 4°C
C= Unpres
D = MeOH
E = HNO3
F = H2SO4
G = Hexane
H = Other

Circle and/or Write Required Analysis Followed by Preservation Code
Please fill in preservation code here

Sample Identification	Sample Date	Sample Time	Field Filtered? Y or N	Metals: RCRA8 PP13 TAL23 Other**	Matrix	No. of Containers	pH checked	Analytics Sample #
LMC-SO-Processed	8/25/11	1400		X	S	1		70798-1

Sample Receipt
Samples were:
1) Shipped or hand-delivered
2) Temperature (°C): 1.2
3) Received in good condition: (Y) or N
4) pH checked by:
5) Labels checked by:

Matrix Key:
C = Concrete
WP = Wipe
WW = Wastewater
SW = Surface Water
E = Extract
GW = Groundwater
DW = Drinking Water
S = Soil / Sludge
O = Oil
X = Other

Site 8/30/11

Email Results to: cpayne@analyticslab.com

Comments, Additional Analyses, or Special Instructions: ** List requested metals here
*MCP 14 metals

Turnaround Time (TAT)
☐ 24 Hours* ☐ 48 Hours*
☐ 72 Hours* ☒ 5 Days*
☐ 10 Days 9/1/11
*Call if not able to approve requested date

Project Requirements:
*Fee may apply

Report Type:
☒ MCP ☒ Level II
☐ CTRCP ☐ Level III
☐ DOD ☐ Level IV
☐ Standard

State:
☐ NH
☒ MA
☐ ME
☐ CT
☐ RI
Other:

State Standard: S-1 (eg. S-1 or GW-1)

EDD Required: Y* N
Type*:

Site 8/30/11

Relinquished By:	Date:	Time:	Received By:
Relinquished By: John Cann UPS	Date: 8/30/11	Time: 1700	Received By: UPS
Relinquished By:	Date: 8/31/11	Time: 0750	Received By:

12 GA5 5V5 1553 8534 05

CHAIN OF CUSTODIES

Chain Of Custody Form

analytics environmental laboratory LLC

195 Commerce Way, Suite E
Portsmouth, NH 03801
(800) 929-9906

(603) 436-5111
(603) 430-2151 Fax

Project#: 112IC03346 Proj. Name: LMC WILMINGTON
Company: TETRA TECH
Report to: Scott Nesbit
Address: CCI Anderson Drive Foster Plaza 7 Pittsburgh PA
Phone: 412 921-7090
Quote #:
PO# (if required):

For Analytics Use Only

Samples were:
1) Shipped ~~or hand-delivered~~
2) Temperature (°C): 4.1°C
3) Received in good condition: Y or N
4) pH checked by: NA
5) Labels checked by: SFC 8/25/11

Matrix Key:
C = Concrete, WP = Wipe, WW = Wastewater, SW = Surface Water, E = Extract, GW = Groundwater, DW = Drinking Water, S = Soil / Sludge, O = Oil, X = Other

Station Identification	Sample Date	Sample Time	Preservation: Unpres	4° C	HNO_3	H_2SO_4	HCl	Methanol	Other	Field Filtered? Y or N	VOC: 8260 524.2 624	SVOC: 8270 625 PAH only SIM	Pesticides: 8081 608	PCB: 8082 608	Soxhlet? Y or N	TPH: 8015DRO 8015GRO 8100M	EPH: Full (includes targets) Ranges only	VPH: Full (includes targets) Ranges only	Metals: RCRA8 PP13 TAL23 Other*	% SOLIDS	Matrix	No. of Containers	pH checked	Analytics Sample #
LMC-SO-PROCESSED	8/25/11	14:20		X				X			1	1		1			1	1	1	2	S	8	MD 8/25	70798-1

Dm 8/25/11

Email Results to:
Scott.nesbit@tetratech.com

Turnaround Time (TAT)
☐ 24 Hours* ☐ 48 Hours* ☐ 72 Hours* ☒ 5 Days* ☐ 10 Days
*Fee may apply; lab approval required

Comments, Additional Analyses, or Special Instructions: * List requested metals here

* MCP PRESUMPTIVE CERTAINTY IS REQUIRED FOR THIS PROJECT (except Trip Blanks)
* MCP 14 METALS, MA EPH full & MA VPH Full PCB & EPH IN SAME JAR

Project Requirements:
*Fee may apply

Report Type:
☒ MCP* ☐ Level II* ☐ CTRCP* ☐ Level III* ☐ DOD* ☐ Level IV* ☐ Standard

State:
☐ NH ☒ MA ☐ ME ☐ CT ☐ RI Other:

State Standard: S-1 (eg. S-1 or GW-1)

EDD Required: Y* N
Type:

Sampler Name (Print): Michael Athey				
Relinquished By Sampler: M. Athey	Date: 8/25/11	Time: 15:20	Received By: Ruth Mayo	
Relinquished By:	Date:	Time:	Received By:	
Relinquished By:	Date:	Time:	Received By:	Dm 8/25/11

Page ____ of ____

ANALYTICS SAMPLE RECEIPT CHECKLIST

analytics environmental laboratory LLC

AEL LAB#: 70798 | COOLER NUMBER: 135

CLIENT: TETRA TECH | NUMBER OF COOLERS: 1

PROJECT: UNC WILMINGTON | DATE RECEIVED: 8/25/11

A: PRELIMINARY EXAMINATION: | DATE COOLER OPENED: 8/25/11

1. Cooler received by(initials): | Date Received: 8/25/11

2. Circle one: (Hand delivered) Shipped (If no, skip 3)

3. Did cooler come with a shipping slip? Y (N)

3a. Enter carrier name and airbill number here:

4. Were custody seals on the outside of cooler? Y (N)
How many & where: _____ Seal Date: _____ Seal Name: _____

5. Did the custody seals arrive unbroken and intact upon arrival? Y N/A

6. COC: _____

7. Were Custody papers filled out properly (ink,signed, etc)?	(Y)	N
8. Were custody papers sealed in a plastic bag?	(Y)	N
9. Did you sign the COC in the appropriate place?	(Y)	N
10. Was the project identifiable from the COC papers?	(Y)	N
11. Was enough ice used to chill the cooler? (Y) N	Temp. of cooler:	4.1°C

B. Log-In: Date samples were logged in: 8/25/11 By:

12. Type of packing in cooler(bubble wrap, popcorn)	(Y)	N
13. Were all bottles sealed in separate plastic bags?	(Y)	N
14. Did all bottles arrive unbroken and were labels in good condition?	(Y)	N
15. Were all bottle labels complete(ID,Date,time,etc.)	(Y)	N
16. Did all bottle labels agree with custody papers?	(Y)	N
17. Were the correct containers used for the tests indicated:	(Y) SHC 8/25/11	(N) EPH not in light sensitive container
18. Were samples received at the correct pH?	Y	N/A
19. Was sufficient amount of sample sent for the tests indicated?	(Y)	N
20. Were all samples submitted within holding time?	(Y)	N
21. Were bubbles absent in VOA samples?	Y	N/A

If NO, List Sample ID's and Lab #s: _____

22. Laboratory labeling verified by (initials): SHC Date: 8/25/11

analytics environmental laboratory LLC

SAMPLE RECEIPT
NON-COMPLIANCE NOTIFICATION
(SENT VIA FACSIMILE)

DATE 8/25/11 FROM Analytics Environmental

FAX CONTACT Michael Alroy FAX NUMBER _____

CLIENT Tetra Tech LAB NUMBER 70798

The exceptions noted below were found on the sample(s) received on the attached Chain of Custody (COC) form. These exceptions may render the data results as non-defensible. Analytics will continue to proceed with the analysis of the sample(s) unless notified in writing to stop the analysis. This document may become part of the final report.

Please check the appropriate box and sign below and fax back to "Sample Receipt" at 603-430-2151.

Exceptions:

- ☐ Sample(s) not on ice or not at $4^{o}C \pm 2^{o}C$
- ☐ Sample(s) received unpreserved or not at the proper pH. (pH was adjusted at the laboratory)
- ☒ Sample(s) received in incorrect containers EPH was not in Amber Jar, not light blocked AEL to wrap jar in tin foil
- ☐ Insufficient sample volume received (Detection limits may be elevated due to this exception)
- ☐ Trip Blank provided in cooler, but not recorded on the chain of custody
- ☐ Other: _____

Acknowledgment:

- ☐ **Please do not analyze/report Trip Blank, proceed with other analyses**
- ☐ **Proceed with the analysis.**
- ☐ **Please stop the analysis and wait for further instructions.**

Signed:_____ **Print Name:**_____

Date:_____

APPENDIX D

Laboratory Analytical Data Package – Waste Profile

analytics environmental laboratory LLC

195 Commerce Way Suite E
Portsmouth, New Hampshire 03801
603-436-5111 Fax 603-430-2151
800-929-9906
www.analyticslab.com

August 4, 2011

Mr. Steve Vetere
Tetra Tech NUS, Inc.
250 Andover Street
Wilmington MA 01887

RE: Analytical Results Case Narrative
LMC Wilmington Project No:1121C03346
Analytics # 70594

Dear Mr. Vetere:

Enclosed please find the analytical results for samples submitted for the above-mentioned project. The attached Cover Page lists the sample IDs, Lab tracking numbers and collection dates for the samples included in this deliverable.

Samples were analyzed for Volatile Organic Compounds (VOCs) using EPA Method 8260B, Volatile Petroleum Hydrocarbons (VPH) using MADEP VPH Method Rev 1.1, May 2004, Extractable Petroleum Hydrocarbons (EPH) using MADEP EPH Method Rev 1.1, Polychlorinated Biphenyls (PCBs) by EPA Method 8082 and MCP Metals. The metals analysis were subcontracted to Eastern Analytical Concord NH.

Unless otherwise noted in the Non-conformance Summary listed below, all of the quality control (QC) criteria including initial calibration, calibration verification, surrogate recovery, holding time and method accuracy/precision for these analyses were within acceptable limits.

This Level II package has been assembled in the following:

- Case Narrative/Non-Conformance Summary
- Sample Log Sheet - Cover Page
- MCP Cover Pages
- VOC Form I Data Sheet for Samples and Blanks
- VOC Form 3 MS/MSD (LCS) Recoveries
- EPH Form I Data Sheet for Samples and Blanks
- EPH Form 3 MS/MSD (LCS) Recoveries
- PCB Form I Data Sheet for Samples and Blanks
- PCB Form 3 MS/MSD (LCS) Recoveries
- Subcontracted Reports and Narratives
- Chain of Custody (COC) Forms
- Sample Receipt Checklist

QC NON CONFORMANCE SUMMARY

Sample Receipt:
No exceptions.

Volatile Organic Compounds (VOCs) by EPA 8260B:
This narrative is specific to target analytes reported on the Form 1 data pages. Non-target (NT) analyte deviations were not addressed. The following analytes were not "J" flagged in this report: Methylene chloride, Diethyl ether and Acetone.

Due to method limitations the quantitation limits for Dibromochloromethane, Dichloromethane, 1,3-Dichloropropene, Methyl ethyl ketone, Methyl isobutyl ketone, 1,1,2,2-Tetrachloroethane and 1,4-Dioxane may not meet regulatory standards for high level preserved solid samples.

Methyl ethyl ketone did not meet minimum Rf requirement of 0.1 in the initial calibration (V807251C) and in the continuing calibration standard (file#C79696SC). The initial calibration verification standard was in control for all analytes. Results were reported without qualification.

The continuing calibration standard (File# C79696SC) did not meet %D criteria for Methylene chloride, Tetrahydrofuran and 1,4-Dioxane. These analytes were not detected in any samples for this SDG and results were reported without qualification.

The laboratory control samples (LS072811C/LS07281C2) had some analytes with recoveries above the laboratory acceptance but within MCP acceptance criteria (70-130%) (see form3). The LCS had recovery for 1,4-Dioxane below the MCP criteria however the LCSD was in control. These analytes were not detected in any samples associated with this QC and results were reported without qualification.

Volatile Petroleum Hydrocarbons (VPH):
No QC deviations.

Extractable Petroleum Hydrocarbons (EPH)
No QC deviations.

PCBs by EPA Method 8082:
No QC deviations.

If you have any questions or I can be of further assistance, please do not hesitate to contact me.

Sincerely,
ANALYTICS Environmental Laboratory, LLC

Stephen L. Knollmeyer
Laboratory Director

analytics environmental laboratory LLC

195 Commerce Way Suite E
Portsmouth, New Hampshire 03801
603-436-5111 Fax 603-430-2151
800-929-9906
www.analyticslab.com

Mr. Steve Vetere
Tetra Tech NUS, Inc.
250 Andover Street
Wilmington MA 01887

Report Number: 70594

Revision: Rev. 0

Re: LMC WILMINGTON (Project No: 1121C03346)

Enclosed are the results of the analyses on your sample(s). Samples were received on 27 July 2011 and analyzed for the tests listed. Samples were received in acceptable condition, with the exceptions noted below or on the chain of custody. These results pertain to samples as received by the laboratory and for the analytical tests requested on the chain of custody. The results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report. Please see individual reports for specific methodologies and references.

Sample Analysis: The attached pages detail the Client Sample IDs, Lab Sample IDs, and Analyses requested

Sample Receipt Exceptions: None

Analytics Environmental Laboratory is certified by the states of New Hampshire, Maine, Massachusetts, Connecticut, Rhode Island, Virginia, Maryland, North Carolina, and is accredited by the Deparment of Defense (DOD) ELAP program. A list of actual certified parameters is available upon request.

If you have any questions on these results, please do not hesitate to contact us.

Authorized signature _____
Stephen L. Knollmeyer Lab. Director

Date 08/04/2011

analytics environmental laboratory LLC

195 Commerce Way Suite E
Portsmouth, New Hampshire 03801
603-436-5111 Fax 603-430-2151
800-929-9906
www.analyticslab.com

CLIENT: Tetra Tech NUS, Inc. **REPORT NUMBER: 70594** **REV: Rev. 0**

PROJECT: LMC WILMINGTON (Project No: 1121C03346)

Lab Number	Sample Date	Station Location	Analysis	Comments
70594-1	07/27/11	LMC-CONCRETE-NC-1	EPA 8082 (PCBs only)	
	07/27/11	LMC-CONCRETE-NC-1	EPA 8260 Volatile Organics	
	07/27/11	LMC-CONCRETE-NC-1	MADEP EPH	
	07/27/11	LMC-CONCRETE-NC-1	Metals	
	07/27/11	LMC-CONCRETE-NC-1	Volatile Petroleum Hydrocarbons	
70594-2	07/27/11	LMC-CONCRETE-NC-2	EPA 8082 (PCBs only)	
	07/27/11	LMC-CONCRETE-NC-2	EPA 8260 Volatile Organics	
	07/27/11	LMC-CONCRETE-NC-2	MADEP EPH	
	07/27/11	LMC-CONCRETE-NC-2	Metals	
	07/27/11	LMC-CONCRETE-NC-2	Volatile Petroleum Hydrocarbons	
70594-3	07/27/11	LMC-SO-TRENCH-1	EPA 8260 Volatile Organics	
	07/27/11	LMC-SO-TRENCH-1	MADEP EPH	
	07/27/11	LMC-SO-TRENCH-1	Volatile Petroleum Hydrocarbons	
70594-4	07/27/11	LMC-TB02	EPA 8260 Volatile Organics	
	07/27/11	LMC-TB02	Volatile Petroleum Hydrocarbons	

analytics environmental laboratory LLC

195 Commerce Way
Portsmouth, New Hampshire 03801
603-436-5111 Fax 603-430-2151
800-929-9906

MassDEP Analytical Protocol Certification Form

Laboratory Name: Analytics Environmental Laboratory, LLC Project #: 70594

Project Location: LMC WILMINGTON RTN:

This Form provides certifications for the following data set. Laboratory Sample ID Number(s):

70594-1, 70594-2, 70594-3, 70594-4

Matrices: ☐ Groundwater/Surface Water ☐ Soil/Sediment ☐ Drinking Water ☐ Air ☒ Other

CAM Protocol (check all that apply below):

8260 VOC CAM II A ☒	7470/7471 Hg CAM III B ☐	MassDEP VPH CAM IV A ☒	8081 Pesticides CAM V B ☐	7196 Hex Cr CAM VI B ☐	MassDEP APH CAM IX A ☐
8270 SVOC CAM II B ☐	7010 Metals CAM III C ☐	MassDEP EPH CAM IV B ☐	8151 Herbicides CAM V C ☐	8330 Explosives CAM VIII A ☐	TO-15 VOC CAM IX B ☐
6010 Metals CAM III A ☐	6020 Metals CAM III D ☐	8082 PCB CAM V A ☒	9014 Total Cyanide/PAC CAM VI A ☐	6860 Perchlorate CAM VIII B ☐	

Affirmative Responses to Questions A through F are required for "Presumptive Certainty" status

A	Were all samples received in a condition conistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times?	☒Yes ☐No
B	Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed?	☒Yes ☐No
C	Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances?	☒Yes ☐No
D	Does the laboratory report comply with all reporting requirements specified in CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data"?	☒Yes ☐No
E	a. VPH, EPH, and APH Methods only: Was each method conducted without significant modification(s)? (Refer to individual method(s) for a list of significant modifications). b. APH and TO-15 Methods only: Was the complete analyte list reported for each method?	☒Yes ☐No ☐Yes ☐No
F	Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all "No" responses to Questions A through E)?	☒Yes ☐No

Responses to Questions G, H and I below are required for "Presumptive Certainty" status

G	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)?	☐Yes ☒No[1]

Data User Note: Data that achieve "Preseumptive Certainty" status may not necessarily meet the data usability and representativeness requirements described in 310 CMR 40. 1056 (2)(k) and WSC-07-350.

H	Were ALL QC performance standards specified in the CAM protocol(s) achieved?	☐Yes ☒No[1]
I	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	☒Yes ☐No[1]

[1] *All negative responses must be addressed in an attached laboratory narrative.*

I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this analytical report is, to the best of my knowledge and belief, accurate and complete.

Signature: _____ **Position:** Assistant Laboratory Director

Printed Name: Melissa Gulli **Date:** August 04, 2011

Surrogate Compound Limits

Matrix: / Units:	Aqueous % Recovery	Solid % Recovery	Method
Volatile Organic Compounds - Drinking Water			
1,4-Difluorobenzene	70-130		EPA 524.2
Bromofluorobenzene	70-130		
1,2-Dichlorobenzene-d4	70-130		
Volatile Organic Compounds			
1,2-Dichloroethane-d4	70-120	70-120	EPA 624/8260B
Toluene-d8	85-120	85-120	
Bromofluorobenzene	75-120	75-120	
Semi-Volatile Organic Compounds			
2-Fluorophenol	20-110	35-105	EPA 625/8270C
d5-Phenol	15-110	40-100	
d5-nitrobenzene	40-110	35-100	
2-Fluorobiphenyl	50-110	45-105	
2,4,6-Tribromophenol	40-110	40-125	
d14-p-terphenyl	50-130	30-125	
PAH's by SIM			
d5-nitrobenzene	21-110	35-110	EPA 8270C
2-Fluorobiphenyl	36-121	45-105	
d14-p-terphenyl	33-141	30-125	
Pesticides and PCBs			
2,4,5,6-Tetrachloro-m-xylene (TCX)	46-122	40-130	EPA 608/8082
Decachlorobiphenyl (DCB)	40-135	40-130	
Herbicides			
Dichloroacetic acid (DCAA)	30-150	30-150	
Gasoline Range Organics/TPH Gasoline			
Trifluorotoluene TFT (FID)	60-140	60-140	MEDEP 4217/EPA 8015
Bromofluorobenzene (BFB) (FID)	60-140	60-140	
Trifluorotoluene TFT (PID)	60-140	60-140	
Bromofluorobenzene (BFB) (PID)	60-140	60-140	
Diesel Range Organics/TPH Diesel			
m-terphenyl	60-140	60-140	MEDEP 4125/EPA 8015/CT ETPH
Volatile Petroleum Hydrocarbons			
2,5-Dibromotoluene (PID)	70-130	70-130	MADEP VPH May 2004 Rev1.1
2,5-Dibromotoluene (FID)	70-130	70-130	
Extracatable Petroleum Hydrocarbons			
1-chloro-octadecane (aliphatic)	40-140	40-140	MADEP EPH May 2004 Rev1.1
o-Terphenyl (aromatic)	40-140	40-140	
2-Fluorobiphenyl (Fractionation)	40-140	40-140	
2-Bromonaphthalene (fractionation)	40-140	40-140	

VOLATILE
DATA SUMMARIES

analytics environmental laboratory LLC

195 Commerce Way
Portsmouth, New Hampshire 03801
603-436-5111 Fax 603-430-2151
800-929-9906

Mr. Steve Vetere
Tetra Tech NUS, Inc.
250 Andover Street
Wilmington MA 01887

August 4, 2011

CLIENT SAMPLE ID

Project Name: LMC WILMINGTON

Project Number: 1121C03346

Field Sample ID: LAB QC

SAMPLE DATA

Lab Sample ID: MB07281C
Matrix: Solid
Percent Solid: 100
Dilution Factor: 100
Collection Date: N/A
Lab Receipt Date: N/A
Analysis Date: 07/28/11

ANALYTICAL RESULTS VOLATILE ORGANICS

COMPOUND	Quantitation Limit µg/kg	Result µg/kg	COMPOUND	Quantitation Limit µg/kg	Result µg/kg
Benzene	100	U	1,3-Dichloropropane	100	U
Bromobenzene	100	U	cis-1,3-Dichloropropene	100	U
Bromochloromethane	100	U	trans-1,3-Dichloropropene	100	U
Bromodichloromethane	75	U	2,2-Dichloropropane	100	U
Bromoform	75	U	1,1-Dichloropropene	100	U
Bromomethane	100	U	Ethylbenzene	100	U
n-butylbenzene	100	U	Hexachlorobutadiene	100	U
sec-butylbenzene	100	U	Isopropylbenzene	100	U
tert-butylbenzene	100	U	p-isopropyltoluene	100	U
Carbon Tetrachloride	100	U	Methylene Chloride	500	U
Chlorobenzene	100	U	Methyl-tert-butyl ether (MTBE)	75	U
Chloroethane	100	U	Naphthalene	100	U
Chloroform	75	U	n-Propylbenzene	100	U
Chloromethane	100	U	Styrene	100	U
2-Chlorotoluene	100	U	1,1,1,2-Tetrachloroethane	100	U
4-Chlorotoluene	100	U	1,1,2,2-Tetrachloroethane	75	U
Dibromochloromethane	75	U	Tetrachloroethene	100	U
1,2-Dibromo-3-chloropropane	100	U	Toluene	100	U
1,2-Dibromoethane	75	U	1,2,3-Trichlorobenzene	100	U
Dibromomethane	100	U	1,2,4-Trichlorobenzene	100	U
1,2-Dichlorobenzene	100	U	1,1,1-Trichloroethane	100	U
1,3-Dichlorobenzene	100	U	1,1,2-Trichloroethane	75	U
1,4-Dichlorobenzene	100	U	Trichloroethene	100	U
Dichlorodifluoromethane	100	U	Trichlorofluoromethane	100	U
1,1-Dichloroethane	100	U	1,2,3-Trichloropropane	100	U
1,2-Dichloroethane	75	U	1,2,4-Trimethylbenzene	100	U
1,1-Dichloroethene	75	U	1,3,5-Trimethylbenzene	100	U
cis-1,2-Dichloroethene	100	U	Vinyl Chloride	100	U
trans-1,2-Dichloroethene	100	U	o-Xylene	100	U
1,2-Dichloropropane	75	U	m,p-Xylene	100	U
Acetone	1000	U	Diethyl ether	100	U
Carbon Disulfide	100	U	2-Hexanone	1000	U
Tetrahydrofuran	500	U	Methyl isobutyl ketone	1000	U
Methyl ethyl ketone	1000	U	Di-isopropyl ether (DIPE)	100	U
t-Butyl alcohol (TBA)	2000	U	Ethyl t-butyl ether (ETBE)	100	U
t-Amyl methyl ether (TAME)	100	U	1,4-Dioxane	3000	U

Surrogate Standard Recovery

d4-1,2-Dichloroethane	104	%	d8-Toluene	98	%	Bromofluorobenzene	99 %

U=Undetected J=Estimated E=Exceeds Calibration Range B=Detected in Blank

METHODOLOGY: Sample analysis was conducted according to: "Test Methods for Evaluating Solid Waste, SW-846 Method 8260B."

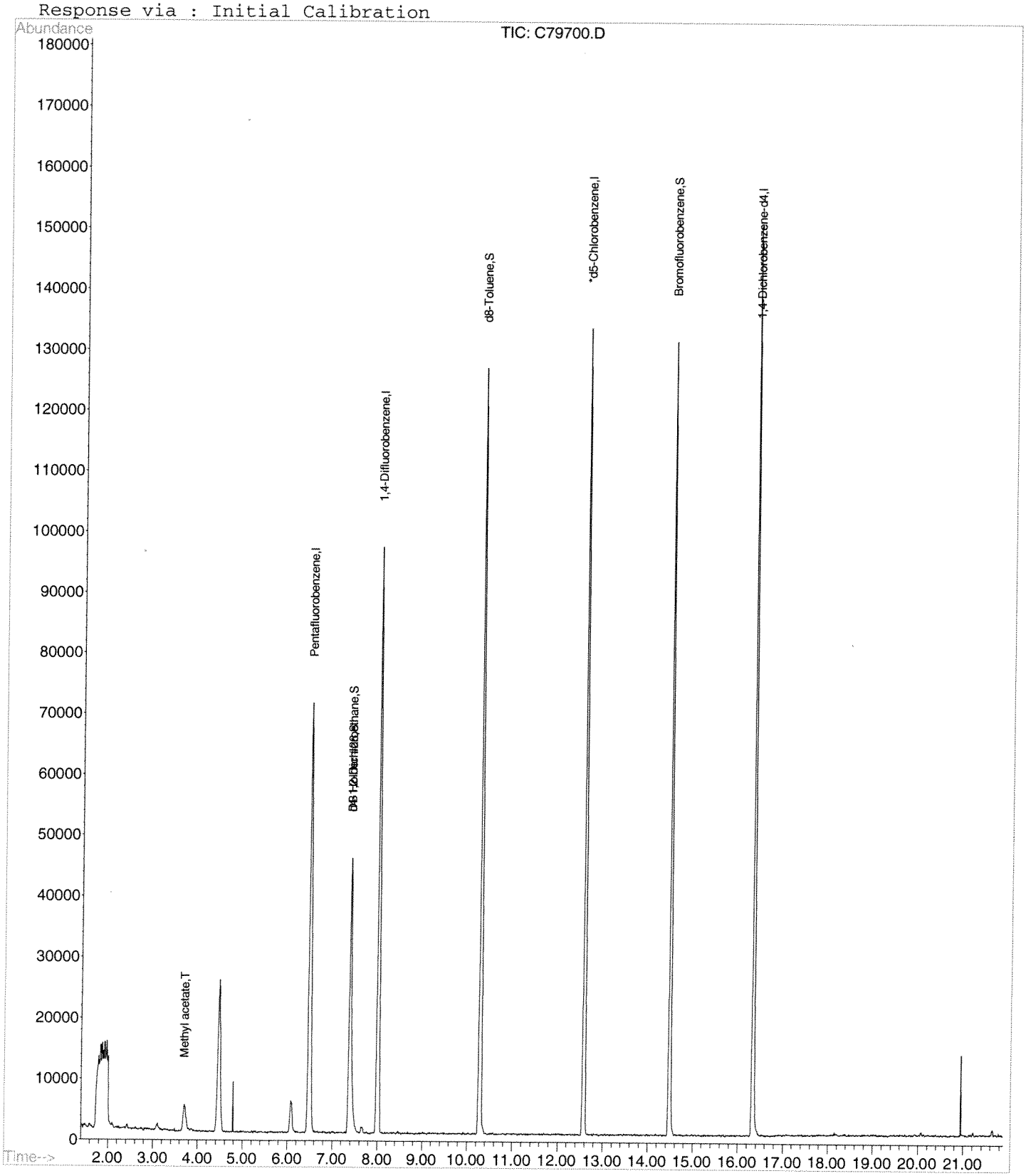
COMMENTS: Results are expressed on a dry weight basis.

~8260MCP (3) + Dioxane:Res(72):Rec(3)

Authorized signature

Data File : C:\HPCHEM\1\DATA\DATA\072811-C\C79700.D Vial: 8
Acq On : 28 Jul 2011 3:23 pm Operator: TD
Sample : MB07281C Inst : Instr_C
Misc : 50,10.00,SOIL Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 29 10:42 2011 Quant Results File: V807251C.RES

Method : C:\HPCHEM\1\METHODS\MATHODS\METHODS\V807251C.M (RTE Integrator)
Title : 8260 Purgable Organics
Last Update : Wed Jul 27 10:52:24 2011
Response via : Initial Calibration



analytics environmental laboratory LLC

195 Commerce Way
Portsmouth, New Hampshire 03801
603-436-5111 Fax 603-430-2151
800-929-9906

Mr. Steve Vetere
Tetra Tech NUS, Inc.
250 Andover Street
Wilmington MA 01887

August 3, 2011

CLIENT SAMPLE ID

Project Name: LMC WILMINGTON

Project Number: 1121C03346

Field Sample ID: LMC-CONCRETE-NC-1

SAMPLE DATA

Lab Sample ID: 70594-1
Matrix: Solid
Percent Solid: 95
Dilution Factor: 126
Collection Date: 07/27/11
Lab Receipt Date: 07/27/11
Analysis Date: 07/28/11

ANALYTICAL RESULTS VOLATILE ORGANICS

COMPOUND	Quantitation Limit µg/kg	Result µg/kg	COMPOUND	Quantitation Limit µg/kg	Result µg/kg
Benzene	126	U	1,3-Dichloropropane	126	U
Bromobenzene	126	U	cis-1,3-Dichloropropene	126	U
Bromochloromethane	126	U	trans-1,3-Dichloropropene	126	U
Bromodichloromethane	94	U	2,2-Dichloropropane	126	U
Bromoform	94	U	1,1-Dichloropropene	126	U
Bromomethane	126	U	Ethylbenzene	126	U
n-butylbenzene	126	U	Hexachlorobutadiene	126	U
sec-butylbenzene	126	U	Isopropylbenzene	126	U
tert-butylbenzene	126	U	p-isopropyltoluene	126	U
Carbon Tetrachloride	126	U	Methylene Chloride	628	U
Chlorobenzene	126	U	Methyl-tert-butyl ether (MTBE)	94	U
Chloroethane	126	U	Naphthalene	126	U
Chloroform	94	U	n-Propylbenzene	126	U
Chloromethane	126	U	Styrene	126	U
2-Chlorotoluene	126	U	1,1,1,2-Tetrachloroethane	126	U
4-Chlorotoluene	126	U	1,1,2,2-Tetrachloroethane	94	U
Dibromochloromethane	94	U	Tetrachloroethene	126	U
1,2-Dibromo-3-chloropropane	126	U	Toluene	126	U
1,2-Dibromoethane	94	U	1,2,3-Trichlorobenzene	126	U
Dibromomethane	126	U	1,2,4-Trichlorobenzene	126	U
1,2-Dichlorobenzene	126	U	1,1,1-Trichloroethane	126	U
1,3-Dichlorobenzene	126	U	1,1,2-Trichloroethane	94	U
1,4-Dichlorobenzene	126	U	Trichloroethene	126	U
Dichlorodifluoromethane	126	U	Trichlorofluoromethane	126	U
1,1-Dichloroethane	126	U	1,2,3-Trichloropropane	126	U
1,2-Dichloroethane	94	U	1,2,4-Trimethylbenzene	126	U
1,1-Dichloroethene	94	U	1,3,5-Trimethylbenzene	126	U
cis-1,2-Dichloroethene	126	U	Vinyl Chloride	126	U
trans-1,2-Dichloroethene	126	U	o-Xylene	126	U
1,2-Dichloropropane	94	U	m,p-Xylene	126	U
Acetone	1260	U	Diethyl ether	126	U
Carbon Disulfide	126	U	2-Hexanone	1260	U
Tetrahydrofuran	628	U	Methyl isobutyl ketone	1260	U
Methyl ethyl ketone	1260	U	Di-isopropyl ether (DIPE)	126	U
t-Butyl alcohol (TBA)	2510	U	Ethyl t-butyl ether (ETBE)	126	U
t-Amyl methyl ether (TAME)	126	U	1,4-Dioxane	3770	U

Surrogate Standard Recovery

d4-1,2-Dichloroethane	91	%	d8-Toluene	87	%	Bromofluorobenzene	98 %

U=Undetected J=Estimated E=Exceeds Calibration Range B=Detected in

METHODOLOGY: Sample collection in accordance with SW-846 method 5035A. Sample analysis was conducted according to: Test Methods for Evaluating Solid Waste, SW-846 Method 8260B.

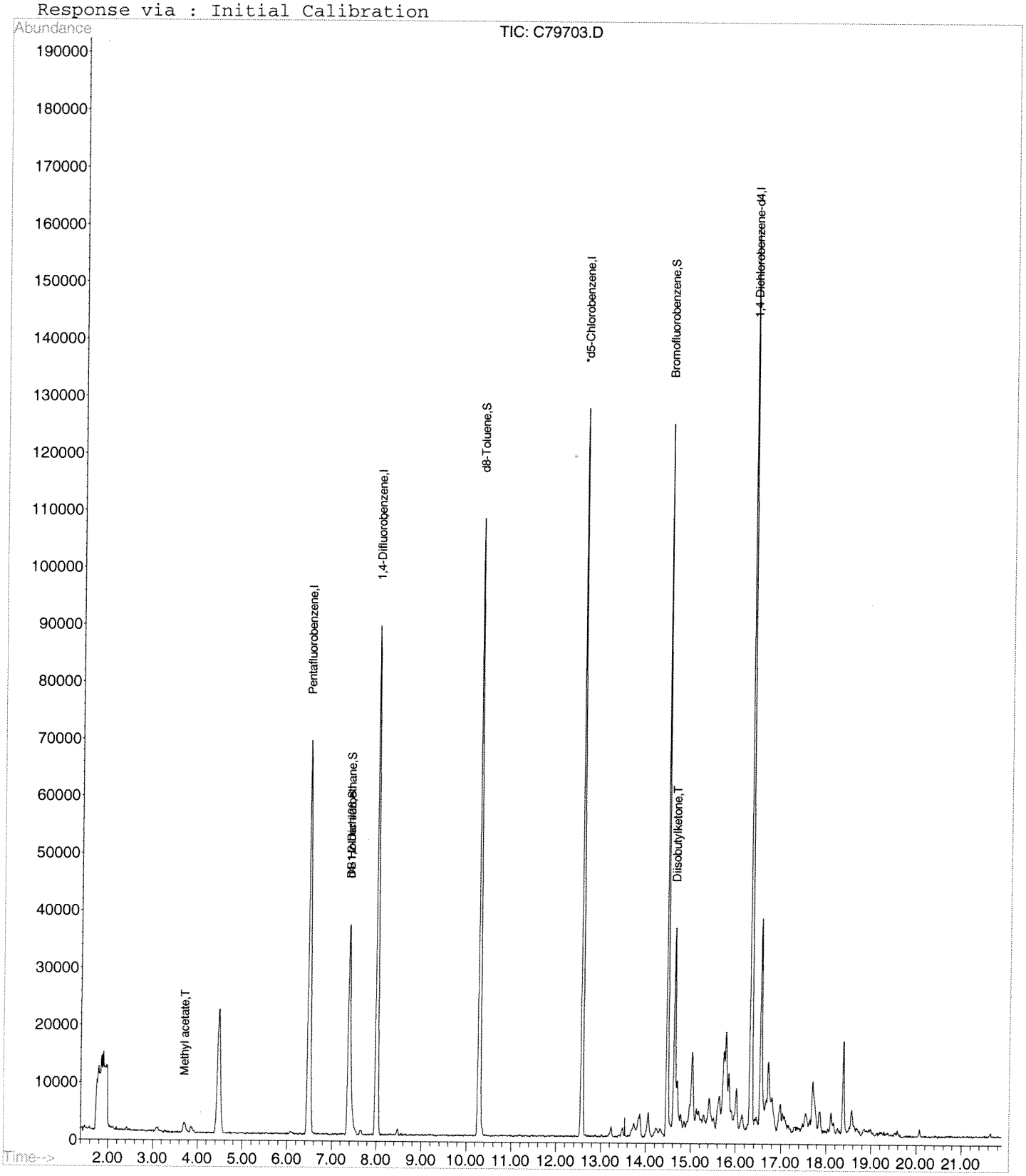
COMMENTS: Results are expressed on a dry weight basis.

~8260MCP (3) + Dioxane:Res(72):Rec(3)

Authorized signature

Data File : C:\HPCHEM\1\DATA\DATA\072811-C\C79703.D Vial: 12
Acq On : 28 Jul 2011 4:44 pm Operator: TD
Sample : 70594-1 Inst : Instr_C
Misc : 50,8.35,SOIL Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 29 10:42 2011 Quant Results File: V807251C.RES

Method : C:\HPCHEM\1\METHODS\MATHODS\METHODS\V807251C.M (RTE Integrator)
Title : 8260 Purgable Organics
Last Update : Wed Jul 27 10:52:24 2011
Response via : Initial Calibration



analytics environmental laboratory LLC

195 Commerce Way
Portsmouth, New Hampshire 03801
603-436-5111 Fax 603-430-2151
800-929-9906

Mr. Steve Vetere
Tetra Tech NUS, Inc.
250 Andover Street
Wilmington MA 01887

August 3, 2011

CLIENT SAMPLE ID

Project Name: LMC WILMINGTON

Project Number: 1121C03346

Field Sample ID: LMC-CONCRETE-NC-2

SAMPLE DATA

Lab Sample ID: 70594-2
Matrix: Solid
Percent Solid: 97
Dilution Factor: 99
Collection Date: 07/27/11
Lab Receipt Date: 07/27/11
Analysis Date: 07/28/11

ANALYTICAL RESULTS VOLATILE ORGANICS

COMPOUND	Quantitation Limit µg/kg	Result µg/kg	COMPOUND	Quantitation Limit µg/kg	Result µg/kg
Benzene	99	U	1,3-Dichloropropane	99	U
Bromobenzene	99	U	cis-1,3-Dichloropropene	99	U
Bromochloromethane	99	U	trans-1,3-Dichloropropene	99	U
Bromodichloromethane	74	U	2,2-Dichloropropane	99	U
Bromoform	74	U	1,1-Dichloropropene	99	U
Bromomethane	99	U	Ethylbenzene	99	U
n-butylbenzene	99	U	Hexachlorobutadiene	99	U
sec-butylbenzene	99	U	Isopropylbenzene	99	U
tert-butylbenzene	99	U	p-isopropyltoluene	99	U
Carbon Tetrachloride	99	U	Methylene Chloride	494	U
Chlorobenzene	99	U	Methyl-tert-butyl ether (MTBE)	74	U
Chloroethane	99	U	Naphthalene	99	**241**
Chloroform	74	U	n-Propylbenzene	99	U
Chloromethane	99	U	Styrene	99	U
2-Chlorotoluene	99	U	1,1,1,2-Tetrachloroethane	99	U
4-Chlorotoluene	99	U	1,1,2,2-Tetrachloroethane	74	U
Dibromochloromethane	74	U	Tetrachloroethene	99	U
1,2-Dibromo-3-chloropropane	99	U	Toluene	99	U
1,2-Dibromoethane	74	U	1,2,3-Trichlorobenzene	99	U
Dibromomethane	99	U	1,2,4-Trichlorobenzene	99	U
1,2-Dichlorobenzene	99	U	1,1,1-Trichloroethane	99	U
1,3-Dichlorobenzene	99	U	1,1,2-Trichloroethane	74	U
1,4-Dichlorobenzene	99	U	Trichloroethene	99	U
Dichlorodifluoromethane	99	U	Trichlorofluoromethane	99	U
1,1-Dichloroethane	99	U	1,2,3-Trichloropropane	99	U
1,2-Dichloroethane	74	U	1,2,4-Trimethylbenzene	99	**98 J**
1,1-Dichloroethene	74	U	1,3,5-Trimethylbenzene	99	U
cis-1,2-Dichloroethene	99	U	Vinyl Chloride	99	U
trans-1,2-Dichloroethene	99	U	o-Xylene	99	U
1,2-Dichloropropane	74	U	m,p-Xylene	99	U
Acetone	989	U	Diethyl ether	99	U
Carbon Disulfide	99	U	2-Hexanone	989	U
Tetrahydrofuran	494	U	Methyl isobutyl ketone	989	U
Methyl ethyl ketone	989	U	Di-isopropyl ether (DIPE)	99	U
t-Butyl alcohol (TBA)	1980	U	Ethyl t-butyl ether (ETBE)	99	U
t-Amyl methyl ether (TAME)	99	U	1,4-Dioxane	2970	U

Surrogate Standard Recovery

d4-1,2-Dichloroethane	106	%	d8-Toluene	100	%	Bromofluorobenzene	106 %

U=Undetected J=Estimated E=Exceeds Calibration Range B=Detected in

METHODOLOGY: Sample collection in accordance with SW-846 method 5035A. Sample analysis was conducted according to: Test Methods for Evaluating Solid Waste, SW-846 Method 8260B.

COMMENTS: Results are expressed on a dry weight basis.

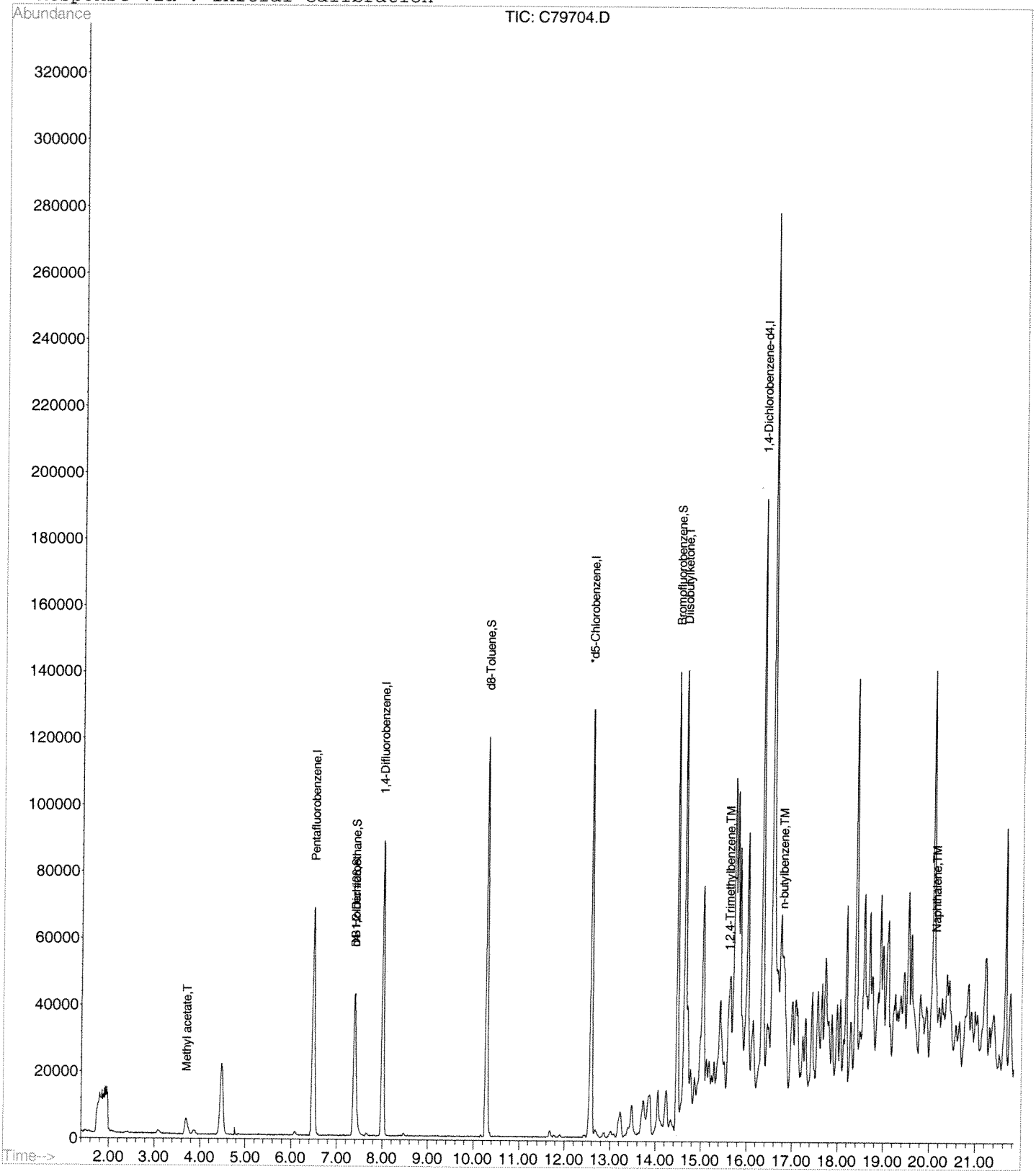
~8260MCP (3) + Dioxane:Res(72):Rec(3)

Authorized signature

Quantitation Report

Data File : C:\HPCHEM\1\DATA\DATA\072811-C\C79704.D Vial: 13
Acq On : 28 Jul 2011 5:21 pm Operator: TD
Sample : 70594-2 Inst : Instr_C
Misc : 50,10.39,SOIL Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 29 10:42 2011 Quant Results File: V807251C.RES

Method : C:\HPCHEM\1\METHODS\MATHODS\METHODS\V807251C.M (RTE Integrator)
Title : 8260 Purgable Organics
Last Update : Wed Jul 27 10:52:24 2011
Response via : Initial Calibration



analytics environmental laboratory LLC

195 Commerce Way
Portsmouth, New Hampshire 03801
603-436-5111 Fax 603-430-2151
800-929-9906

Mr. Steve Vetere
Tetra Tech NUS, Inc.
250 Andover Street
Wilmington MA 01887

August 3, 2011

CLIENT SAMPLE ID

Project Name: LMC WILMINGTON

Project Number: 1121C03346

Field Sample ID: LMC-SO-TRENCH-1

SAMPLE DATA

Lab Sample ID: 70594-3
Matrix: Solid
Percent Solid: 98
Dilution Factor: 91
Collection Date: 07/27/11
Lab Receipt Date: 07/27/11
Analysis Date: 07/28/11

ANALYTICAL RESULTS VOLATILE ORGANICS

COMPOUND	Quantitation Limit µg/kg	Result µg/kg	COMPOUND	Quantitation Limit µg/kg	Result µg/kg
Benzene	91	U	1,3-Dichloropropane	91	U
Bromobenzene	91	U	cis-1,3-Dichloropropene	91	U
Bromochloromethane	91	U	trans-1,3-Dichloropropene	91	U
Bromodichloromethane	68	U	2,2-Dichloropropane	91	U
Bromoform	68	U	1,1-Dichloropropene	91	U
Bromomethane	91	U	Ethylbenzene	91	U
n-butylbenzene	91	U	Hexachlorobutadiene	91	U
sec-butylbenzene	91	U	Isopropylbenzene	91	U
tert-butylbenzene	91	U	p-isopropyltoluene	91	U
Carbon Tetrachloride	91	U	Methylene Chloride	457	U
Chlorobenzene	91	U	Methyl-tert-butyl ether (MTBE)	68	U
Chloroethane	91	U	Naphthalene	91	U
Chloroform	68	U	n-Propylbenzene	91	U
Chloromethane	91	U	Styrene	91	U
2-Chlorotoluene	91	U	1,1,1,2-Tetrachloroethane	91	U
4-Chlorotoluene	91	U	1,1,2,2-Tetrachloroethane	68	U
Dibromochloromethane	68	U	Tetrachloroethene	91	U
1,2-Dibromo-3-chloropropane	91	U	Toluene	91	U
1,2-Dibromoethane	68	U	1,2,3-Trichlorobenzene	91	U
Dibromomethane	91	U	1,2,4-Trichlorobenzene	91	U
1,2-Dichlorobenzene	91	U	1,1,1-Trichloroethane	91	U
1,3-Dichlorobenzene	91	U	1,1,2-Trichloroethane	68	U
1,4-Dichlorobenzene	91	U	Trichloroethene	91	U
Dichlorodifluoromethane	91	U	Trichlorofluoromethane	91	U
1,1-Dichloroethane	91	U	1,2,3-Trichloropropane	91	U
1,2-Dichloroethane	68	U	1,2,4-Trimethylbenzene	91	U
1,1-Dichloroethene	68	U	1,3,5-Trimethylbenzene	91	U
cis-1,2-Dichloroethene	91	U	Vinyl Chloride	91	U
trans-1,2-Dichloroethene	91	U	o-Xylene	91	U
1,2-Dichloropropane	68	U	m,p-Xylene	91	U
Acetone	913	U	Diethyl ether	91	U
Carbon Disulfide	91	U	2-Hexanone	913	U
Tetrahydrofuran	457	U	Methyl isobutyl ketone	913	U
Methyl ethyl ketone	913	U	Di-isopropyl ether (DIPE)	91	U
t-Butyl alcohol (TBA)	1830	U	Ethyl t-butyl ether (ETBE)	91	U
t-Amyl methyl ether (TAME)	91	U	1,4-Dioxane	2740	U

Surrogate Standard Recovery

d4-1,2-Dichloroethane	125	%	d8-Toluene	114	%	Bromofluorobenzene	121 %

U=Undetected J=Estimated E=Exceeds Calibration Range B=Detected in

METHODOLOGY: Sample collection in accordance with SW-846 method 5035A. Sample analysis was conducted according to: Test Methods for Evaluating Solid Waste, SW-846 Method 8260B.

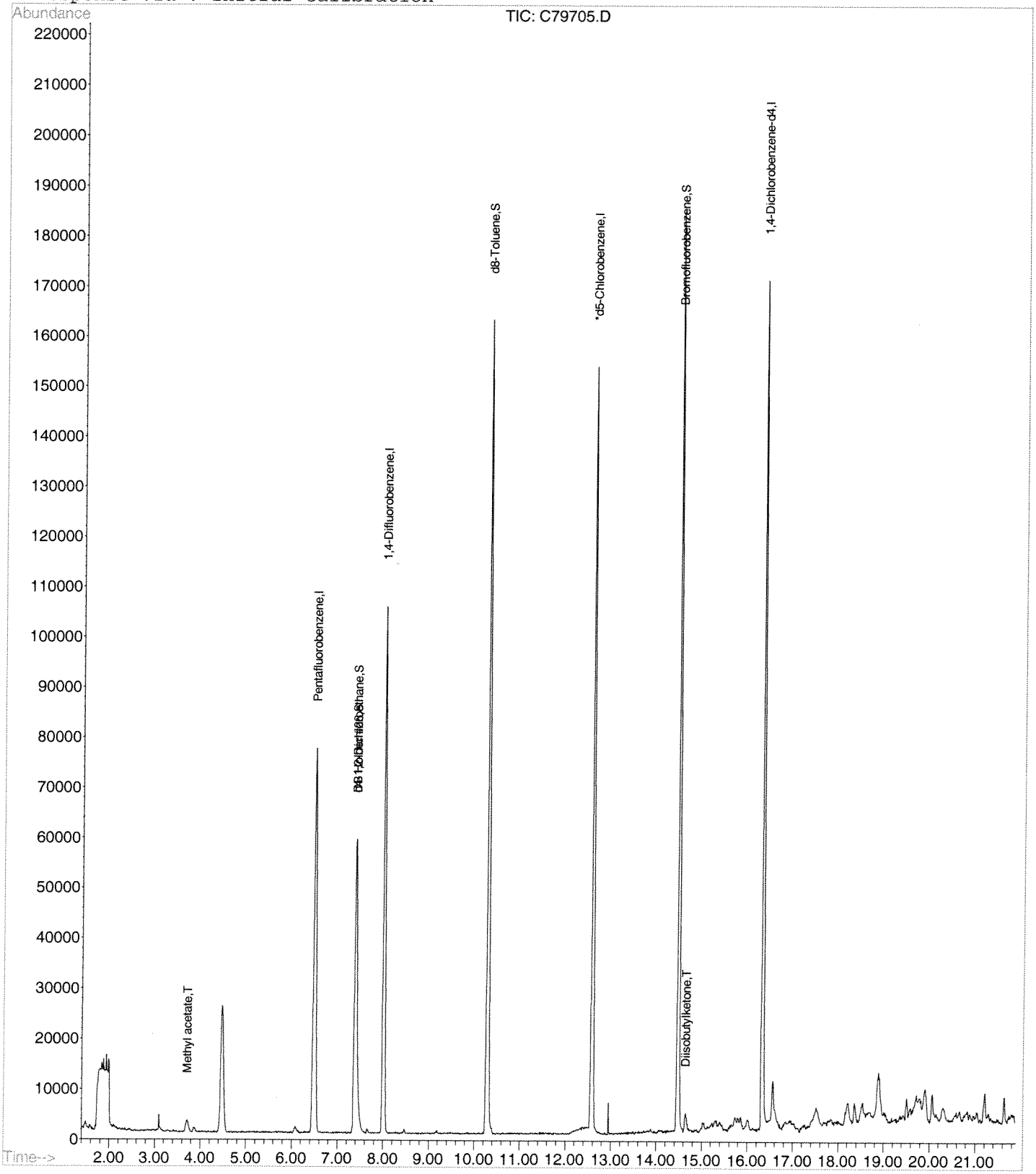
COMMENTS: Results are expressed on a dry weight basis.

~8260MCP (3) + Dioxane:Res(72):Rec(3)

Authorized signature

Data File : C:\HPCHEM\1\DATA\DATA\072811-C\C79705.D Vial: 14
Acq On : 28 Jul 2011 5:44 pm Operator: TD
Sample : 70594-3 Inst : Instr_C
Misc : 50,11.20,SOIL Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 29 10:42 2011 Quant Results File: V807251C.RES

Method : C:\HPCHEM\1\METHODS\MATHODS\METHODS\V807251C.M (RTE Integrator)
Title : 8260 Purgable Organics
Last Update : Wed Jul 27 10:52:24 2011
Response via : Initial Calibration



analytics environmental laboratory LLC

195 Commerce Way
Portsmouth, New Hampshire 03801
603-436-5111 Fax 603-430-2151
800-929-9906

Mr. Steve Vetere
Tetra Tech NUS, Inc.
250 Andover Street
Wilmington MA 01887

August 3, 2011

CLIENT SAMPLE ID

Project Name: LMC WILMINGTON

Project Number: 1121C03346

Field Sample ID: LMC-TB02

SAMPLE DATA

Lab Sample ID: 70594-4
Matrix: Solid
Percent Solid: 100
Dilution Factor: 100
Collection Date: 07/27/11
Lab Receipt Date: 07/27/11
Analysis Date: 07/28/11

ANALYTICAL RESULTS VOLATILE ORGANICS

COMPOUND	Quantitation Limit µg/kg	Result µg/kg	COMPOUND	Quantitation Limit µg/kg	Result µg/kg
Benzene	100	U	1,3-Dichloropropane	100	U
Bromobenzene	100	U	cis-1,3-Dichloropropene	100	U
Bromochloromethane	100	U	trans-1,3-Dichloropropene	100	U
Bromodichloromethane	75	U	2,2-Dichloropropane	100	U
Bromoform	75	U	1,1-Dichloropropene	100	U
Bromomethane	100	U	Ethylbenzene	100	U
n-butylbenzene	100	U	Hexachlorobutadiene	100	U
sec-butylbenzene	100	U	Isopropylbenzene	100	U
tert-butylbenzene	100	U	p-isopropyltoluene	100	U
Carbon Tetrachloride	100	U	Methylene Chloride	500	U
Chlorobenzene	100	U	Methyl-tert-butyl ether (MTBE)	75	U
Chloroethane	100	U	Naphthalene	100	U
Chloroform	75	U	n-Propylbenzene	100	U
Chloromethane	100	U	Styrene	100	U
2-Chlorotoluene	100	U	1,1,1,2-Tetrachloroethane	100	U
4-Chlorotoluene	100	U	1,1,2,2-Tetrachloroethane	75	U
Dibromochloromethane	75	U	Tetrachloroethene	100	U
1,2-Dibromo-3-chloropropane	100	U	Toluene	100	U
1,2-Dibromoethane	75	U	1,2,3-Trichlorobenzene	100	U
Dibromomethane	100	U	1,2,4-Trichlorobenzene	100	U
1,2-Dichlorobenzene	100	U	1,1,1-Trichloroethane	100	U
1,3-Dichlorobenzene	100	U	1,1,2-Trichloroethane	75	U
1,4-Dichlorobenzene	100	U	Trichloroethene	100	U
Dichlorodifluoromethane	100	U	Trichlorofluoromethane	100	U
1,1-Dichloroethane	100	U	1,2,3-Trichloropropane	100	U
1,2-Dichloroethane	75	U	1,2,4-Trimethylbenzene	100	U
1,1-Dichloroethene	75	U	1,3,5-Trimethylbenzene	100	U
cis-1,2-Dichloroethene	100	U	Vinyl Chloride	100	U
trans-1,2-Dichloroethene	100	U	o-Xylene	100	U
1,2-Dichloropropane	75	U	m,p-Xylene	100	U
Acetone	1000	U	Diethyl ether	100	U
Carbon Disulfide	100	U	2-Hexanone	1000	U
Tetrahydrofuran	500	U	Methyl isobutyl ketone	1000	U
Methyl ethyl ketone	1000	U	Di-isopropyl ether (DIPE)	100	U
t-Butyl alcohol (TBA)	2000	U	Ethyl t-butyl ether (ETBE)	100	U
t-Amyl methyl ether (TAME)	100	U	1,4-Dioxane	3000	U

Surrogate Standard Recovery

d4-1,2-Dichloroethane	95 %	d8-Toluene	86 %	Bromofluorobenzene	94 %

U=Undetected J=Estimated E=Exceeds Calibration Range B=Detected in

METHODOLOGY: Sample analysis was conducted according to: Test Methods for Evaluating Solid Waste, SW-846 Method 8260B.

COMMENTS: Results are expressed on a dry weight basis.

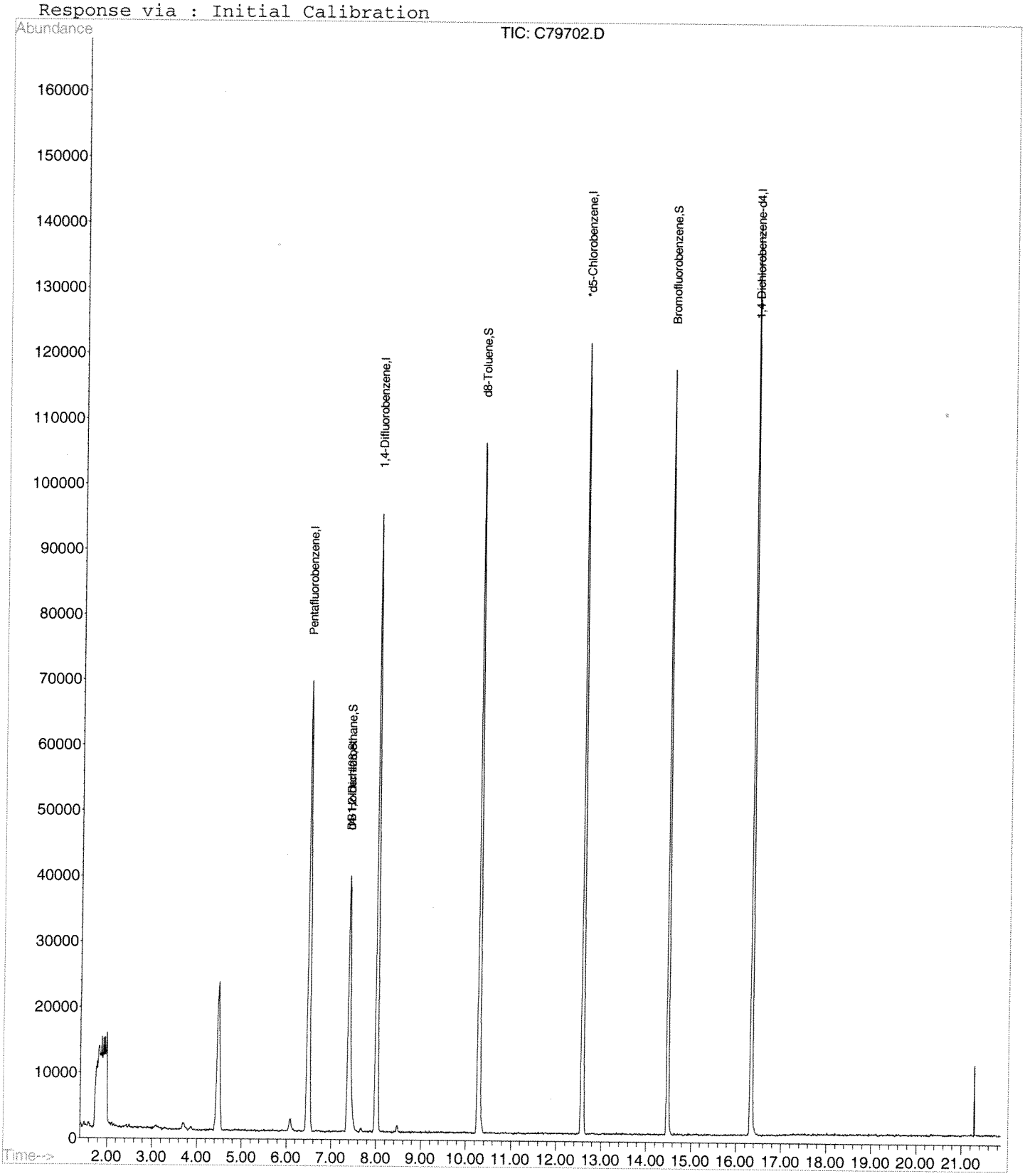
~8260MCP (3) + Dioxane:Res(72):Rec(3)

Authorized signature

Quantitation Report

Data File : C:\HPCHEM\1\DATA\DATA\072811-C\C79702.D Vial: 11
Acq On : 28 Jul 2011 4:19 pm Operator: TD
Sample : 70594-4 Inst : Instr_C
Misc : 50,10.00,SOIL Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 29 10:42 2011 Quant Results File: V807251C.RES

Method : C:\HPCHEM\1\METHODS\MATHODS\METHODS\V807251C.M (RTE Integrator)
Title : 8260 Purgable Organics
Last Update : Wed Jul 27 10:52:24 2011
Response via : Initial Calibration



VOLATILE
QC FORMS

VOLATILE ORGANIC SOIL
LABORATORY CONTROL/LABORATORY CONTROL DUPLICATE
PERCENT RECOVERY

Instrument ID: C
GC Column: RTX-502.2
Column ID: 0.25 mm
Heated purge (Y/N): N

SDG: 70594
Non-spiked sample: MB07281C
Spike: LS07281C
Spike duplicate: LS07281C2

COMPOUND	LCS SPIKE ADDED (ug/kg)	LCSD SPIKE ADDED (ug/kg)	LOWER LIMIT	UPPER LIMIT	RPD LIMIT	NON-SPIKE RESULT (ug/kg)	SPIKE RESULT (ug/kg)	SPIKE % REC	#	SPIKE DUP RESULT (ug/kg)	SPIKE DUP % REC	#	RPD	#
Dichlorodifluoromethane	2000	2000	49	82	25	0	1103	55		1207	60		9	
Chloromethane	2000	2000	75	125	25	0	1457	73	*	1573	79		8	
Vinyl Chloride	2000	2000	75	125	25	0	1654	83		1728	86		4	
Bromomethane	2000	2000	75	125	25	0	1764	88		1883	94		7	
Chloroethane	2000	2000	75	125	25	0	1473	74	*	1766	88		18	
t-Butyl alcohol (TBA)	10000	10000	60	140	25	0	7949	79		10936	109		32	*
Trichlorofluoromethane	2000	2000	75	125	25	0	1932	97		2153	108		11	
Diethyl ether	2000	2000	75	125	25	0	1583	79		1950	98		21	
1,1,2-Trichlorotrifluoroethane	2000	2000	75	125	25	0	1893	95		2055	103		8	
Acetone	5000	5000	75	125	25	0	4089	82		5110	102		22	
1,1-Dichloroethene	2000	2000	75	125	25	0	1887	94		2177	109		14	
Methyl iodide	2000	2000	75	125	25	0	1689	84		1947	97		14	
Di-isopropyl ether (DIPE)	2000	2000	75	125	25	0	1696	85		1941	97		13	
Methylene Chloride	2000	2000	75	125	25	0	1480	74	*	1716	86		15	
Carbon Disulfide	2000	2000	75	125	25	0	1658	83		1894	95		13	
Acrylonitrile	2000	2000	75	125	25	0	1543	77		1900	95		21	
Methyl-tert-butyl ether (MTBE)	2000	2000	75	125	25	0	1904	95		2228	111		16	
trans-1,2-Dichloroethene	2000	2000	75	125	25	0	1880	94		2157	108		14	
1,1-Dichloroethane	2000	2000	75	125	25	0	1815	91		2115	106		15	
Methyl ethyl ketone	5000	5000	60	140	25	0	3745	75		4672	93		22	
Ethyl t-butyl ether (ETBE)	2000	2000	75	125	25	0	1856	93		2141	107		14	
2,2-Dichloropropane	2000	2000	75	125	25	0	2036	102		2220	111		9	
cis-1,2-Dichloroethene	2000	2000	75	125	25	0	1888	94		2041	102		8	
t-Amyl methyl ether (TAME)	2000	2000	75	125	25	0	1760	88		2102	105		18	
Chloroform	2000	2000	75	125	25	0	1835	92		2064	103		12	
Bromochloromethane	2000	2000	75	125	25	0	1864	93		2157	108		15	
Tetrahydrofuran	2000	2000	60	140	25	0	1498	75		1990	100		28	*
1,1,1-Trichloroethane	2000	2000	75	125	25	0	2229	111		2296	115		3	
1,1-Dichloropropene	2000	2000	75	125	25	0	1950	98		2152	108		10	
Carbon Tetrachloride	2000	2000	75	125	25	0	2229	111		2524	126	*	12	
1,2-Dichloroethane	2000	2000	75	125	25	0	1891	95		2138	107		12	
Benzene	2000	2000	75	125	25	0	1808	90		2113	106		16	
Trichloroethene	2000	2000	75	125	25	0	2015	101		2239	112		10	
1,2-Dichloropropane	2000	2000	75	125	25	0	1975	99		2132	107		8	
Methylmethacrylate	2000	2000	75	125	25	0	1737	87		1973	99		13	
Bromodichloromethane	2000	2000	75	125	25	0	2075	104		2207	110		6	
Dibromomethane	2000	2000	75	125	25	0	1989	99		2117	106		6	
1,4-Dioxane	25000	25000	60	140	25	0	13960	56	*	20928	84		40	*
2-Hexanone	5000	5000	75	125	25	0	4514	90		5166	103		13	
Methyl isobutyl ketone	5000	5000	75	125	25	0	4748	95		5313	106		11	
cis-1,3-Dichloropropene	2000	2000	75	125	25	0	2100	105		2273	114		8	
Toluene	2000	2000	75	125	25	0	1960	98		2086	104		6	
trans-1,3-Dichloropropene	2000	2000	75	125	25	0	1953	98		2216	111		13	
1,1,2-Trichloroethane	2000	2000	75	125	25	0	1856	93		2117	106		13	
1,3-Dichloropropane	2000	2000	75	125	25	0	1907	95		2087	104		9	
Tetrachloroethene	2000	2000	75	125	25	0	2088	104		2246	112		7	
Dibromochloromethane	2000	2000	75	125	25	0	2000	100		2170	109		8	
1,2-Dibromoethane	2000	2000	75	125	25	0	1928	96		2118	106		9	
Chlorobenzene	2000	2000	75	125	25	0	2032	102		2224	111		9	
1,1,1,2-Tetrachloroethane	2000	2000	75	125	25	0	2058	103		2219	111		8	
Ethylbenzene	2000	2000	75	125	25	0	2152	108		2306	115		7	
m,p-Xylene	4000	4000	75	125	25	0	4244	106		4652	116		9	
o-Xylene	2000	2000	75	125	25	0	2130	107		2325	116		9	

VOLATILE ORGANIC SOIL
LABORATORY CONTROL/LABORATORY CONTROL DUPLICATE
PERCENT RECOVERY

Instrument ID: C
GC Column: RTX-502.2
Column ID: 0.25 mm
Heated purge (Y/N): N

SDG: 70594
Non-spiked sample: MB07281C
Spike: LS07281C
Spike duplicate: LS07281C2

COMPOUND	LCS SPIKE ADDED (ug/kg)	LCSD SPIKE ADDED (ug/kg)	LOWER LIMIT	UPPER LIMIT	RPD LIMIT	NON-SPIKE RESULT (ug/kg)	SPIKE RESULT (ug/kg)	SPIKE % REC	#	SPIKE DUP RESULT (ug/kg)	SPIKE DUP % REC	#	RPD	#
Styrene	2000	2000	75	125	25	0	2212	111		2399	120		8	
Bromoform	2000	2000	75	125	25	0	2078	104		2228	111		7	
Isopropylbenzene	2000	2000	75	125	25	0	2242	112		2475	124		10	
1,1,2,2-Tetrachloroethane	2000	2000	75	125	25	0	1823	91		2062	103		12	
1,2,3-Trichloropropane	2000	2000	75	125	25	0	1804	90		2002	100		10	
trans-1,4-Dichloro-2-butene	2000	2000	75	125	25	0	1991	100		2258	113		13	
n-Propylbenzene	2000	2000	75	125	25	0	2121	106		2298	115		8	
Bromobenzene	2000	2000	75	125	25	0	2032	102		2251	113		10	
1,3,5-Trimethylbenzene	2000	2000	75	125	25	0	2253	113		2398	120		6	
2-Chlorotoluene	2000	2000	75	125	25	0	2138	107		2267	113		6	
4-Chlorotoluene	2000	2000	75	125	25	0	2122	106		2309	115		8	
tert-butylbenzene	2000	2000	75	125	25	0	2174	109		2394	120		10	
1,2,4-Trimethylbenzene	2000	2000	75	125	25	0	2241	112		2324	116		4	
sec-butylbenzene	2000	2000	75	125	25	0	2298	115		2516	126	*	9	
p-isopropyltoluene	2000	2000	75	125	25	0	2295	115		2395	120		4	
1,3-Dichlorobenzene	2000	2000	75	125	25	0	2061	103		2251	113		9	
1,4-Dichlorobenzene	2000	2000	75	125	25	0	2042	102		2168	108		6	
n-butylbenzene	2000	2000	75	125	25	0	2207	110		2274	114		3	
1,2-Dichlorobenzene	2000	2000	75	125	25	0	2060	103		2192	110		6	
1,2-Dibromo-3-chloropropane	2000	2000	75	125	25	0	2002	100		2241	112		11	
1,2,4-Trichlorobenzene	2000	2000	75	125	25	0	2275	114		2388	119		5	
Hexachlorobutadiene	2000	2000	75	125	25	0	2397	120		2607	130	*	8	
Naphthalene	2000	2000	75	125	25	0	1939	97		2119	106		9	
1,2,3-Trichlorobenzene	2000	2000	75	125	25	0	2155	108		2347	117		9	

Column to be used to flag recovery and RPD values outside of QC limits
* Values outside QC limits

Non-spike result of "0" used in place of "U" to allow calculation of spike recovery.

Comments: _____

VPH
DATA SUMMARIES

analytics environmental laboratory LLC

195 Commerce Way
Portsmouth, New Hampshire 03801
603-436-5111 Fax 603-430-2151
800-929-9906

Mr. Steve Vetere
Tetra Tech NUS, Inc.
250 Andover Street
Wilmington MA 01887

August 1, 2011

CLIENT SAMPLE ID

Project Name: LMC WILMINGTON

Project Number: 1121C03346
Client Sample ID: LabQC

SAMPLE DATA

Lab Sample ID: MBV072811K2
Matrix: Soil
Percent Solid: 0
Dilution Factor: 50
Collection Date:
Lab Receipt Date:
Analysis Date: 07/28/11

VPH ANALYTICAL RESULTS

RANGE/TARGET ANALYTE	Elution Range	RL	Units	Result
Unadjusted C5-C8 Aliphatics[1]	N/A	2500	µg/kg	U
Unadjusted C9-C12 Aliphatics[1]	N/A	2500	µg/kg	U
Benzene	C5-C8	100	µg/kg	U
Ethylbenzene	C9-C12	100	µg/kg	U
Methyl-tert-butyl ether	C5-C8	100	µg/kg	U
Naphthalene	N/A	100	µg/kg	U
Toluene	C5-C8	100	µg/kg	U
m- & p-Xylenes	C9-C12	200	µg/kg	U
o-Xylene	C9-C12	100	µg/kg	U
C5-C8 Aliphatics Hydrocarbons[1,2]	N/A	2500	µg/kg	U
C9-C12 Aliphatic Hydrocarbons[1,3]	N/A	2500	µg/kg	U
C9-C10 Aromatic Hydrocarbons[1]	N/A	500	µg/kg	U
Surrogate % Recovery (Trifluorotoluene) PID				93
Surrogate % Recovery (Trifluorotoluene) FID				91
Surrogate Acceptance Range				70-130%

[1]Hydrocarbon Range data exclude concentrations of any surrogate(s) and/or internal standards eluting in that range.
[2]C5-C8 Aliphatic Hydrocarbons exclude the concentration of Target Analytes eluting in that range
[3]C9-C12 Aliphatic Hydrocarbons exclude conc. of Target Analytes eluting in that range and conc. of C9-C10 Aromatic Hydrocarbons.
RL = Report Limit
U=Undetected J=Estimated E=Exceeds Calibration Range B=Detected in Blank

METHODOLOGY: MADEP Volatile Petroleum Hydrocarbons (VPH), ORS Division of Environmental Analysis,Revision 1.1 May 2004.

COMMENTS: Samples were received in accordance with method criteria unless noted on the sample receipt checklist. Results are expressed on a moisture corrected and dry weight basis.

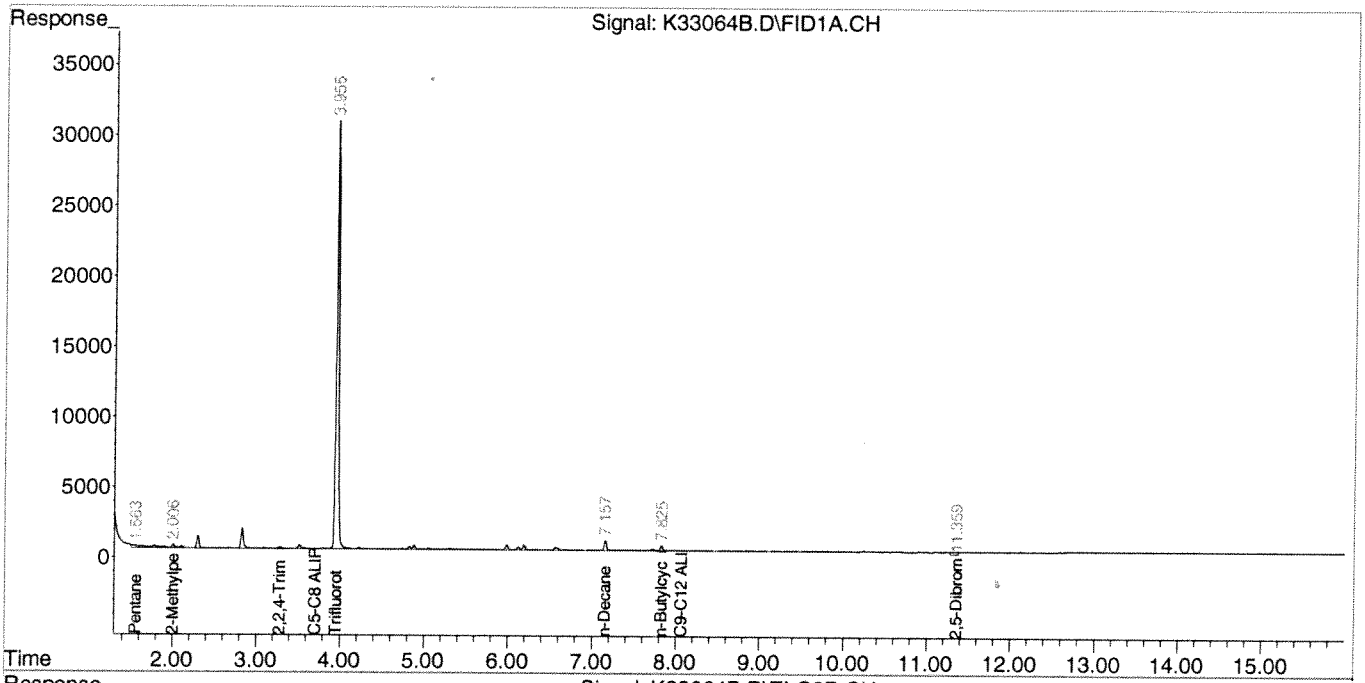
Authorized signature: 

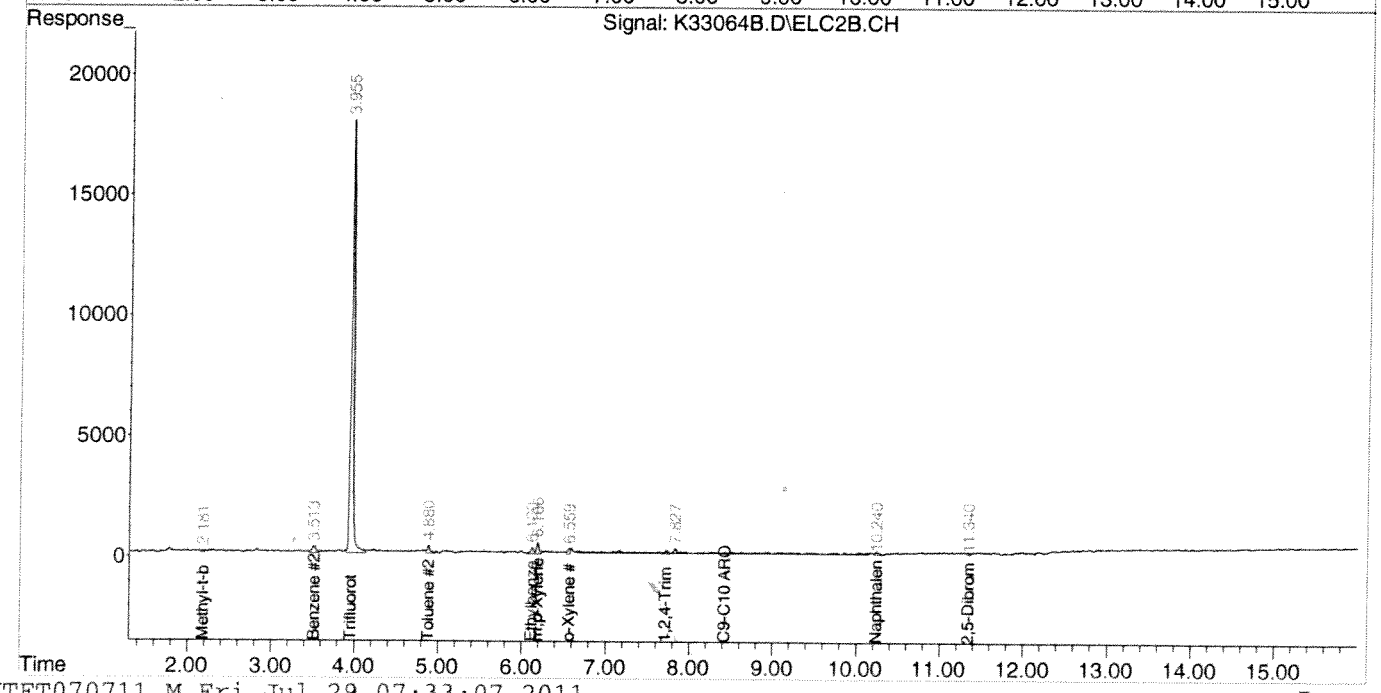
Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\072811-K\
Data File : K33064B.D
Signal(s) : Signal #1: FID1A.CH Signal #2: ELC2B.CH
Acq On : 28 Jul 2011 2:17 pm
Operator : KAM
Sample : MBV072811K2
Misc : 100,10.00,SOIL
ALS Vial : 8 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Jul 28 14:34:43 2011
Quant Method : C:\msdchem\1\METHODS\VPHTFT070711.M
Quant Title : Volatile Petroleum Hydrocarbons (VPH) MA DEP 2004
QLast Update : Fri Jul 08 18:01:21 2011
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Small noise peaks clipped

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :





analytics environmental laboratory LLC

195 Commerce Way
Portsmouth, New Hampshire 03801
603-436-5111 Fax 603-430-2151
800-929-9906

Mr. Steve Vetere
Tetra Tech NUS, Inc.
250 Andover Street
Wilmington MA 01887

August 1, 2011

CLIENT SAMPLE ID

Project Name: LMC WILMINGTON

Project Number: 1121C03346
Client Sample ID: LMC-CONCRETE-NC-1

SAMPLE DATA

Lab Sample ID: 70594-1
Matrix: Solid
Percent Solid: 95
Dilution Factor: 72
Collection Date: 07/27/11
Lab Receipt Date: 07/27/11
Analysis Date: 07/28/11

VPH ANALYTICAL RESULTS

RANGE/TARGET ANALYTE	Elution Range	RL	Units	Result
Unadjusted C5-C8 Aliphatics[1]	N/A	3594	µg/kg	U
Unadjusted C9-C12 Aliphatics[1]	N/A	3594	µg/kg	**24700**
Benzene	C5-C8	144	µg/kg	U
Ethylbenzene	C9-C12	144	µg/kg	U
Methyl-tert-butyl ether	C5-C8	144	µg/kg	U
Naphthalene	N/A	144	µg/kg	U
Toluene	C5-C8	144	µg/kg	U
m- & p-Xylenes	C9-C12	288	µg/kg	U
o-Xylene	C9-C12	144	µg/kg	U
C5-C8 Aliphatics Hydrocarbons[1,2]	N/A	3594	µg/kg	U
C9-C12 Aliphatic Hydrocarbons[1,3]	N/A	3594	µg/kg	**16300**
C9-C10 Aromatic Hydrocarbons[1]	N/A	719	µg/kg	**8420**
Surrogate % Recovery (Trifluorotoluene) PID				99
Surrogate % Recovery (Trifluorotoluene) FID				98
Surrogate Acceptance Range				70-130%

[1]Hydrocarbon Range data exclude concentrations of any surrogate(s) and/or internal standards eluting in that range.
[2]C5-C8 Aliphatic Hydrocarbons exclude the concentration of Target Analytes eluting in that range
[3]C9-C12 Aliphatic Hydrocarbons exclude conc. of Target Analytes eluting in that range and conc. of C9-C10 Aromatic Hydrocarbons.
RL = Report Limit
U=Undetected J=Estimated E=Exceeds Calibration Range B=Detected in Blank

METHODOLOGY: MADEP Volatile Petroleum Hydrocarbons (VPH), ORS Division of Environmental Analysis,Revision 1.1 May 2004.

COMMENTS: Samples were received in accordance with method criteria unless noted on the sample receipt checklist. Results are expressed on a moisture corrected and dry weight basis.

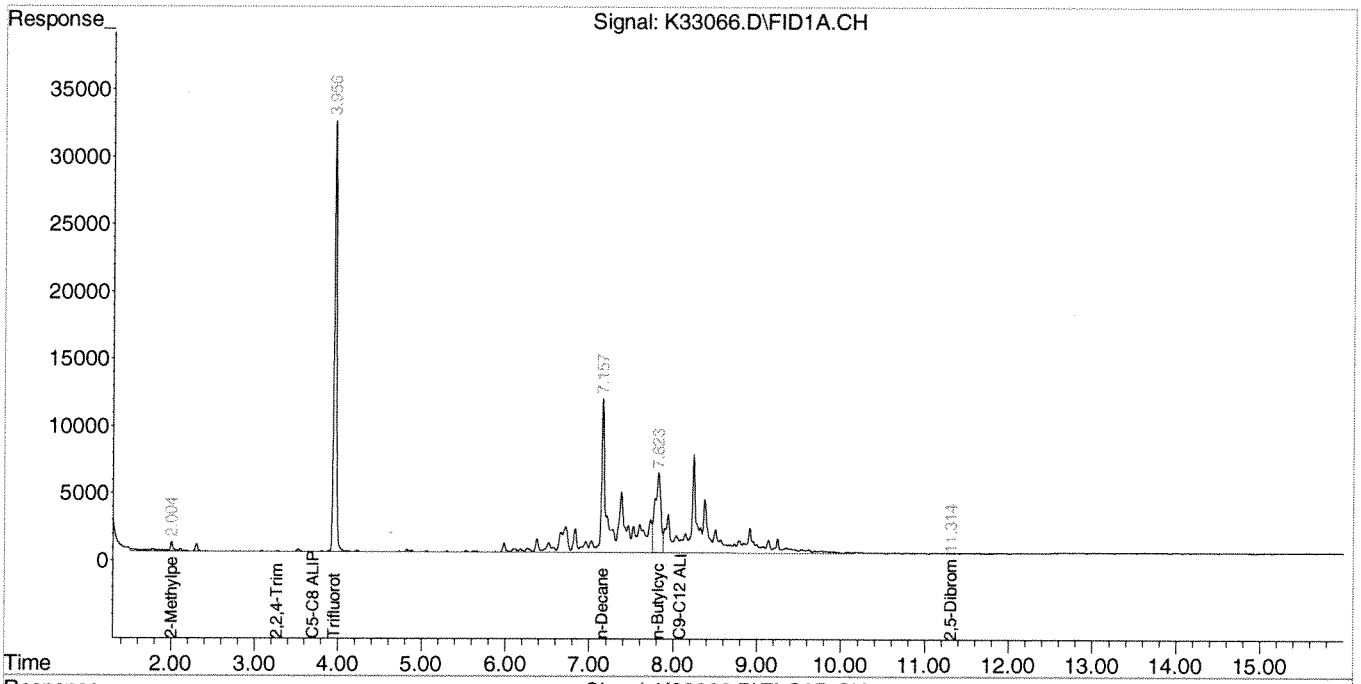
Authorized signature: _____

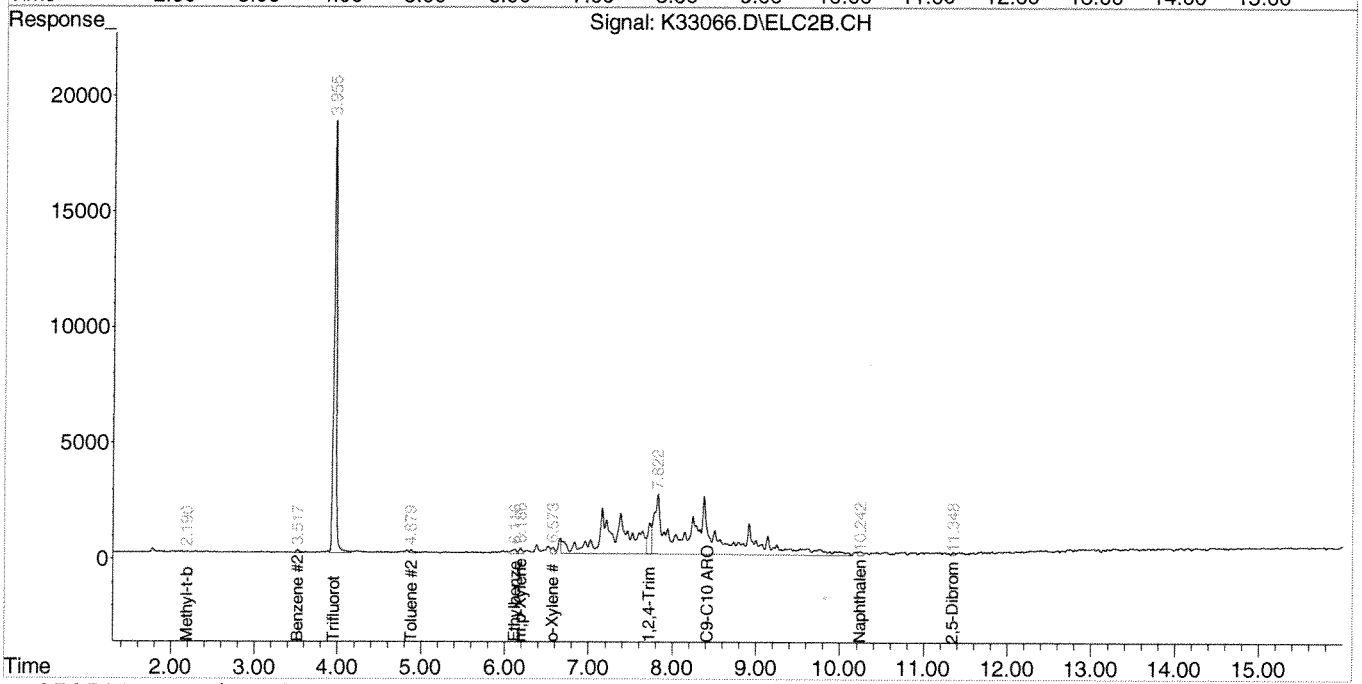
Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\072811-K\
Data File : K33066.D
Signal(s) : Signal #1: FID1A.CH Signal #2: ELC2B.CH
Acq On : 28 Jul 2011 3:31 pm
Operator : KAM
Sample : 70594-1
Misc : 100,7.56,SOIL
ALS Vial : 10 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Jul 28 15:56:12 2011
Quant Method : C:\msdchem\1\METHODS\VPHTFT070711.M
Quant Title : Volatile Petroleum Hydrocarbons (VPH) MA DEP 2004
QLast Update : Fri Jul 08 18:01:21 2011
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Small noise peaks clipped

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :





analytics environmental laboratory LLC

195 Commerce Way
Portsmouth, New Hampshire 03801
603-436-5111 Fax 603-430-2151
800-929-9906

Mr. Steve Vetere
Tetra Tech NUS, Inc.
250 Andover Street
Wilmington MA 01887

August 1, 2011

CLIENT SAMPLE ID

Project Name: LMC WILMINGTON

Project Number: 1121C03346
Client Sample ID: LMC-CONCRETE-NC-2

SAMPLE DATA

Lab Sample ID: 70594-2
Matrix: Solid
Percent Solid: 97
Dilution Factor: 1150
Collection Date: 07/27/11
Lab Receipt Date: 07/27/11
Analysis Date: 07/28/11

VPH ANALYTICAL RESULTS

RANGE/TARGET ANALYTE	Elution Range	RL	Units	Result
Unadjusted C5-C8 Aliphatics[1]	N/A	57500	µg/kg	U
Unadjusted C9-C12 Aliphatics[1]	N/A	57500	µg/kg	**118000**
Benzene	C5-C8	2299	µg/kg	U
Ethylbenzene	C9-C12	2299	µg/kg	U
Methyl-tert-butyl ether	C5-C8	2299	µg/kg	U
Naphthalene	N/A	2299	µg/kg	U
Toluene	C5-C8	2299	µg/kg	U
m- & p-Xylenes	C9-C12	4599	µg/kg	U
o-Xylene	C9-C12	2299	µg/kg	U
C5-C8 Aliphatics Hydrocarbons[1,2]	N/A	57500	µg/kg	U
C9-C12 Aliphatic Hydrocarbons[1,3]	N/A	57500	µg/kg	**79600**
C9-C10 Aromatic Hydrocarbons[1]	N/A	11500	µg/kg	**39400**
Surrogate % Recovery (Trifluorotoluene) PID				113
Surrogate % Recovery (Trifluorotoluene) FID				105
Surrogate Acceptance Range				70-130%

[1]Hydrocarbon Range data exclude concentrations of any surrogate(s) and/or internal standards eluting in that range.
[2]C5-C8 Aliphatic Hydrocarbons exclude the concentration of Target Analytes eluting in that range
[3]C9-C12 Aliphatic Hydrocarbons exclude conc. of Target Analytes eluting in that range and conc. of C9-C10 Aromatic Hydrocarbons.
RL = Report Limit
U=Undetected J=Estimated E=Exceeds Calibration Range B=Detected in Blank

METHODOLOGY: MADEP Volatile Petroleum Hydrocarbons (VPH), ORS Division of Environmental Analysis,Revision 1.1 May 2004.

COMMENTS: Samples were received in accordance with method criteria unless noted on the sample receipt checklist. Results are expressed on a moisture corrected and dry weight basis.

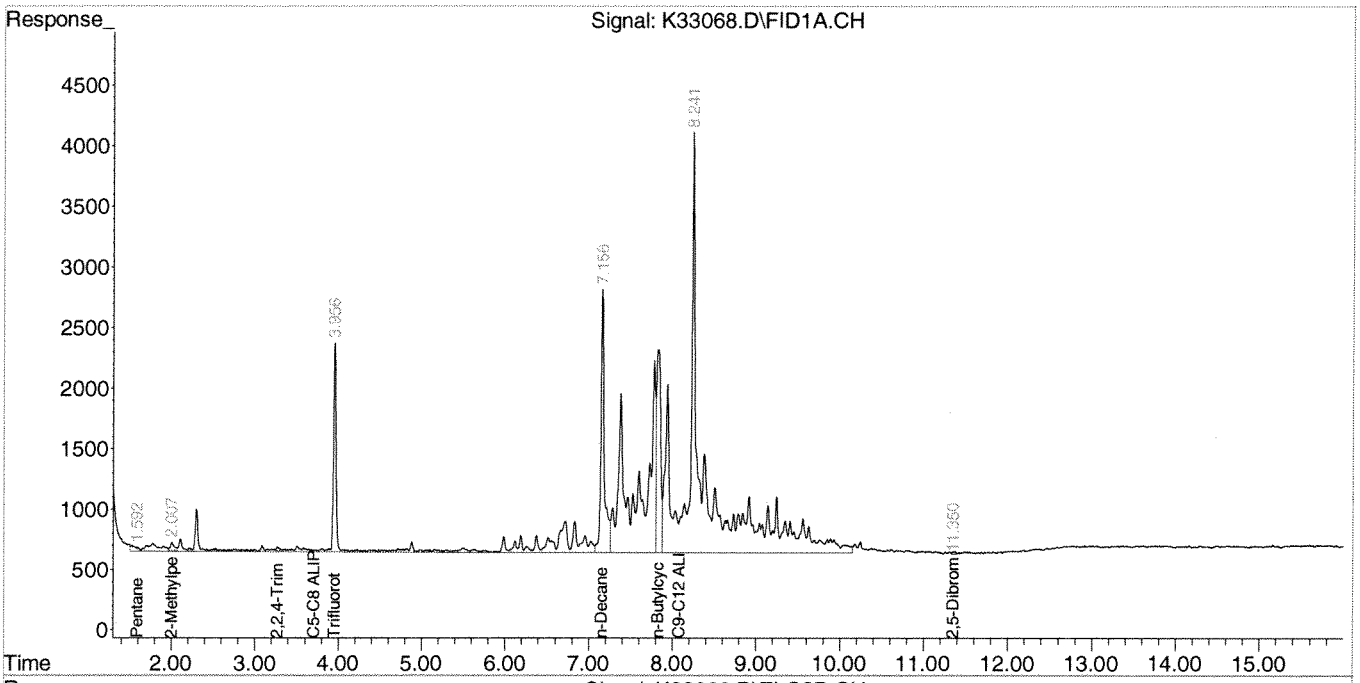
Authorized signature: 

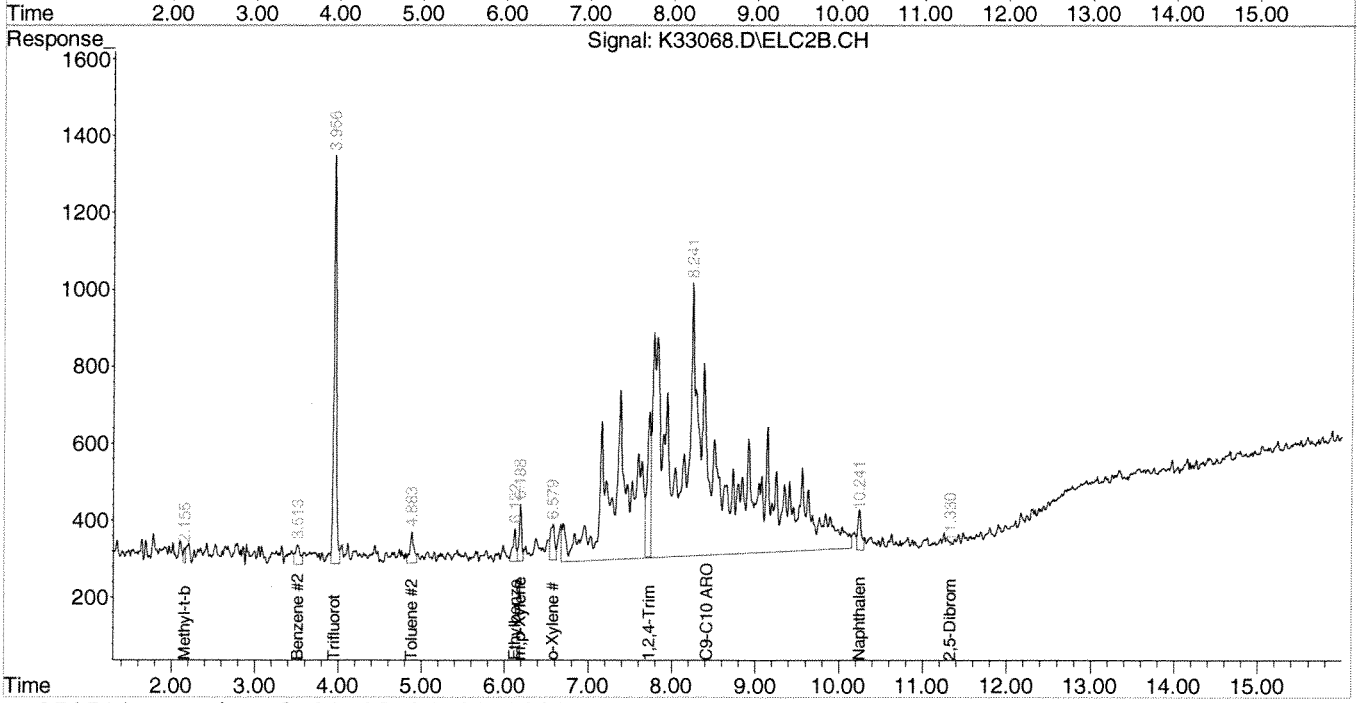
Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\072811-K\
Data File : K33068.D
Signal(s) : Signal #1: FID1A.CH Signal #2: ELC2B.CH
Acq On : 28 Jul 2011 4:25 pm
Operator : KAM
Sample : 70594-2,,20X
Misc : 5,9.15,SOIL
ALS Vial : 12 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Jul 28 16:41:36 2011
Quant Method : C:\msdchem\1\METHODS\VPHTFT070711.M
Quant Title : Volatile Petroleum Hydrocarbons (VPH) MA DEP 2004
QLast Update : Fri Jul 08 18:01:21 2011
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Small noise peaks clipped

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :





analytics environmental laboratory LLC

195 Commerce Way
Portsmouth, New Hampshire 03801
603-436-5111 Fax 603-430-2151
800-929-9906

Mr. Steve Vetere
Tetra Tech NUS, Inc.
250 Andover Street
Wilmington MA 01887

August 1, 2011

CLIENT SAMPLE ID

Project Name: LMC WILMINGTON

Project Number: 1121C03346
Client Sample ID: LMC-SO-TRENCH-1

SAMPLE DATA

Lab Sample ID: 70594-3
Matrix: Solid
Percent Solid: 98
Dilution Factor: 50
Collection Date: 07/27/11
Lab Receipt Date: 07/27/11
Analysis Date: 07/28/11

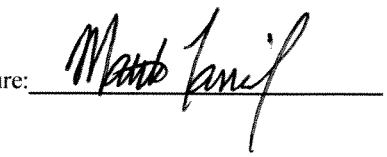
VPH ANALYTICAL RESULTS

RANGE/TARGET ANALYTE	Elution Range	RL	Units	Result
Unadjusted C5-C8 Aliphatics[1]	N/A	2496	µg/kg	U
Unadjusted C9-C12 Aliphatics[1]	N/A	2496	µg/kg	U
Benzene	C5-C8	99.8	µg/kg	U
Ethylbenzene	C9-C12	99.8	µg/kg	U
Methyl-tert-butyl ether	C5-C8	99.8	µg/kg	U
Naphthalene	N/A	99.8	µg/kg	U
Toluene	C5-C8	99.8	µg/kg	U
m- & p-Xylenes	C9-C12	200	µg/kg	U
o-Xylene	C9-C12	99.8	µg/kg	U
C5-C8 Aliphatics Hydrocarbons[1,2]	N/A	2496	µg/kg	U
C9-C12 Aliphatic Hydrocarbons[1,3]	N/A	2496	µg/kg	U
C9-C10 Aromatic Hydrocarbons[1]	N/A	499	µg/kg	U
Surrogate % Recovery (Trifluorotoluene) PID				97
Surrogate % Recovery (Trifluorotoluene) FID				97
Surrogate Acceptance Range				70-130%

[1]Hydrocarbon Range data exclude concentrations of any surrogate(s) and/or internal standards eluting in that range.
[2]C5-C8 Aliphatic Hydrocarbons exclude the concentration of Target Analytes eluting in that range
[3]C9-C12 Aliphatic Hydrocarbons exclude conc. of Target Analytes eluting in that range and conc. of C9-C10 Aromatic Hydrocarbons.
RL = Report Limit
U=Undetected J=Estimated E=Exceeds Calibration Range B=Detected in Blank

METHODOLOGY: MADEP Volatile Petroleum Hydrocarbons (VPH), ORS Division of Environmental Analysis,Revision 1.1 May 2004.

COMMENTS: Samples were received in accordance with method criteria unless noted on the sample receipt checklist. Results are expressed on a moisture corrected and dry weight basis.

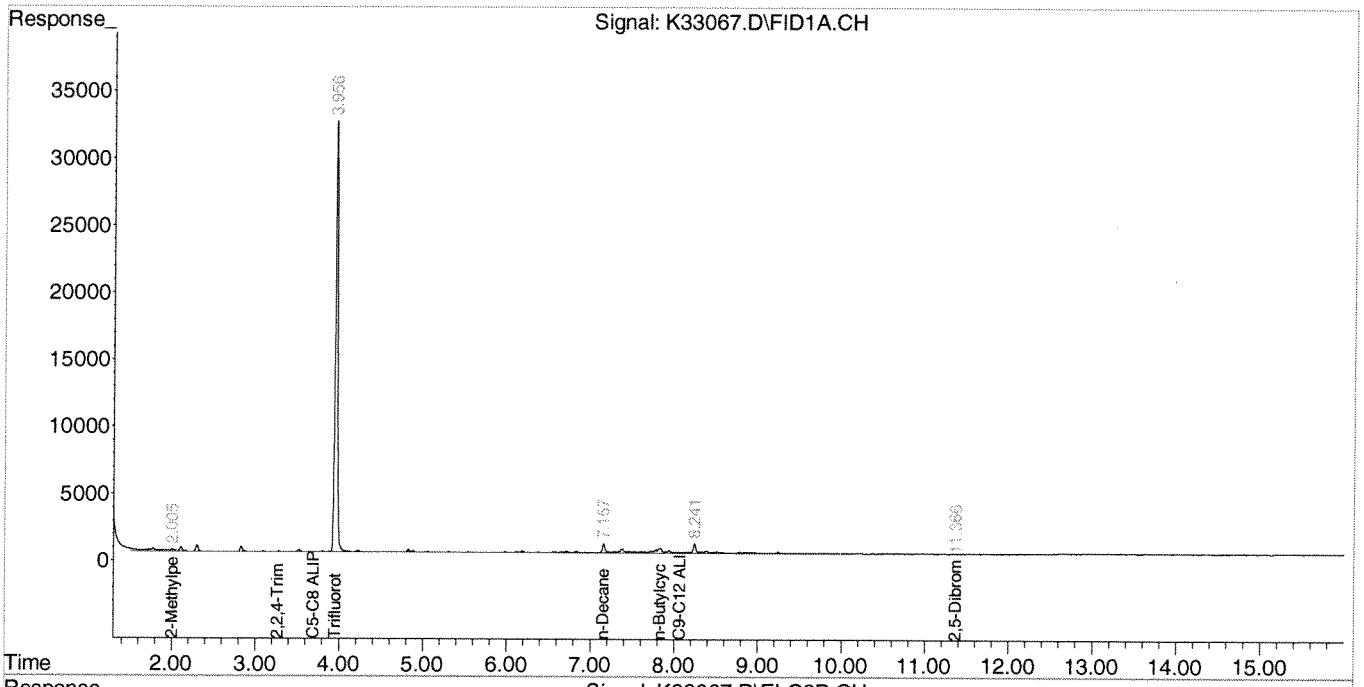
Authorized signature: 

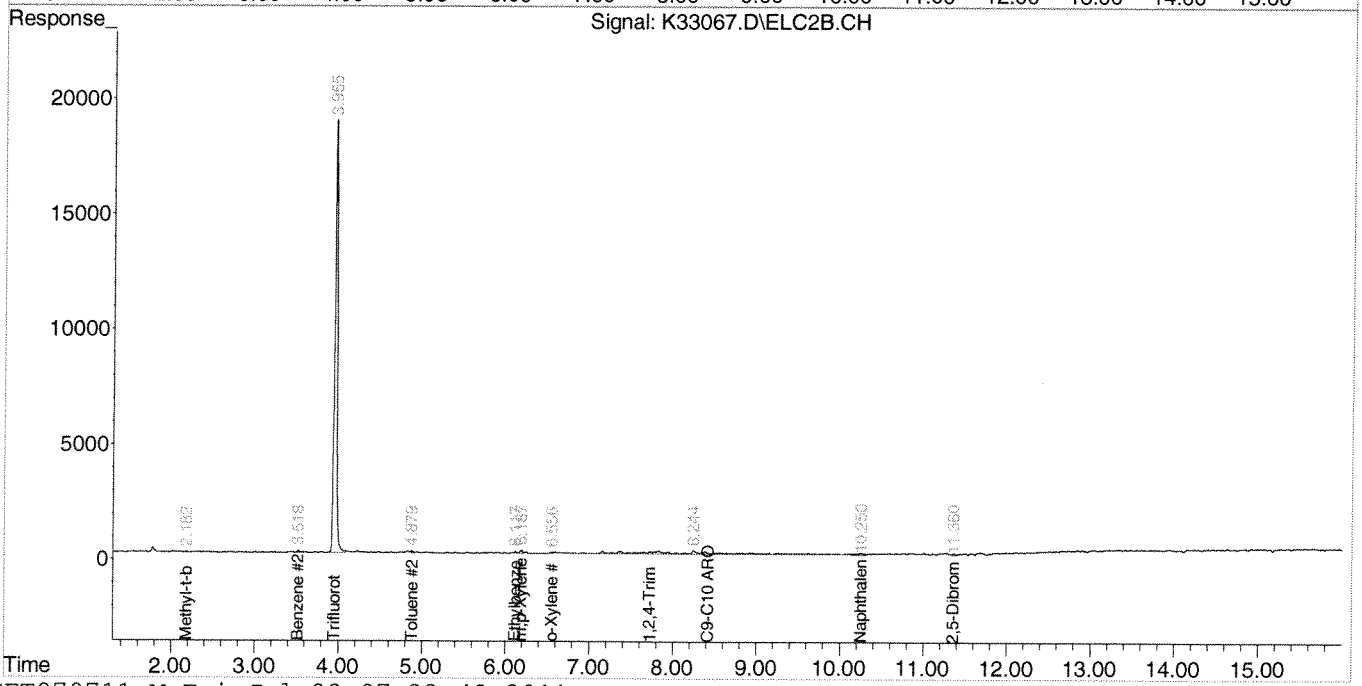
Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\072811-K\
Data File : K33067.D
Signal(s) : Signal #1: FID1A.CH Signal #2: ELC2B.CH
Acq On : 28 Jul 2011 3:58 pm
Operator : KAM
Sample : 70594-3
Misc : 100,12.58,SOIL,,12 ML FV,,KAM
ALS Vial : 11 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Jul 28 16:37:20 2011
Quant Method : C:\msdchem\1\METHODS\VPHTFT070711.M
Quant Title : Volatile Petroleum Hydrocarbons (VPH) MA DEP 2004
QLast Update : Fri Jul 08 18:01:21 2011
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Small noise peaks clipped

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :





analytics environmental laboratory LLC

195 Commerce Way
Portsmouth, New Hampshire 03801
603-436-5111 Fax 603-430-2151
800-929-9906

Mr. Steve Vetere
Tetra Tech NUS, Inc.
250 Andover Street
Wilmington MA 01887

August 1, 2011

CLIENT SAMPLE ID

Project Name: LMC WILMINGTON

Project Number: 1121C03346
Client Sample ID: LMC-TB02

SAMPLE DATA

Lab Sample ID: 70594-4
Matrix: Solid
Percent Solid: 100
Dilution Factor: 50
Collection Date: 07/27/11
Lab Receipt Date: 07/27/11
Analysis Date: 07/28/11

VPH ANALYTICAL RESULTS

RANGE/TARGET ANALYTE	Elution Range	RL	Units	Result
Unadjusted C5-C8 Aliphatics[1]	N/A	2500	µg/kg	U
Unadjusted C9-C12 Aliphatics[1]	N/A	2500	µg/kg	U
Benzene	C5-C8	100	µg/kg	U
Ethylbenzene	C9-C12	100	µg/kg	U
Methyl-tert-butyl ether	C5-C8	100	µg/kg	U
Naphthalene	N/A	100	µg/kg	U
Toluene	C5-C8	100	µg/kg	U
m- & p-Xylenes	C9-C12	200	µg/kg	U
o-Xylene	C9-C12	100	µg/kg	U
C5-C8 Aliphatics Hydrocarbons[1,2]	N/A	2500	µg/kg	U
C9-C12 Aliphatic Hydrocarbons[1,3]	N/A	2500	µg/kg	U
C9-C10 Aromatic Hydrocarbons[1]	N/A	500	µg/kg	U
Surrogate % Recovery (Trifluorotoluene) PID				89
Surrogate % Recovery (Trifluorotoluene) FID				88
Surrogate Acceptance Range				70-130%

[1]Hydrocarbon Range data exclude concentrations of any surrogate(s) and/or internal standards eluting in that range.
[2]C5-C8 Aliphatic Hydrocarbons exclude the concentration of Target Analytes eluting in that range
[3]C9-C12 Aliphatic Hydrocarbons exclude conc. of Target Analytes eluting in that range and conc. of C9-C10 Aromatic Hydrocarbons.
RL = Report Limit
U=Undetected J=Estimated E=Exceeds Calibration Range B=Detected in Blank

METHODOLOGY: MADEP Volatile Petroleum Hydrocarbons (VPH), ORS Division of Environmental Analysis,Revision 1.1 May 2004.

COMMENTS: Samples were received in accordance with method criteria unless noted on the sample receipt checklist. Results are expressed on a moisture corrected and dry weight basis.

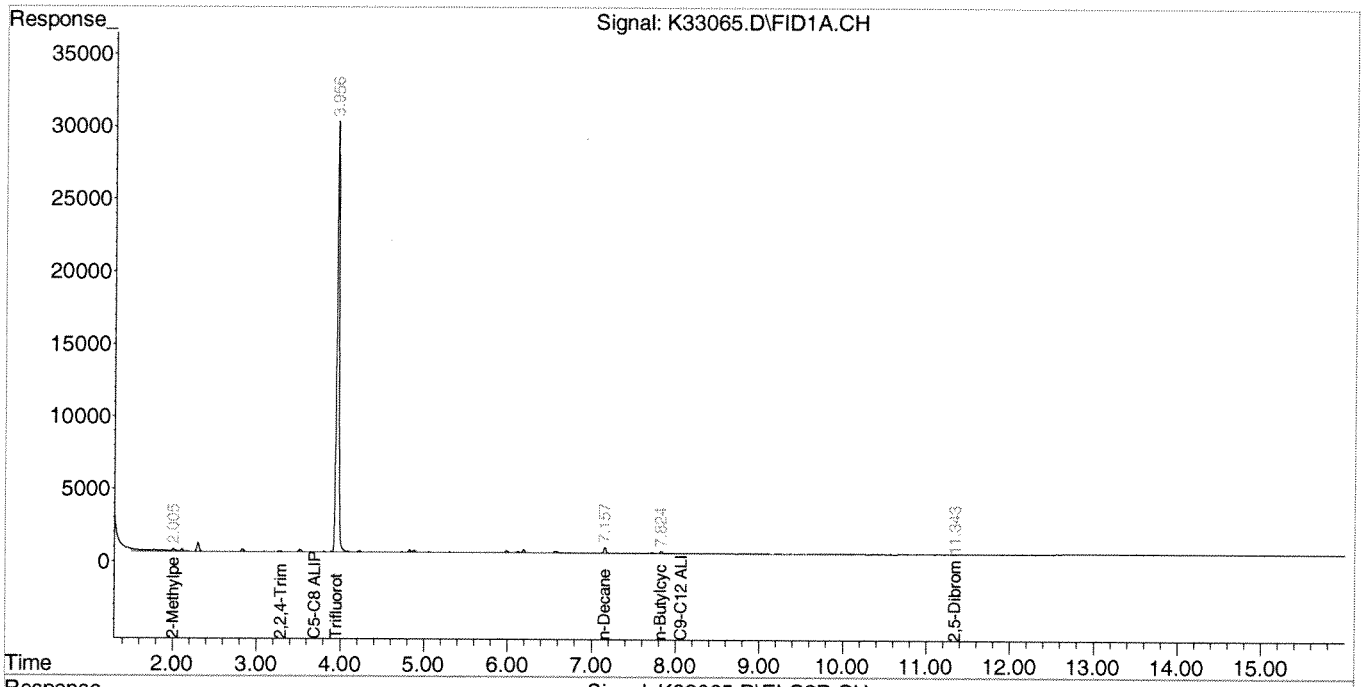
Authorized signature: _____

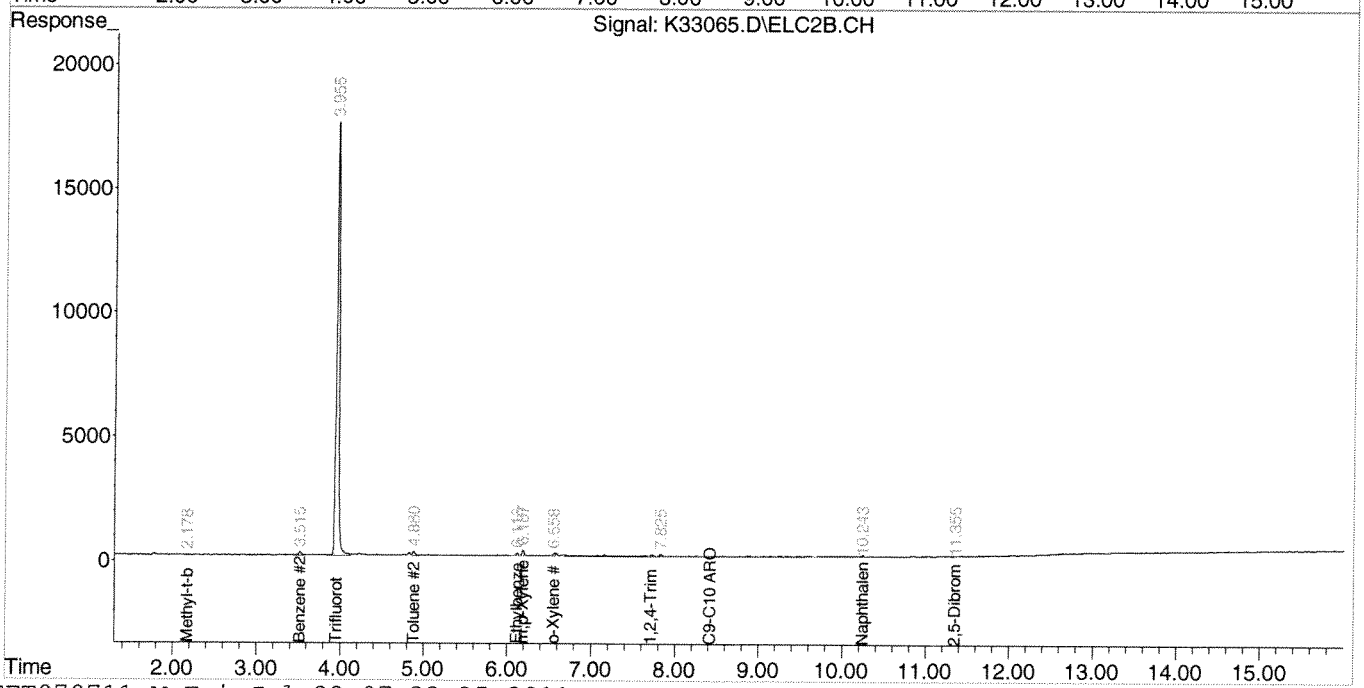
Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\072811-K\
Data File : K33065.D
Signal(s) : Signal #1: FID1A.CH Signal #2: ELC2B.CH
Acq On : 28 Jul 2011 3:05 pm
Operator : KAM
Sample : 70594-4
Misc : 100,10.00,SOIL
ALS Vial : 9 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Jul 28 15:25:49 2011
Quant Method : C:\msdchem\1\METHODS\VPHTFT070711.M
Quant Title : Volatile Petroleum Hydrocarbons (VPH) MA DEP 2004
QLast Update : Fri Jul 08 18:01:21 2011
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Small noise peaks clipped

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :





VPH
QC FORMS

VOLATILE PETROLEUM HYDROCARBONS SOIL
LABORATORY CONTROL/LABORATORY CONTROL DUPLICATE
PERCENT RECOVERY

Instrument ID: K
GC Column: RTX-502.2
Column ID: 0.25 mm

SDG: 70594
Non-spiked sample: MBV072811K2
Spike: LSV072811K2
Spike duplicate: LSV072811K3

COMPOUND	LCS SPIKE ADDED (ug/kg)	LCSD SPIKE ADDED (ug/kg)	LOWER LIMIT	UPPER LIMIT	RPD LIMIT	NON-SPIKE RESULT (ug/kg)	SPIKE RESULT (ug/kg)	SPIKE % REC	#	SPIKE DUP RESULT (ug/kg)	SPIKE DUP % REC	#	RPD	#
Pentane	5000	5000	70	130	25	0	4513	90		4527	91		0	
2-Methylpentane	5000	5000	70	130	25	0	4492	90		4551	91		1	
2,2,4-Trimethylpentane	5000	5000	70	130	25	0	4523	90		4640	93		3	
n-Decane	5000	5000	70	130	25	0	4816	96		4803	96		0	
n-Butylcyclohexane	5000	5000	70	130	25	0	4888	98		5009	100		2	
Methyl-t-butylether #2	5000	5000	70	130	25	0	4484	90		4413	88		2	
Benzene #2	5000	5000	70	130	25	0	4523	90		4565	91		1	
Toluene #2	5000	5000	70	130	25	0	4434	89		4490	90		1	
Ethylbenzene #2	5000	5000	70	130	25	0	4633	93		4692	94		1	
m,p-Xylene #2	10000	10000	70	130	25	0	9351	94		9468	95		1	
o-Xylene #2	5000	5000	70	130	25	0	4435	89		4457	89		0	
1,2,4-Trimethylbenzene #2	5000	5000	70	130	25	0	4831	97		4892	98		1	
Naphthalene #2	5000	5000	70	130	25	0	3714	74		3631	73		2	
C5-C8 Aliphatics	15000	15000	70	130	25	0	13527	90		13718	91		1	
C9-C12 Aliphatics	10000	10000	70	130	25	0	9704	97		9813	98		1	
C9-C10 Aromatics #2	5000	5000	70	130	25	0	4831	97		4892	98		1	

Column to be used to flag recovery and RPD values outside of QC limits
* Values outside QC limits

Non-spike result of "0" used in place of "U" to allow calculation of spike recovery.

Comments: _____

EPH
DATA SUMMARIES

analytics environmental laboratory LLC

195 Commerce Way
Portsmouth, New Hampshire 03801
603-436-5111 Fax 603-430-2151
800-929-9906

Mr. Steve Vetere
Tetra Tech NUS, Inc.
250 Andover Street
Wilmington MA 01887

August 2, 2011

CLIENT SAMPLE ID

Project Name: LMC WILMINGTON

Project Number: 1121C03346
Client Sample ID: LabQC

SAMPLE DATA

Lab Sample ID: B072811EASE
Matrix: Solid
Percent Solid: 100
Dilution Factor: 1.0
Collection Date:
Lab Receipt Date:
Extraction Date: 07/28/11
Analysis Date: 07/29/11

EPH ANALYTICAL RESULTS

RANGE/TARGET ANALYTE		RL	Units	Result
Unadjusted C11-C22 Aromatics[1]		26700	µg/kg	U
Diesel PAH Analytes	Naphthalene	267	µg/kg	U
	2-Methylnaphthalene	267	µg/kg	U
	Phenanthrene	267	µg/kg	U
	Acenaphthene	267	µg/kg	U
Other Target PAH Analytes	Acenaphthylene	267	µg/kg	U
	Fluorene	267	µg/kg	U
	Anthracene	267	µg/kg	U
	Fluoranthene	267	µg/kg	U
	Pyrene	267	µg/kg	U
	Benzo[a]anthracene	267	µg/kg	U
	Chrysene	267	µg/kg	U
	Benzo[b]fluoranthene	267	µg/kg	U
	Benzo[k]fluoranthene	267	µg/kg	U
	Benzo[a]pyrene	267	µg/kg	U
	Indeno[1,2,3-cd]pyrene	267	µg/kg	U
	Dibenzo[a,h]anthracene	267	µg/kg	U
	Benzo[g,h,i]perylene	267	µg/kg	U
C9-C18 Aliphatic Hydrocarbons[1]		26700	µg/kg	U
C19-C36 Aliphatic Hydrocarbons[1]		26700	µg/kg	U
C11-C22 Aromatic Hydrocarbons[1,2]		26700	µg/kg	U
Aliphatic Surrogate % Recovery (1-Chloro-octadecane)				83
Aromatic Surrogate % Recovery (O-Terphenyl)				81
Sample Surrogate Acceptance Range		--	--	40-140%
#1 Fractionation Surrogate % Recovery (2-Fluorobiphenyl)				70
#2 Fractionation Surrogate % Recovery (2-Bromonaphthalene)				57
Fractionation Surrogate Acceptance Range		--	--	40-140%

[1]Hydrocarbon Range data exclude concentrations of any surrogate(s) and/or internal standards eluting in that
[2]C11-C22 Aromatic Hydrocarbons exclude the concentration of Target PAH Analytes.
RL = Report Limit
U=Undetected J=Estimated E=Exceeds Calibration Range B=Detected in Blank

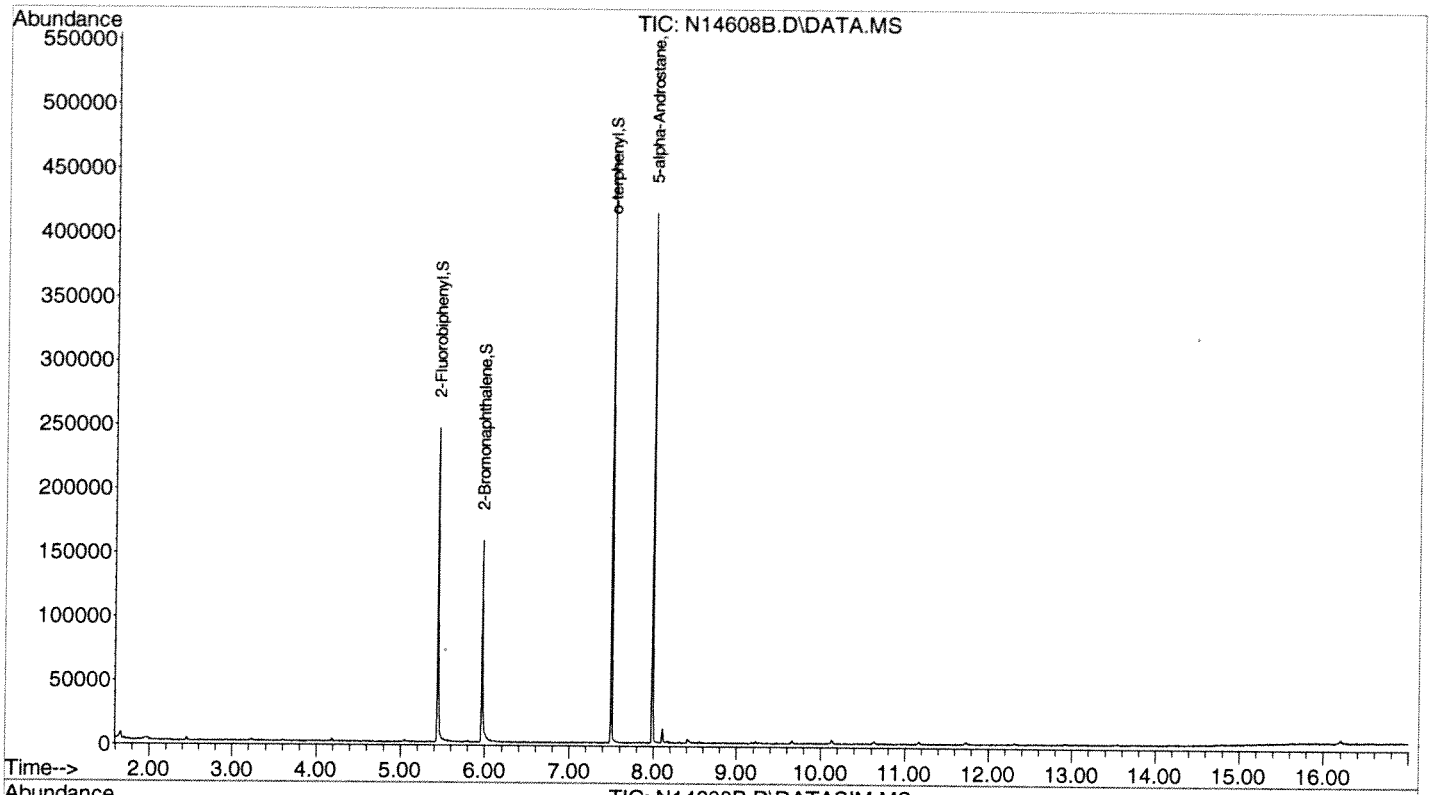
METHODOLOGY: MADEP Extractable Petroleum Hydrocarbons (EPH), ORS Division of Environmental Analysis, May 2004 Revision 1.1. Samples were extracted in accordance with SW-846 Method 3545

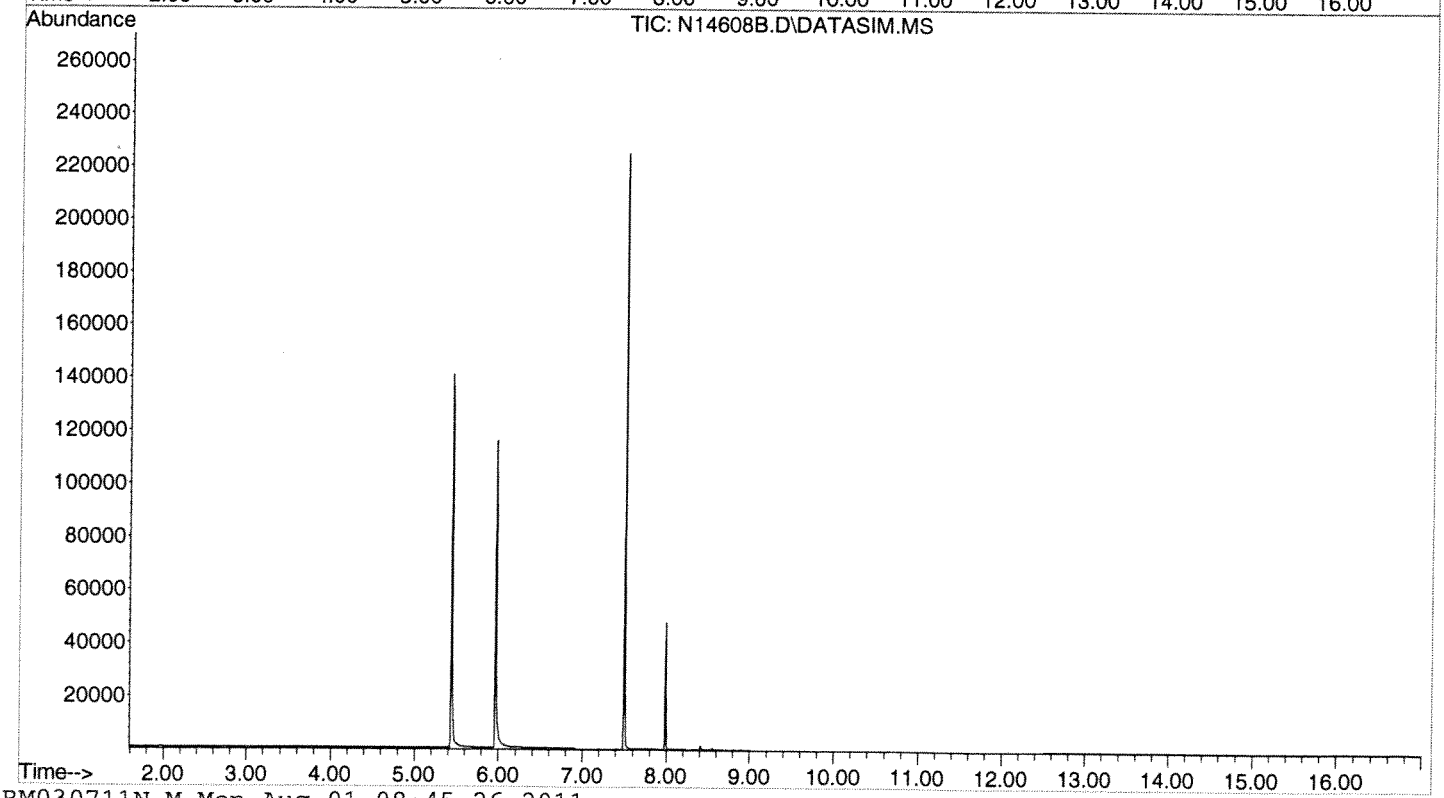
COMMENTS: EPH analyses utilized the use of a GC/MS system to detect and quantify ranges and target analytes. Samples were received in accordance with method criteria unless noted on the sample receipt checklist. Results are expressed on a dry weight basis.

SIGNATURE: 

Data Path : C:\msdchem\1\DATA\072911-N\
Data File : N14608B.D
Acq On : 29 Jul 2011 4:11 pm
Operator : MT
Sample : B072811EASE
Misc : SOIL,,ALI
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Aug 01 08:45:26 2011
Quant Method : C:\msdchem\1\METHODS\ARM030711N.M
Quant Title : EPH MS AROMATICS
QLast Update : Mon Jul 25 09:43:47 2011
Response via : Initial Calibration



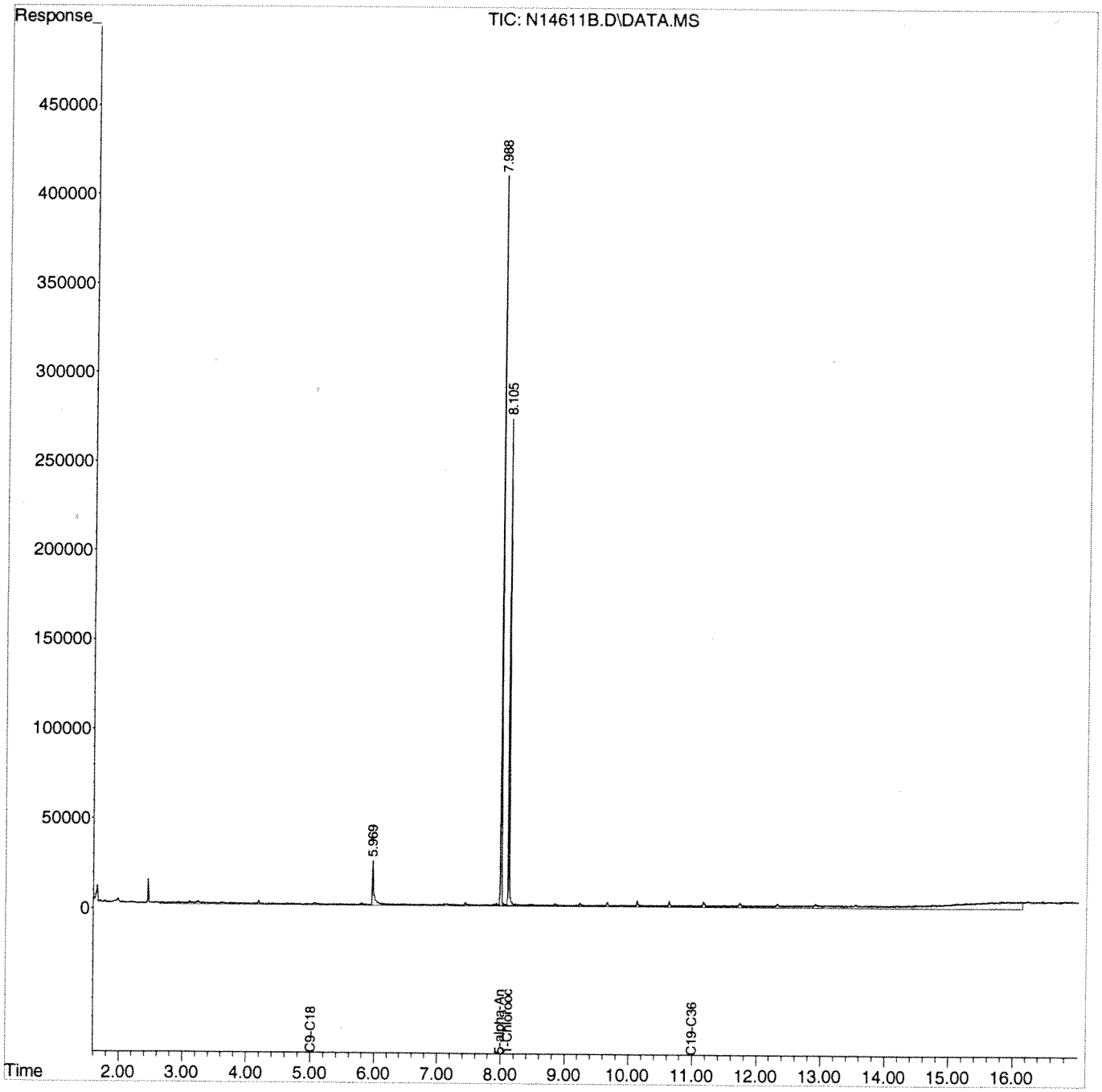


Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\072911-N\
Data File : N14611B.D
Signal(s) : DATA.MS
Acq On : 29 Jul 2011 5:14 pm
Operator : MT
Sample : B072811EASE
Misc : SOIL,,ARO
ALS Vial : 9 Sample Multiplier: 1

Integration File: rteint.p
Quant Time: Aug 01 08:27:37 2011
Quant Method : C:\msdchem\1\METHODS\ALG051711N.M
Quant Title : EPH GC ALIPHATICS
QLast Update : Thu Jun 16 01:18:37 2011
Response via : Initial Calibration
Integrator: RTE

Volume Inj. :
Signal Phase :
Signal Info :



analytics environmental laboratory LLC

195 Commerce Way
Portsmouth, New Hampshire 03801
603-436-5111 Fax 603-430-2151
800-929-9906

August 2, 2011

Mr. Steve Vetere
Tetra Tech NUS, Inc.
250 Andover Street
Wilmington MA 01887

CLIENT SAMPLE ID

Project Name: LMC WILMINGTON

Project Number: 1121C03346
Client Sample ID: LabQC

SAMPLE DATA

Lab Sample ID: B072811EASE RR
Matrix: Solid
Percent Solid: 100
Dilution Factor: 1.0
Collection Date:
Lab Receipt Date:
Extraction Date: 07/28/11
Analysis Date: 08/01/11

EPH ANALYTICAL RESULTS

RANGE/TARGET ANALYTE		RL	Units	Result
Unadjusted C11-C22 Aromatics[1]		26700	µg/kg	U
Diesel PAH Analytes	Naphthalene	267	µg/kg	U
	2-Methylnaphthalene	267	µg/kg	U
	Phenanthrene	267	µg/kg	U
	Acenaphthene	267	µg/kg	U
Other Target PAH Analytes	Acenaphthylene	267	µg/kg	U
	Fluorene	267	µg/kg	U
	Anthracene	267	µg/kg	U
	Fluoranthene	267	µg/kg	U
	Pyrene	267	µg/kg	U
	Benzo[a]anthracene	267	µg/kg	U
	Chrysene	267	µg/kg	U
	Benzo[b]fluoranthene	267	µg/kg	U
	Benzo[k]fluoranthene	267	µg/kg	U
	Benzo[a]pyrene	267	µg/kg	U
	Indeno[1,2,3-cd]pyrene	267	µg/kg	U
	Dibenzo[a,h]anthracene	267	µg/kg	U
	Benzo[g,h,i]perylene	267	µg/kg	U
C9-C18 Aliphatic Hydrocarbons[1]		26700	µg/kg	U
C19-C36 Aliphatic Hydrocarbons[1]		26700	µg/kg	U
C11-C22 Aromatic Hydrocarbons[1,2]		26700	µg/kg	U
Aliphatic Surrogate % Recovery (1-Chloro-octadecane)				83
Aromatic Surrogate % Recovery (O-Terphenyl)				81
Sample Surrogate Acceptance Range		--	--	40-140%
#1 Fractionation Surrogate % Recovery (2-Fluorobiphenyl)				69
#2 Fractionation Surrogate % Recovery (2-Bromonaphthalene)				60
Fractionation Surrogate Acceptance Range		--	--	40-140%

[1]Hydrocarbon Range data exclude concentrations of any surrogate(s) and/or internal standards eluting in that
[2]C11-C22 Aromatic Hydrocarbons exclude the concentration of Target PAH Analytes.
RL = Report Limit
U=Undetected J=Estimated E=Exceeds Calibration Range B=Detected in Blank

METHODOLOGY: MADEP Extractable Petroleum Hydrocarbons (EPH), ORS Division of Environmental Analysis, May 2004 Revision 1.1. Samples were extracted in accordance with SW-846 Method 3545

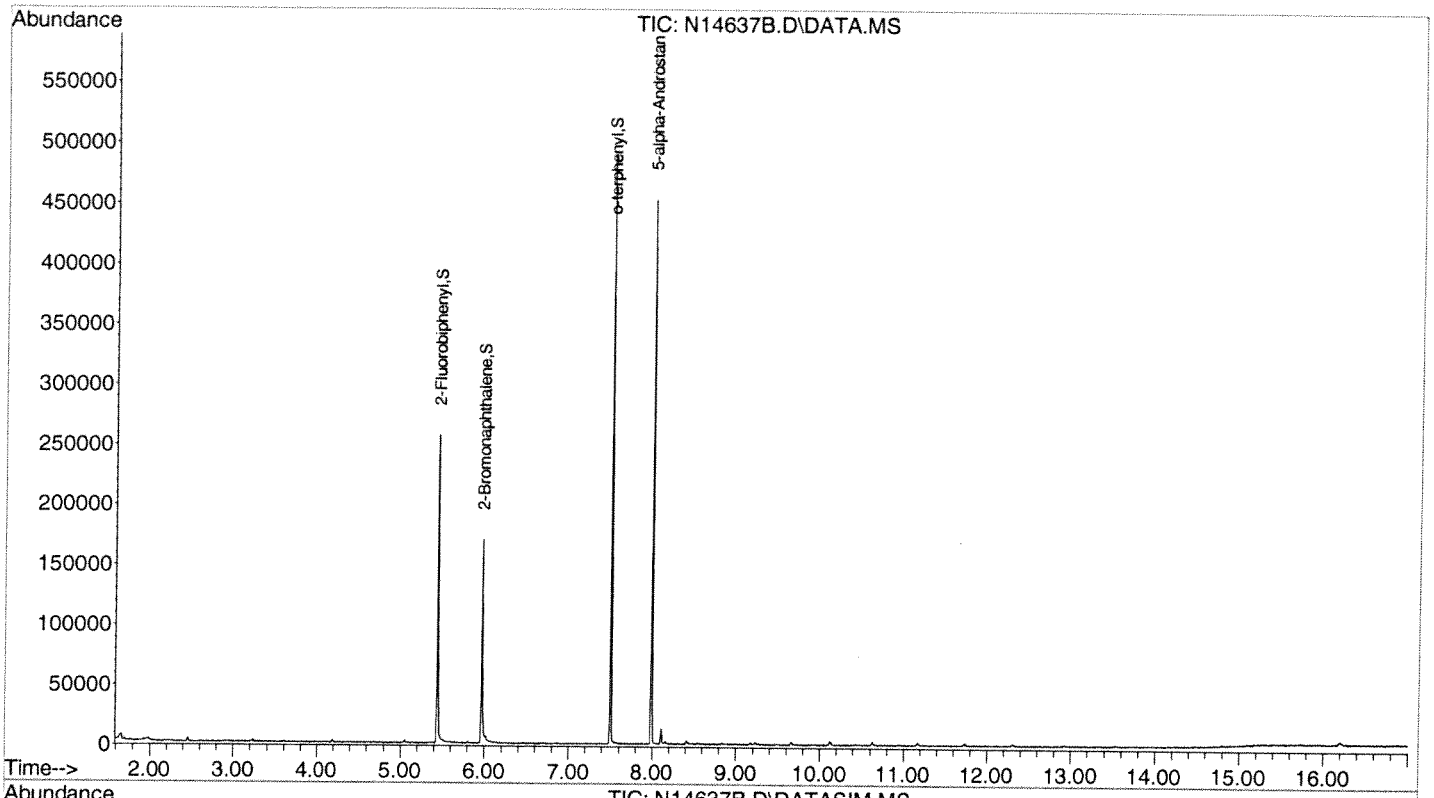
COMMENTS: EPH analyses utilized the use of a GC/MS system to detect and quantify ranges and target analytes. Samples were received in accordance with method criteria unless noted on the sample receipt checklist.
Results are expressed on a dry weight basis.

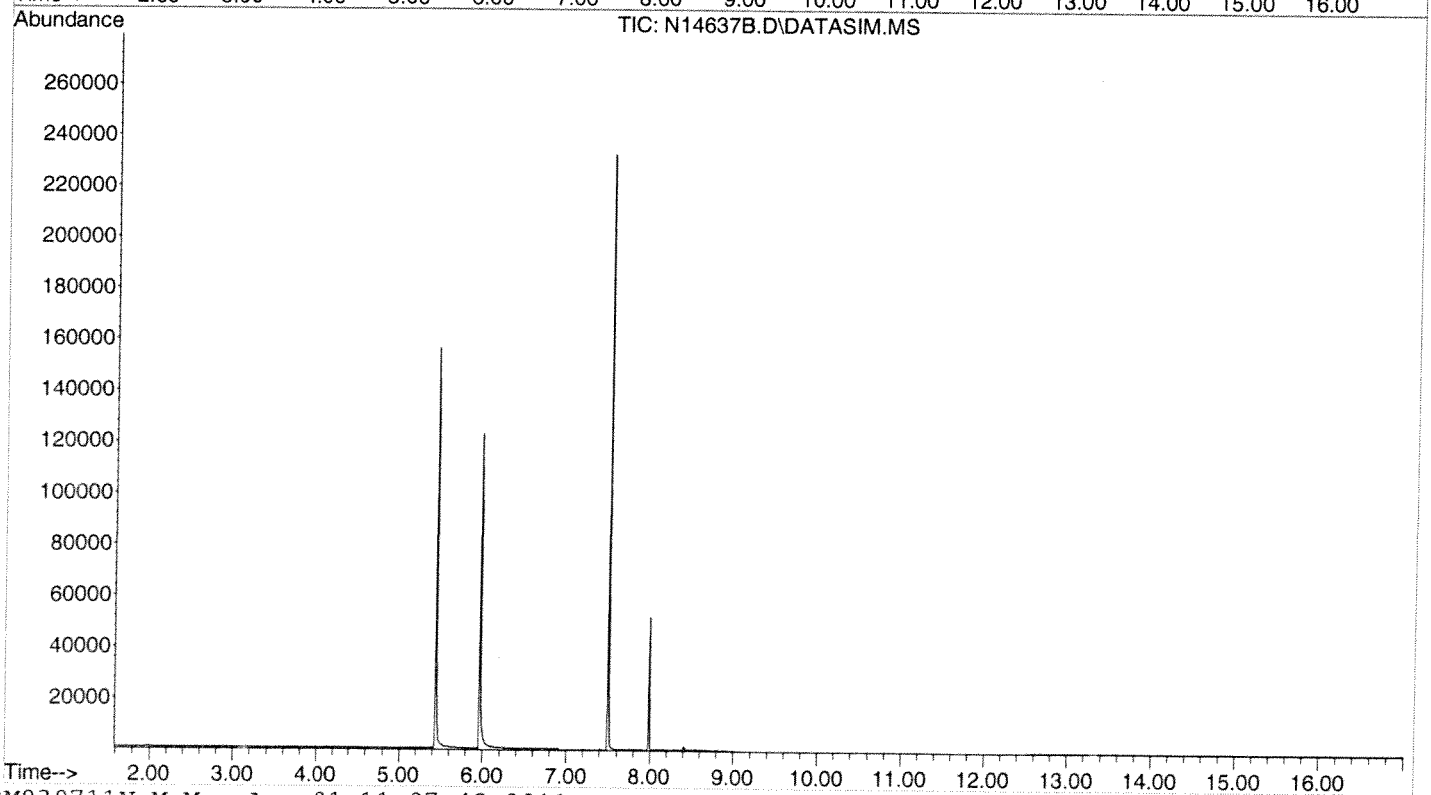
SIGNATURE: 

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\080111-N\
Data File : N14637B.D
Acq On : 1 Aug 2011 9:57 am
Operator : MT
Sample : B072811EASE,,RR
Misc : SOIL,,ARO
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Aug 01 11:07:48 2011
Quant Method : C:\msdchem\1\METHODS\ARM030711N.M
Quant Title : EPH MS AROMATICS
QLast Update : Mon Jul 25 09:43:47 2011
Response via : Initial Calibration

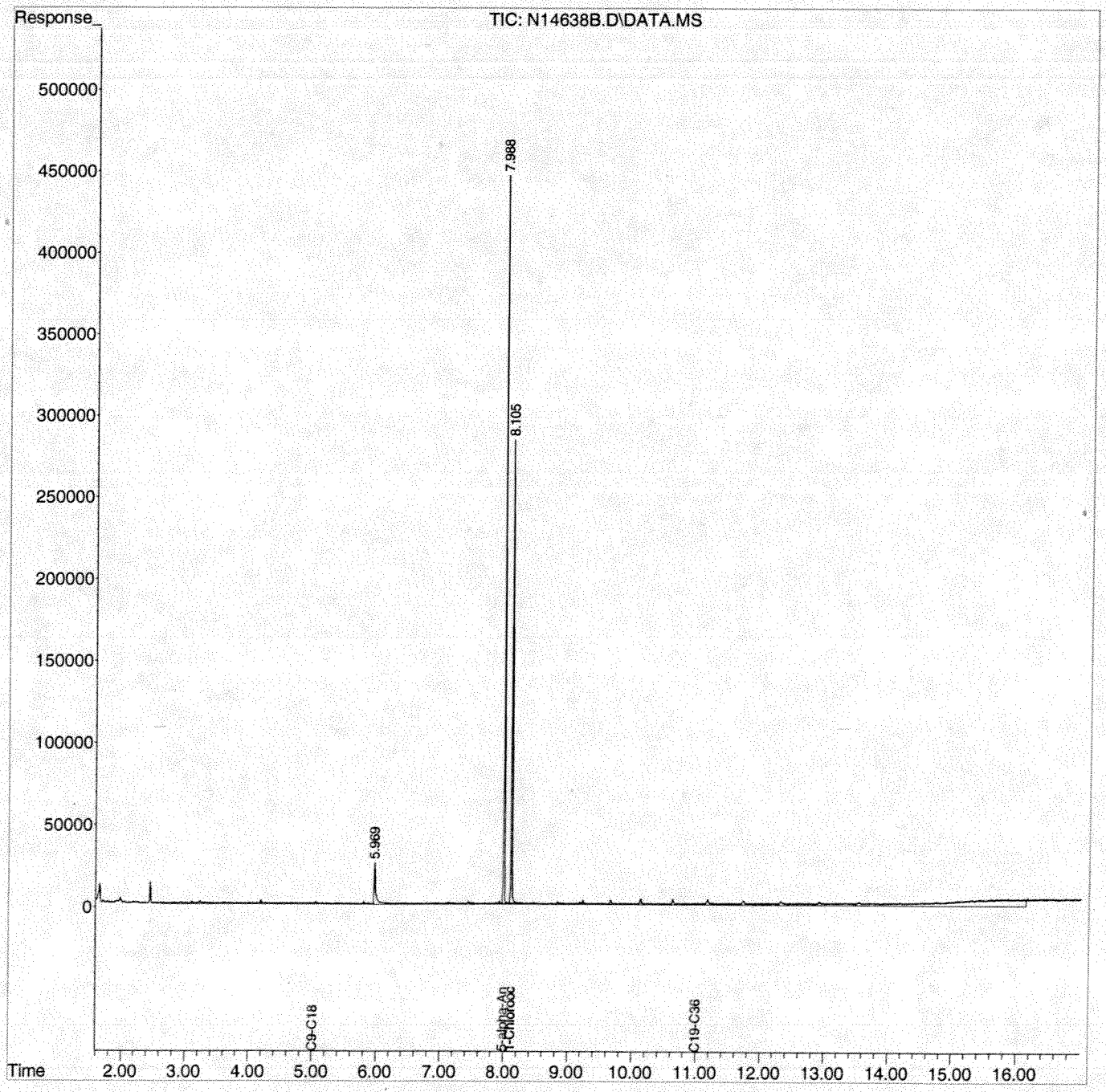




Data Path : C:\msdchem\1\DATA\080111-N\
Data File : N14638B.D
Signal(s) : DATA.MS
Acq On : 1 Aug 2011 10:18 am
Operator : MT
Sample : B072811EASE,,RR
Misc : SOIL,,ALI
ALS Vial : 9 Sample Multiplier: 1

Integration File: rteint.p
Quant Time: Aug 01 11:07:55 2011
Quant Method : C:\msdchem\1\METHODS\ALG051711N.M
Quant Title : EPH GC ALIPHATICS
QLast Update : Thu Jun 16 01:18:37 2011
Response via : Initial Calibration
Integrator: RTE

Volume Inj. :
Signal Phase :
Signal Info :



analytics environmental laboratory LLC

195 Commerce Way
Portsmouth, New Hampshire 03801
603-436-5111 Fax 603-430-2151
800-929-9906

August 2, 2011

Mr. Steve Vetere
Tetra Tech NUS, Inc.
250 Andover Street
Wilmington MA 01887

CLIENT SAMPLE ID

Project Name: LMC WILMINGTON

Project Number: 1121C03346
Client Sample ID: LMC-CONCRETE-NC-1

SAMPLE DATA

Lab Sample ID: 70594-1
Matrix: Solid
Percent Solid: 95
Dilution Factor: 1.0
Collection Date: 07/27/11
Lab Receipt Date: 07/27/11
Extraction Date: 07/28/11
Analysis Date: 08/01/11

EPH ANALYTICAL RESULTS

RANGE/TARGET ANALYTE		RL	Units	Result
Unadjusted C11-C22 Aromatics[1]		27800	µg/kg	**17200 J**
Diesel PAH Analytes	Naphthalene	278	µg/kg	U
	2-Methylnaphthalene	278	µg/kg	U
	Phenanthrene	278	µg/kg	U
	Acenaphthene	278	µg/kg	U
Other Target PAH Analytes	Acenaphthylene	278	µg/kg	U
	Fluorene	278	µg/kg	U
	Anthracene	278	µg/kg	U
	Fluoranthene	278	µg/kg	U
	Pyrene	278	µg/kg	U
	Benzo[a]anthracene	278	µg/kg	U
	Chrysene	278	µg/kg	U
	Benzo[b]fluoranthene	278	µg/kg	U
	Benzo[k]fluoranthene	278	µg/kg	U
	Benzo[a]pyrene	278	µg/kg	U
	Indeno[1,2,3-cd]pyrene	278	µg/kg	U
	Dibenzo[a,h]anthracene	278	µg/kg	U
	Benzo[g,h,i]perylene	278	µg/kg	U
C9-C18 Aliphatic Hydrocarbons[1]		139000	µg/kg	U
C19-C36 Aliphatic Hydrocarbons[1]		139000	µg/kg	**236000**
C11-C22 Aromatic Hydrocarbons[1,2]		27800	µg/kg	**17200 J**
Aliphatic Surrogate % Recovery (1-Chloro-octadecane)				74
Aromatic Surrogate % Recovery (O-Terphenyl)				73
Sample Surrogate Acceptance Range		--	--	40-140%
#1 Fractionation Surrogate % Recovery (2-Fluorobiphenyl)				65
#2 Fractionation Surrogate % Recovery (2-Bromonaphthalene)				56
Fractionation Surrogate Acceptance Range		--	--	40-140%

[1]Hydrocarbon Range data exclude concentrations of any surrogate(s) and/or internal standards eluting in that
[2]C11-C22 Aromatic Hydrocarbons exclude the concentration of Target PAH Analytes.
RL = Report Limit
U=Undetected J=Estimated E=Exceeds Calibration Range B=Detected in Blank

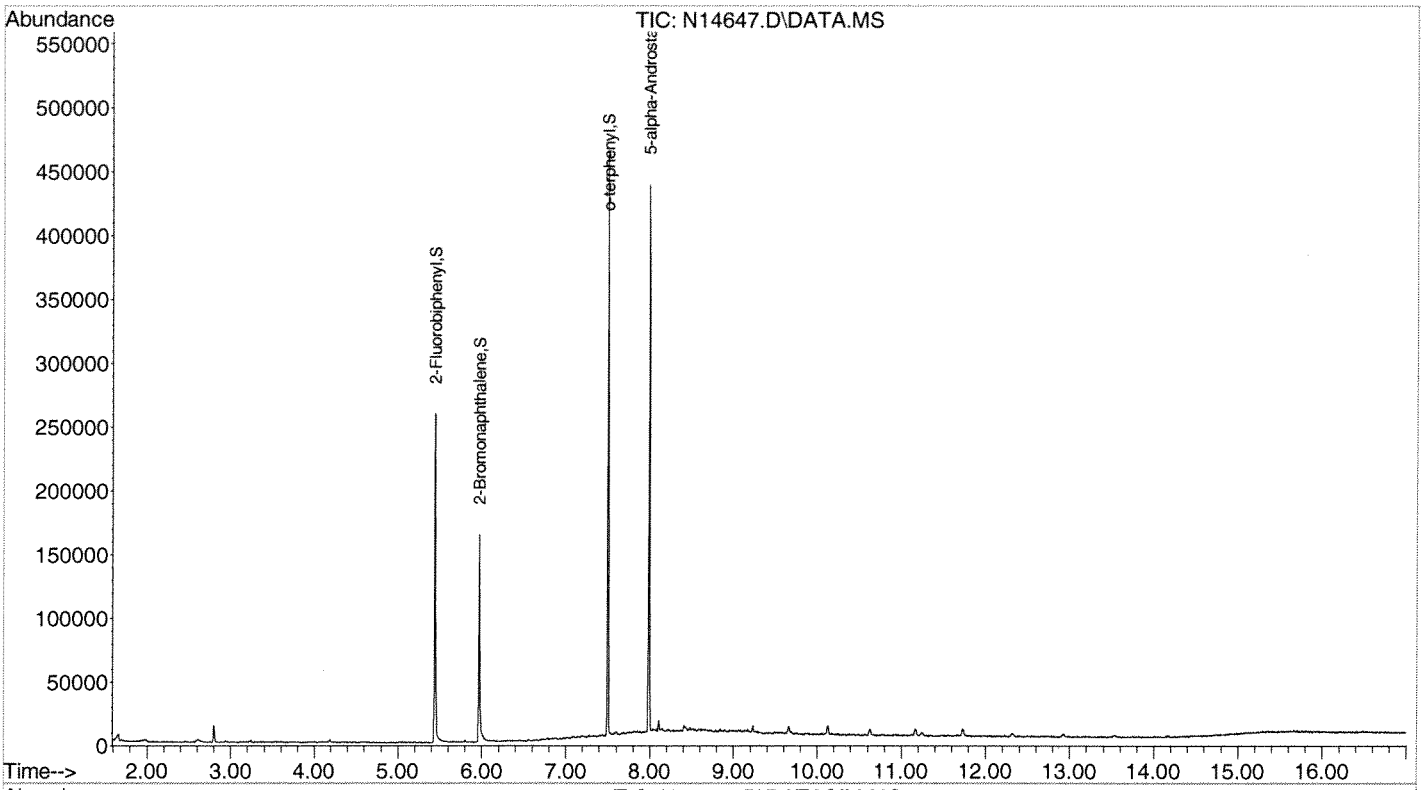
METHODOLOGY: MADEP Extractable Petroleum Hydrocarbons (EPH), ORS Division of Environmental Analysis, May 2004 Revision 1.1. Samples were extracted in accordance with SW-846 Method 3545

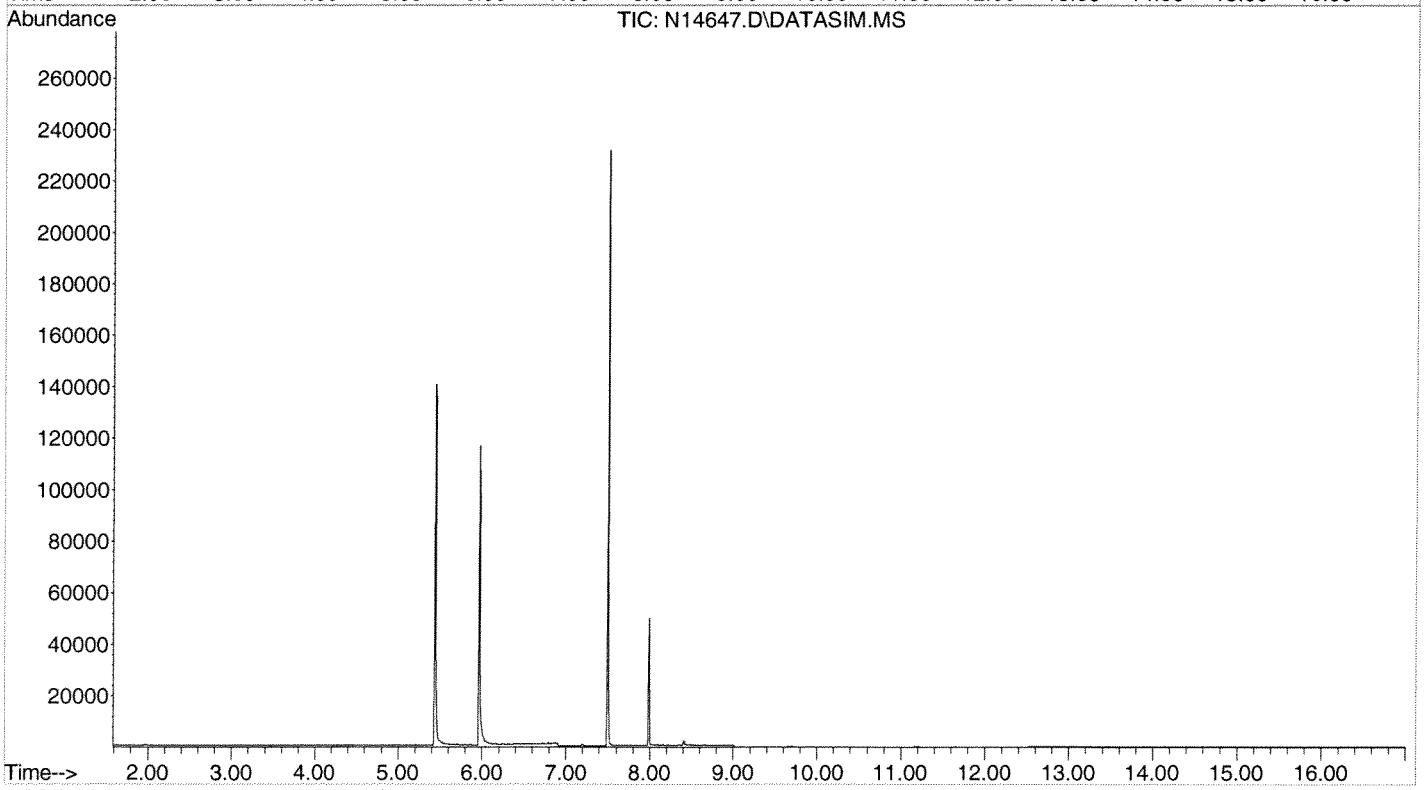
COMMENTS: EPH analyses utilized the use of a GC/MS system to detect and quantify ranges and target analytes. Samples were received in accordance with method criteria unless noted on the sample receipt checklist.
Results are expressed on a dry weight basis.

SIGNATURE: 

Data Path : C:\msdchem\1\DATA\080111-N\
Data File : N14647.D
Acq On : 1 Aug 2011 1:28 pm
Operator : MT
Sample : 70594-1
Misc : SOIL,,ARO
ALS Vial : 20 Sample Multiplier: 1

Quant Time: Aug 02 12:29:49 2011
Quant Method : C:\msdchem\1\METHODS\ARM030711N.M
Quant Title : EPH MS AROMATICS
QLast Update : Mon Jul 25 09:43:47 2011
Response via : Initial Calibration



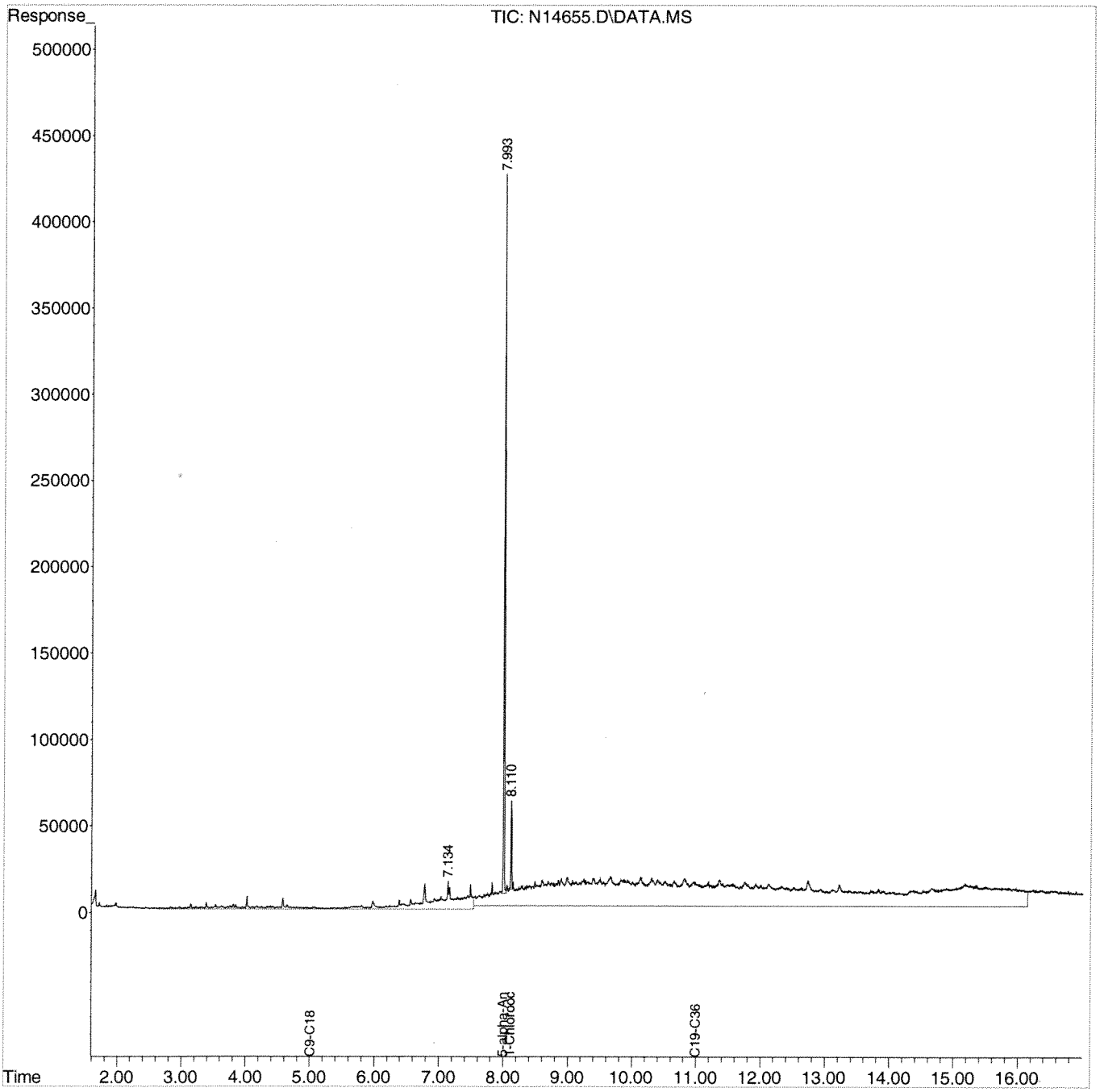


Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\080111-N\
Data File : N14655.D
Signal(s) : DATA.MS
Acq On : 1 Aug 2011 5:08 pm
Operator : MT
Sample : 70594-1,,5X
Misc : SOIL,,ALI
ALS Vial : 28 Sample Multiplier: 1

Integration File: rteint.p
Quant Time: Aug 02 12:20:40 2011
Quant Method : C:\msdchem\1\METHODS\ALG051711N.M
Quant Title : EPH GC ALIPHATICS
QLast Update : Thu Jun 16 01:18:37 2011
Response via : Initial Calibration
Integrator: RTE

Volume Inj. :
Signal Phase :
Signal Info :



analytics environmental laboratory LLC

195 Commerce Way
Portsmouth, New Hampshire 03801
603-436-5111 Fax 603-430-2151
800-929-9906

Mr. Steve Vetere
Tetra Tech NUS, Inc.
250 Andover Street
Wilmington MA 01887

August 2, 2011

CLIENT SAMPLE ID

Project Name: LMC WILMINGTON

Project Number: 1121C03346
Client Sample ID: LMC-CONCRETE-NC-2

SAMPLE DATA

Lab Sample ID: 70594-2
Matrix: Solid
Percent Solid: 97
Dilution Factor: 1.0
Collection Date: 07/27/11
Lab Receipt Date: 07/27/11
Extraction Date: 07/28/11
Analysis Date: 08/01/11

EPH ANALYTICAL RESULTS

RANGE/TARGET ANALYTE		RL	Units	Result
Unadjusted C11-C22 Aromatics[1]		26700	µg/kg	**27900**
Diesel PAH Analytes	Naphthalene	267	µg/kg	**329**
	2-Methylnaphthalene	267	µg/kg	**980**
	Phenanthrene	267	µg/kg	U
	Acenaphthene	267	µg/kg	U
Other Target PAH Analytes	Acenaphthylene	267	µg/kg	U
	Fluorene	267	µg/kg	U
	Anthracene	267	µg/kg	U
	Fluoranthene	267	µg/kg	U
	Pyrene	267	µg/kg	U
	Benzo[a]anthracene	267	µg/kg	U
	Chrysene	267	µg/kg	U
	Benzo[b]fluoranthene	267	µg/kg	U
	Benzo[k]fluoranthene	267	µg/kg	U
	Benzo[a]pyrene	267	µg/kg	U
	Indeno[1,2,3-cd]pyrene	267	µg/kg	U
	Dibenzo[a,h]anthracene	267	µg/kg	U
	Benzo[g,h,i]perylene	267	µg/kg	U
C9-C18 Aliphatic Hydrocarbons[1]		266000	µg/kg	**407000**
C19-C36 Aliphatic Hydrocarbons[1]		266000	µg/kg	U
C11-C22 Aromatic Hydrocarbons[1,2]		26700	µg/kg	**26600**
Aliphatic Surrogate % Recovery (1-Chloro-octadecane)				105
Aromatic Surrogate % Recovery (O-Terphenyl)				77
Sample Surrogate Acceptance Range		--	--	40-140%
#1 Fractionation Surrogate % Recovery (2-Fluorobiphenyl)				65
#2 Fractionation Surrogate % Recovery (2-Bromonaphthalene)				53
Fractionation Surrogate Acceptance Range		--	--	40-140%

[1]Hydrocarbon Range data exclude concentrations of any surrogate(s) and/or internal standards eluting in that
[2]C11-C22 Aromatic Hydrocarbons exclude the concentration of Target PAH Analytes.
RL = Report Limit
U=Undetected J=Estimated E=Exceeds Calibration Range B=Detected in Blank

METHODOLOGY: MADEP Extractable Petroleum Hydrocarbons (EPH), ORS Division of Environmental Analysis, May 2004 Revision 1.1. Samples were extracted in accordance with SW-846 Method 3545

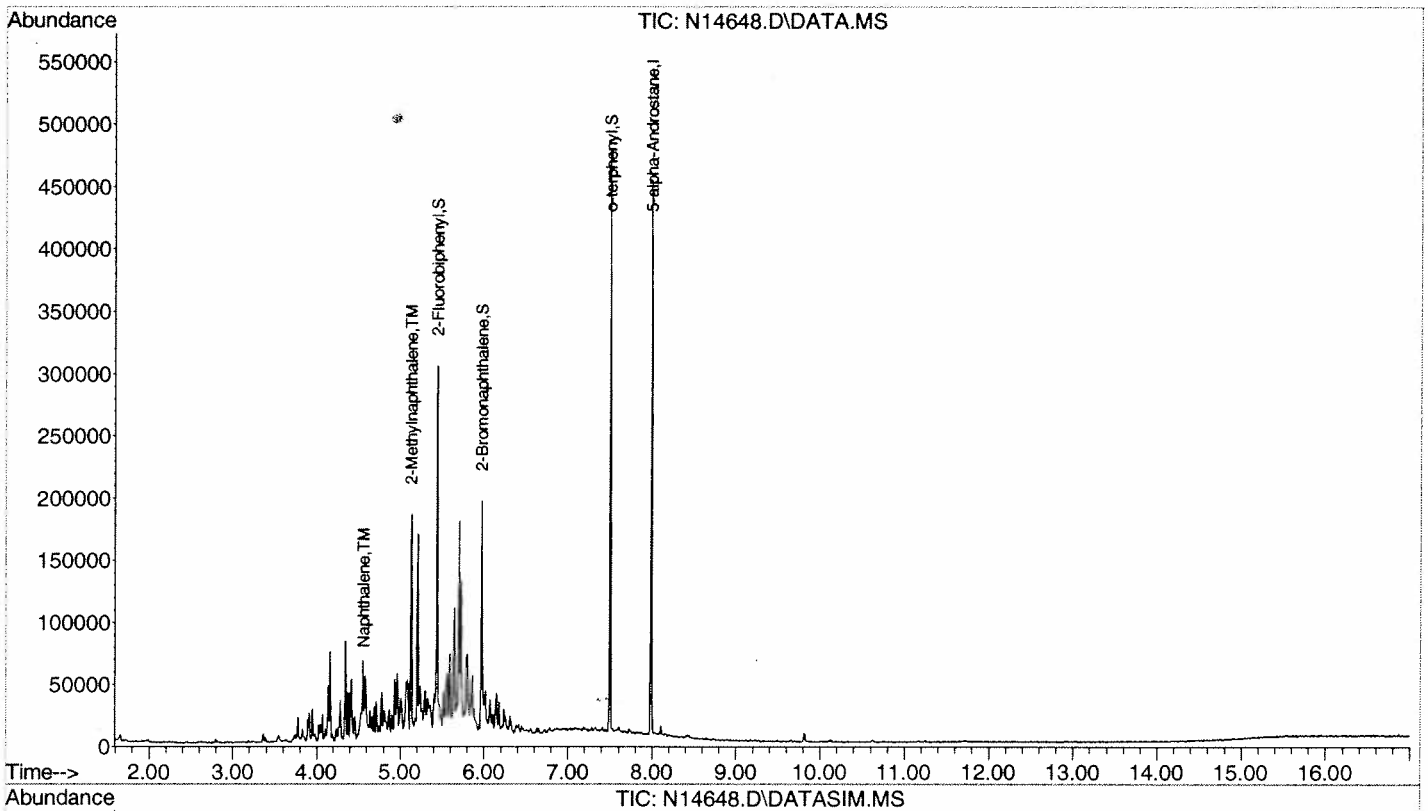
COMMENTS: EPH analyses utilized the use of a GC/MS system to detect and quantify ranges and target analytes. Samples were received in accordance with method criteria unless noted on the sample receipt checklist.
Results are expressed on a dry weight basis.

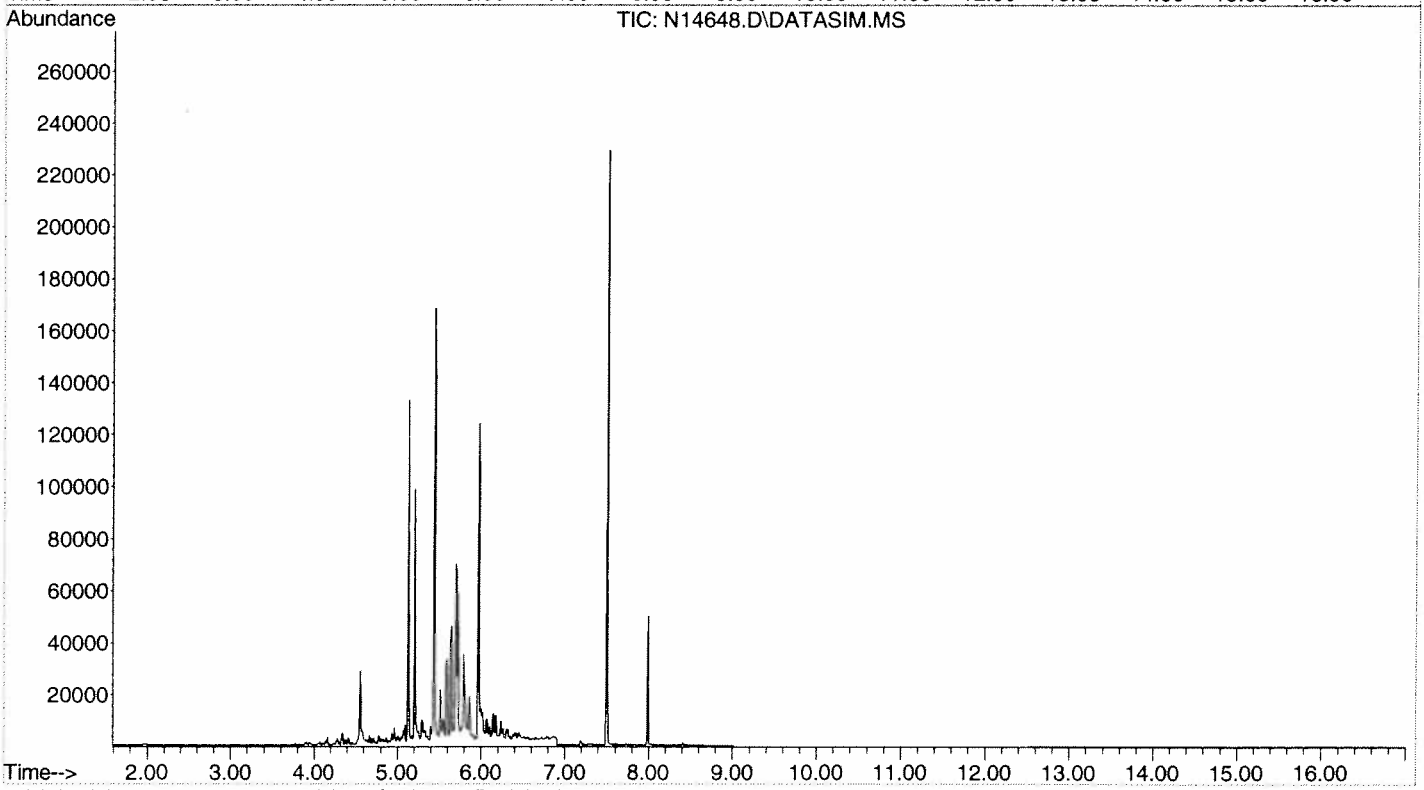
SIGNATURE: 

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\080111-N\
Data File : N14648.D
Acq On : 1 Aug 2011 1:49 pm
Operator : MT
Sample : 70594-2
Misc : SOIL,,ARO
ALS Vial : 21 Sample Multiplier: 1

Quant Time: Aug 02 12:30:04 2011
Quant Method : C:\msdchem\1\METHODS\ARM030711N.M
Quant Title : EPH MS AROMATICS
QLast Update : Mon Jul 25 09:43:47 2011
Response via : Initial Calibration



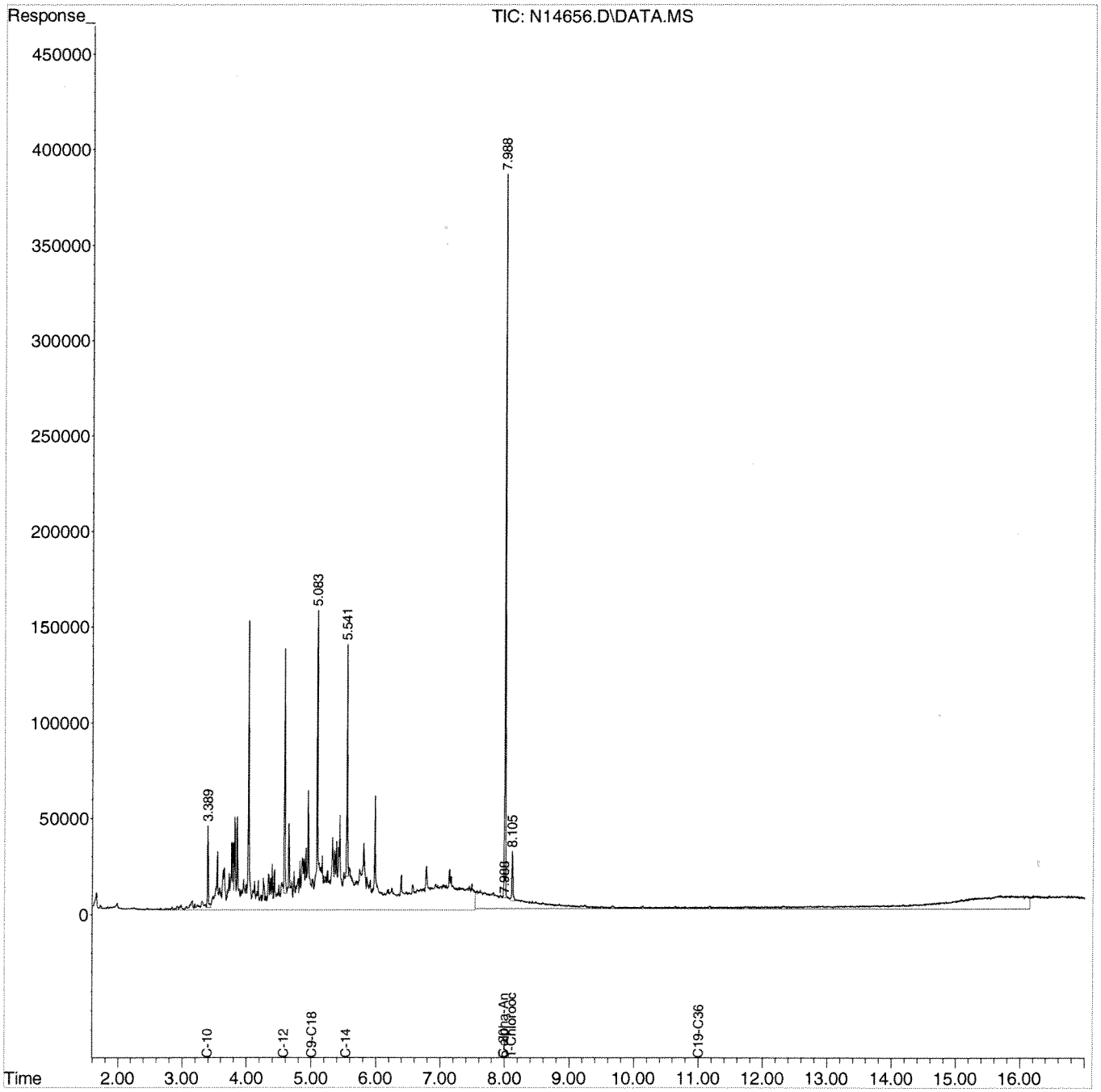


Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\080111-N\
Data File : N14656.D
Signal(s) : DATA.MS
Acq On : 1 Aug 2011 5:29 pm
Operator : MT
Sample : 70594-2,,10X
Misc : SOIL,,ALI
ALS Vial : 29 Sample Multiplier: 1

Integration File: rteint.p
Quant Time: Aug 02 11:17:53 2011
Quant Method : C:\msdchem\1\METHODS\ALG051711N.M
Quant Title : EPH GC ALIPHATICS
QLast Update : Thu Jun 16 01:18:37 2011
Response via : Initial Calibration
Integrator: RTE

Volume Inj. :
Signal Phase :
Signal Info :



analytics environmental laboratory LLC

195 Commerce Way
Portsmouth, New Hampshire 03801
603-436-5111 Fax 603-430-2151
800-929-9906

August 2, 2011

Mr. Steve Vetere
Tetra Tech NUS, Inc.
250 Andover Street
Wilmington MA 01887

CLIENT SAMPLE ID

Project Name: LMC WILMINGTON

Project Number: 1121C03346
Client Sample ID: LMC-SO-TRENCH-1

SAMPLE DATA

Lab Sample ID: 70594-3
Matrix: Solid
Percent Solid: 98
Dilution Factor: 1.0
Collection Date: 07/27/11
Lab Receipt Date: 07/27/11
Extraction Date: 07/28/11
Analysis Date: 08/01/11

EPH ANALYTICAL RESULTS

RANGE/TARGET ANALYTE		RL	Units	Result
Unadjusted C11-C22 Aromatics[1]		27000	µg/kg	U
Diesel PAH Analytes	Naphthalene	270	µg/kg	U
	2-Methylnaphthalene	270	µg/kg	U
	Phenanthrene	270	µg/kg	U
	Acenaphthene	270	µg/kg	U
Other Target PAH Analytes	Acenaphthylene	270	µg/kg	U
	Fluorene	270	µg/kg	U
	Anthracene	270	µg/kg	U
	Fluoranthene	270	µg/kg	U
	Pyrene	270	µg/kg	U
	Benzo[a]anthracene	270	µg/kg	U
	Chrysene	270	µg/kg	U
	Benzo[b]fluoranthene	270	µg/kg	U
	Benzo[k]fluoranthene	270	µg/kg	U
	Benzo[a]pyrene	270	µg/kg	U
	Indeno[1,2,3-cd]pyrene	270	µg/kg	U
	Dibenzo[a,h]anthracene	270	µg/kg	U
	Benzo[g,h,i]perylene	270	µg/kg	U
C9-C18 Aliphatic Hydrocarbons[1]		27000	µg/kg	U
C19-C36 Aliphatic Hydrocarbons[1]		27000	µg/kg	**14300 J**
C11-C22 Aromatic Hydrocarbons[1,2]		27000	µg/kg	U
Aliphatic Surrogate % Recovery (1-Chloro-octadecane)				90
Aromatic Surrogate % Recovery (O-Terphenyl)				86
Sample Surrogate Acceptance Range		--	--	40-140%
#1 Fractionation Surrogate % Recovery (2-Fluorobiphenyl)				69
#2 Fractionation Surrogate % Recovery (2-Bromonaphthalene)				56
Fractionation Surrogate Acceptance Range		--	--	40-140%

[1]Hydrocarbon Range data exclude concentrations of any surrogate(s) and/or internal standards eluting in that
[2]C11-C22 Aromatic Hydrocarbons exclude the concentration of Target PAH Analytes.
RL = Report Limit
U=Undetected J=Estimated E=Exceeds Calibration Range B=Detected in Blank

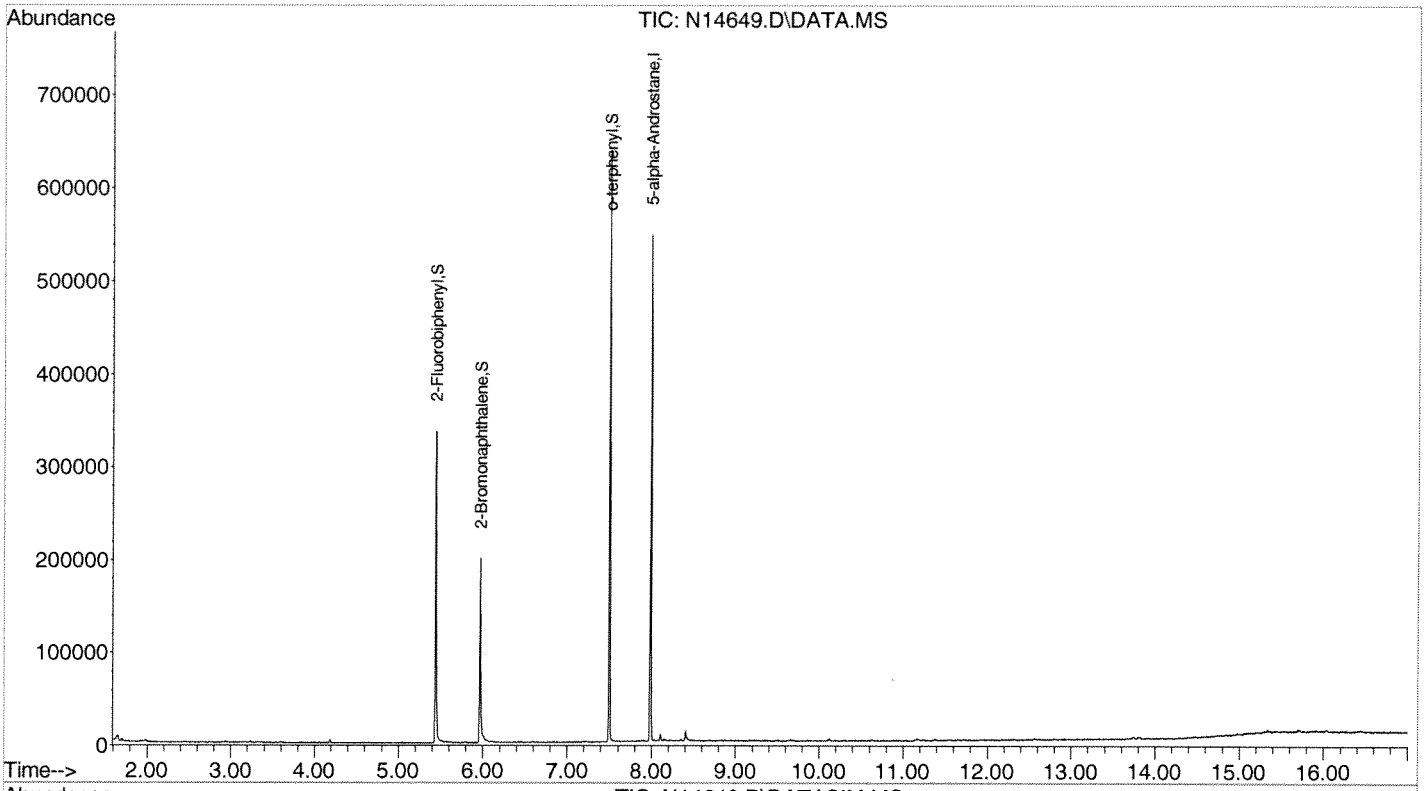
METHODOLOGY: MADEP Extractable Petroleum Hydrocarbons (EPH), ORS Division of Environmental Analysis, May 2004 Revision 1.1. Samples were extracted in accordance with SW-846 Method 3545

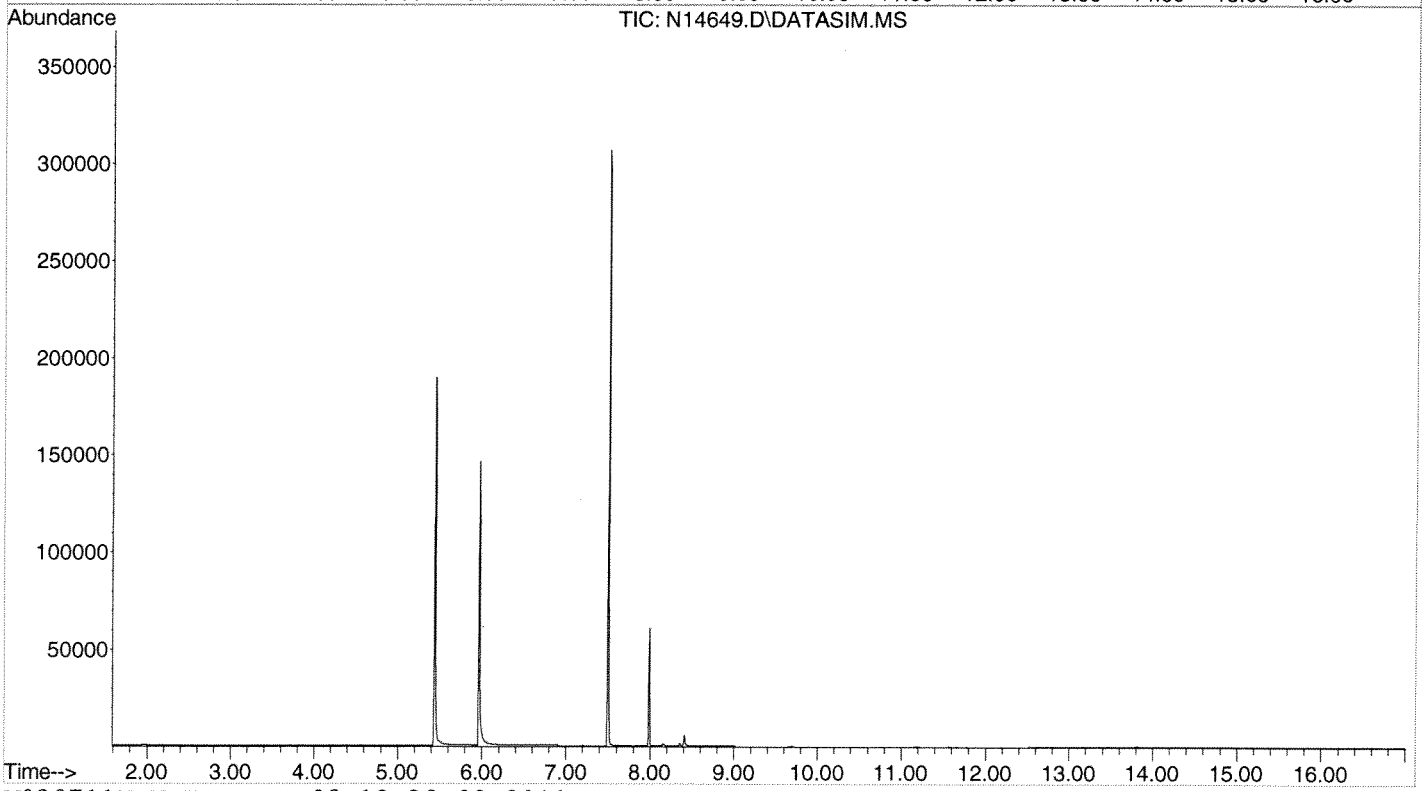
COMMENTS: EPH analyses utilized the use of a GC/MS system to detect and quantify ranges and target analytes. Samples were received in accordance with method criteria unless noted on the sample receipt checklist.
Results are expressed on a dry weight basis.

SIGNATURE: Michael

Data Path : C:\msdchem\1\DATA\080111-N\
Data File : N14649.D
Acq On : 1 Aug 2011 2:10 pm
Operator : MT
Sample : 70594-3
Misc : SOIL,,ARO
ALS Vial : 22 Sample Multiplier: 1

Quant Time: Aug 02 12:30:09 2011
Quant Method : C:\msdchem\1\METHODS\ARM030711N.M
Quant Title : EPH MS AROMATICS
QLast Update : Mon Jul 25 09:43:47 2011
Response via : Initial Calibration

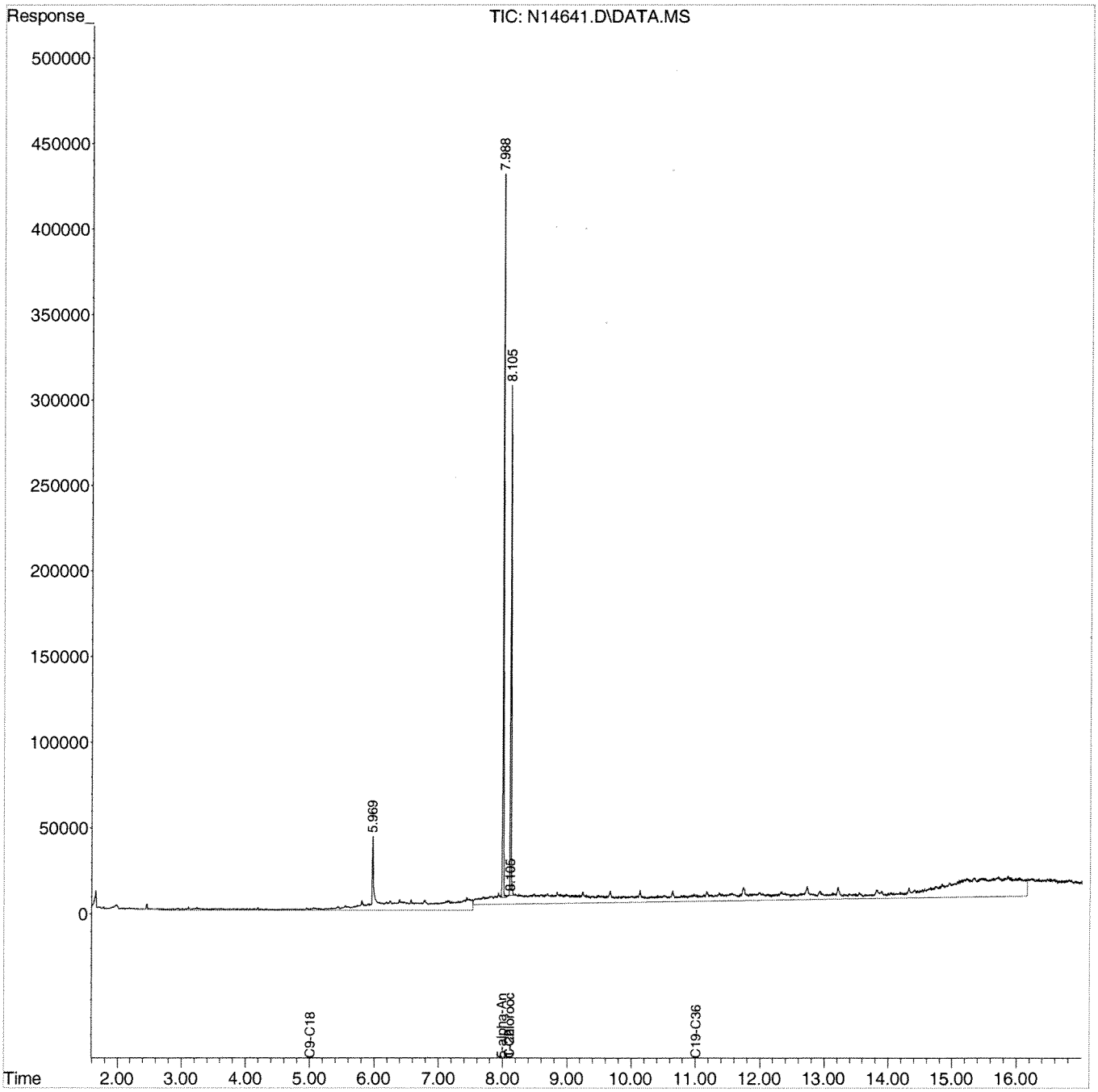




Data Path : C:\msdchem\1\DATA\080111-N\
Data File : N14641.D
Signal(s) : DATA.MS
Acq On : 1 Aug 2011 11:22 am
Operator : MT
Sample : 70594-3
Misc : SOIL,,ALI
ALS Vial : 14 Sample Multiplier: 1

Integration File: rteint.p
Quant Time: Aug 01 11:39:58 2011
Quant Method : C:\msdchem\1\METHODS\ALG051711N.M
Quant Title : EPH GC ALIPHATICS
QLast Update : Thu Jun 16 01:18:37 2011
Response via : Initial Calibration
Integrator: RTE

Volume Inj. :
Signal Phase :
Signal Info :



EPH
QC FORMS

EPH ALIPHATICS
SOIL MATRIX SPIKE
MATRIX SPIKE DUPLICATE
PERCENT RECOVERY

Instrument ID: N
GC Column: ZB-5ms
Column ID: 0.25 mm

SDG: 70594
Non-spiked sample: B072811EASE
Spike: L072811EASE
Spike duplicate: LD072811EASE

COMPOUND	LCS SPIKE ADDED (ug/kg)	LCD SPIKE ADDED (ug/kg)	LOWER LIMIT	UPPER LIMIT	RPD LIMIT	NON-SPIKE RESULT (ug/kg)	SPIKE RESULT (ug/kg)	SPIKE % REC	#	SPIKE DUP RESULT (ug/kg)	SPIKE DUP % REC	#	RPD	#
C-9	3333	3333	30	140	25	0	2245	67		2308	69		3	
C-10	3333	3333	40	140	25	0	2452	74		2652	80		8	
C-12	3333	3333	40	140	25	0	2671	80		2767	83		4	
C-14	3333	3333	40	140	25	0	2877	86		3008	90		4	
C-16	3333	3333	40	140	25	0	3011	90		3187	96		6	
C-18	3333	3333	40	140	25	0	3193	96		3303	99		3	
C-19	3333	3333	40	140	25	0	2987	90		3096	93		4	
C-20	3333	3333	40	140	25	0	3272	98		3347	100		2	
C-22	3333	3333	40	140	25	0	3264	98		3384	102		4	
C-24	3333	3333	40	140	25	0	3252	98		3388	102		4	
C-26	3333	3333	40	140	25	0	3256	98		3364	101		3	
C-28	3333	3333	40	140	25	0	3191	96		3331	100		4	
C-30	3333	3333	40	140	25	0	3184	96		3275	98		3	
C-36	3333	3333	40	140	25	0	2991	90		3180	95		6	
C9-C18 Aliphatics	20000	20000	40	140	25	0	16449	82		17224	86		5	
C19-C36 Aliphatics	26667	26667	40	140	25	0	25396	95		26364	99		4	

Column to be used to flag recovery and RPD values outside of QC limits
* Values outside QC limits

Non-spike result of "0" used in place of "U" to allow calculation of spike recovery.

Comments: _____

EPH AROMATICS
SOIL LABORATORY CONTROL SAMPLE
LABORATORY CONTROL SAMPLE DUPLICATE
PERCENT RECOVERY

Instrument ID: N
GC Column: ZB-5ms
Column ID: 0.25 mm

SDG: 70594
Non-spiked sample: B072811EASE
Spike: L072811EASE
Spike duplicate: LD072811EASE

COMPOUND	LCS SPIKE ADDED (ug/kg)	LCSD SPIKE ADDED (ug/kg)	LOWER LIMIT	UPPER LIMIT	RPD LIMIT	NON-SPIKE RESULT (ug/kg)	SPIKE RESULT (ug/kg)	SPIKE % REC	#	SPIKE DUP RESULT (ug/kg)	SPIKE DUP % REC	#	RPD	#
Naphthalene	3333	3333	40	140	30	0	2049	61		1939	58		5	
2-Methylnaphthalene	3333	3333	40	140	30	0	2150	65		2072	62		4	
Acenaphthylene	3333	3333	40	140	30	0	2375	71		2278	68		4	
Acenaphthene	3333	3333	40	140	30	0	2400	72		2367	71		1	
Fluorene	3333	3333	40	140	30	0	2544	76		2527	76		1	
Phenanthrene	3333	3333	40	140	30	0	2775	83		2798	84		1	
Anthracene	3333	3333	40	140	30	0	2945	88		2952	89		0	
Fluoranthene	3333	3333	40	140	30	0	3048	91		3052	92		0	
Pyrene	3333	3333	40	140	30	0	3033	91		3094	93		2	
Benzo[a]anthracene	3333	3333	40	140	30	0	2997	90		3044	91		2	
Chrysene	3333	3333	40	140	30	0	3192	96		3206	96		0	
Benzo[b] fluoranthene	3333	3333	40	140	30	0	3056	92		3085	93		1	
Benzo[k] fluoranthene	3333	3333	40	140	30	0	3161	95		3133	94		1	
Benzo[a] pyrene	3333	3333	40	140	30	0	3020	91		3062	92		1	
Indeno [1,2,3-cd] pyrene	3333	3333	40	140	30	0	3048	91		3014	90		1	
Dibenz [a,h] anthracene	3333	3333	40	140	30	0	3008	90		3040	91		1	
Benzo(g,h,i) perylene	3333	3333	40	140	30	0	3113	93		3155	95		1	

Column to be used to flag recovery and RPD values outside of QC limits
* Values outside QC limits

Non-spike result of "0" used in place of "U" to allow calculation of spike recovery.

Comments: _____

EPH AROMATIC BREAKTHOUGH REPORT
OF ALIPHATIC LABORATORY CONTROL SAMPLE

Instrument ID: N
GC Column: ZB-5ms
Column ID: 0.25 mm

SDG: 70594
Aliphatic LCS: L072811EASE
Aromatic LCS: L072811EASE

COMPOUND	LOWER LIMIT	UPPER LIMIT	ALIPHATIC RESULT (ug/mL)	AROMATIC RESULT (ug/mL)	% BREAKTHROUGH	#
Naphthalene	0	5	0.00	15.4	0.0	
2-Methylnaphthalene	0	5	0.00	16.1	0.0	

Column to be used to flag breakthrough values outside of QC limits
* Values outside QC limits

Non-spike result of "0" used in place of "U" to allow calculation of spike recovery

Comments: _____

EPH AROMATIC BREAKTHOUGH REPORT
OF ALIPHATIC LABORATORY CONTROL SAMPLE

Instrument ID: N
GC Column: ZB-5ms
Column ID: 0.25 mm

SDG: 70594
Aliphatic LCS: LD072811EASE
Aromatic LCS: LD072811EASE

COMPOUND	LOWER LIMIT	UPPER LIMIT	ALIPHATIC RESULT (ug/mL)	AROMATIC RESULT (ug/mL)	% BREAKTHROUGH	#
Naphthalene	0	5	0.00	14.5	0.0	
2-Methylnaphthalene	0	5	0.00	15.5	0.0	

Column to be used to flag breakthrough values outside of QC limits
* Values outside QC limits

Non-spike result of "0" used in place of "U" to allow calculation of spike recovery

Comments: _____

PCB
DATA SUMMARIES

analytics environmental laboratory LLC

195 Commerce Way
Portsmouth, New Hampshire 03801
603-436-5111 Fax 603-430-2151
800-929-9906

Mr. Steve Vetere
Tetra Tech NUS, Inc.
250 Andover Street
Wilmington MA 01887

August 3, 2011

CLIENT SAMPLE ID

Project Name: LMC WILMINGTON

Project Number: 1121C03346

Field Sample ID: Lab QC

SAMPLE DATA

Lab Sample ID: B080111PSOX
Matrix: Soil
Percent Solid: 100
Dilution Factor: 1.0
Collection Date:
Lab Receipt Date:
Extraction Date: 08/01/11
Analysis Date: 08/03/11

PCB ANALYTICAL RESULTS

COMPOUND	Quantitation Limit µg/kg	Results µg/kg
PCB-1016	33	U
PCB-1221	33	U
PCB-1232	33	U
PCB-1242	33	U
PCB-1248	33	U
PCB-1254	33	U
PCB-1260	33	U
PCB-1262	33	U
PCB-1268	33	U

Surrogate Standard Recovery

2,4,5,6-Tetrachloro-m-xylene	103	%
Decachlorobiphenyl	98	%

U=Undetected J=Estimated E=Exceeds Calibration Range B=Detected in Blank

METHODOLOGY: Sample analysis conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 8082.

COMMENTS: Sample preparation conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 3540C. Results are expressed on a dry weight basis.

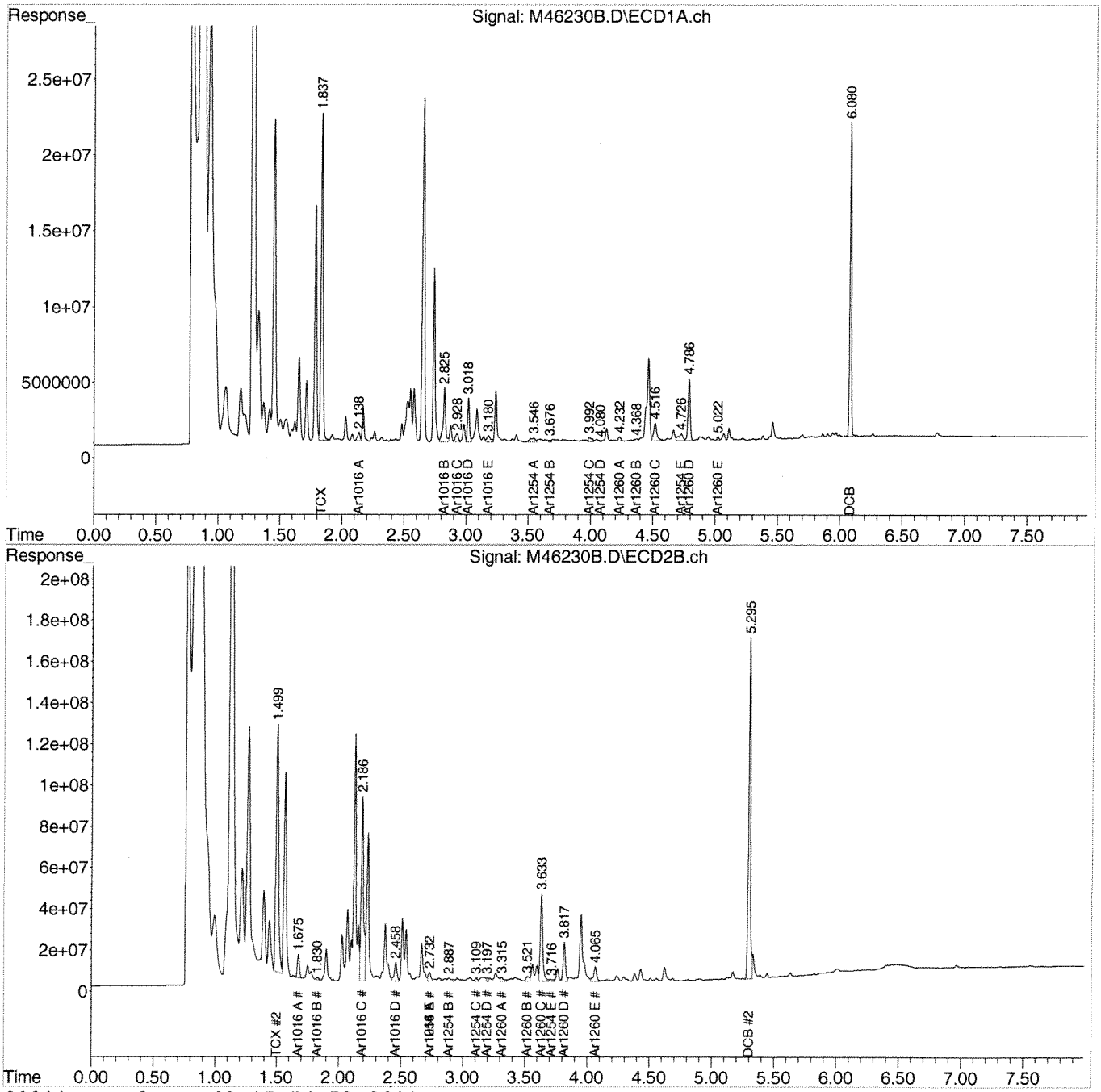
PCB EXT Report

Authorized signature

Data Path : C:\msdchem\1\DATA\080311-M\
Data File : M46230B.D
Signal(s) : Signal #1: ECD1A.ch Signal #2: ECD2B.ch
Acq On : 3 Aug 2011 11:18 am
Operator : JL
Sample : B080111PSOX,,A/C
Misc :
ALS Vial : 6 Sample Multiplier: 1

Integration File signal 1: events.e
Integration File signal 2: events2.e
Quant Time: Aug 03 15:54:37 2011
Quant Method : C:\msdchem\1\METHODS\PCB080211.M
Quant Title : SW-846 METHOD 8082 Aroclor 1016/1260/1254
QLast Update : Wed Aug 03 11:00:55 2011
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 2 uL
Signal #1 Phase : STX-CLPPesticides Signal #2 Phase: STX-CLPPesticides
Signal #1 Info : 30 m x 0.25mm x 0 Signal #2 Info : 30 m x 0.25mm x 0.25 um



analytics environmental laboratory LLC

195 Commerce Way
Portsmouth, New Hampshire 03801
603-436-5111 Fax 603-430-2151
800-929-9906

Mr. Steve Vetere
Tetra Tech NUS, Inc.
250 Andover Street
Wilmington MA 01887

August 3, 2011

CLIENT SAMPLE ID

Project Name: LMC WILMINGTON

Project Number: 1121C03346

Field Sample ID: LMC-CONCRETE-NC-1

SAMPLE DATA

Lab Sample ID: 70594-1
Matrix: Solid
Percent Solid: 95
Dilution Factor: 1.0
Collection Date: 07/27/11
Lab Receipt Date: 07/27/11
Extraction Date: 08/01/11
Analysis Date: 08/03/11

PCB ANALYTICAL RESULTS

COMPOUND	Quantitation Limit µg/kg	Results µg/kg
PCB-1016	33	U
PCB-1221	33	U
PCB-1232	33	U
PCB-1242	33	U
PCB-1248	33	U
PCB-1254	33	U
PCB-1260	33	U
PCB-1262	33	U
PCB-1268	33	U

Surrogate Standard Recovery

2,4,5,6-Tetrachloro-m-xylene	84	%
Decachlorobiphenyl	101	%

U=Undetected J=Estimated E=Exceeds Calibration Range B=Detected in Blank

METHODOLOGY: Sample analysis conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 8082.

COMMENTS: Sample preparation conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 3540C. Results are expressed on a dry weight basis.

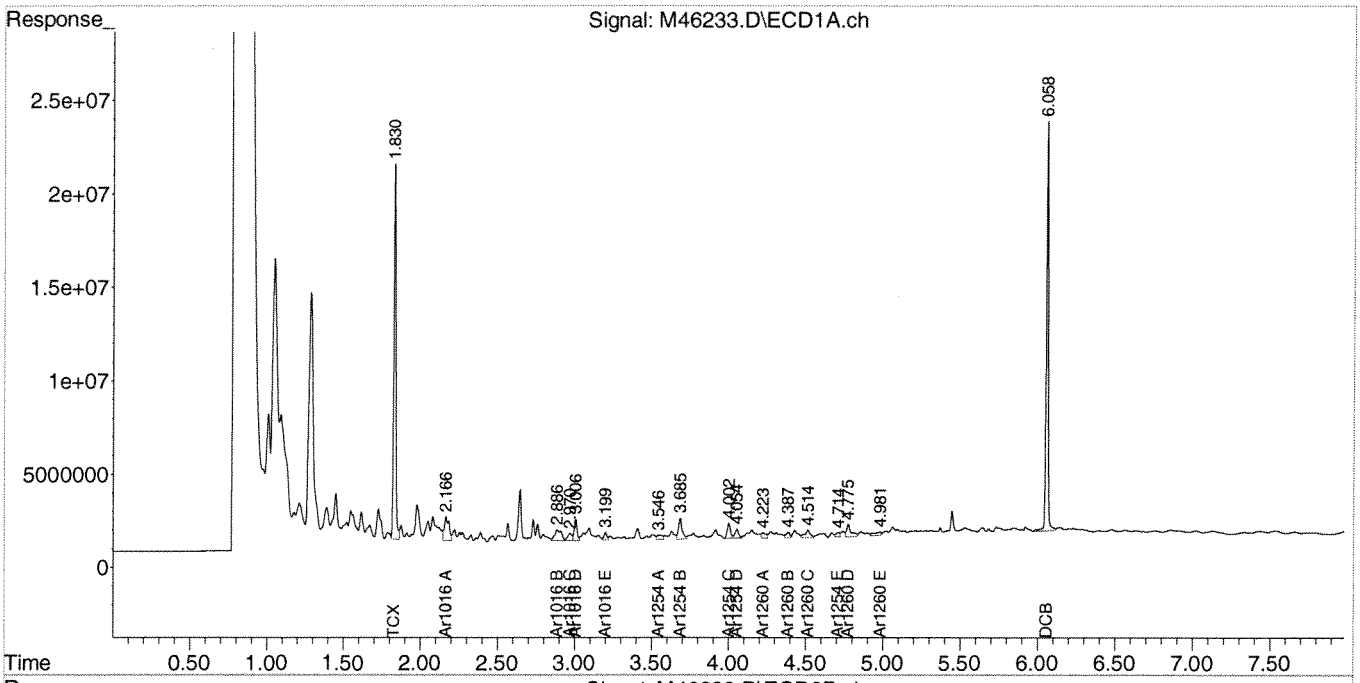
PCB EXT Report

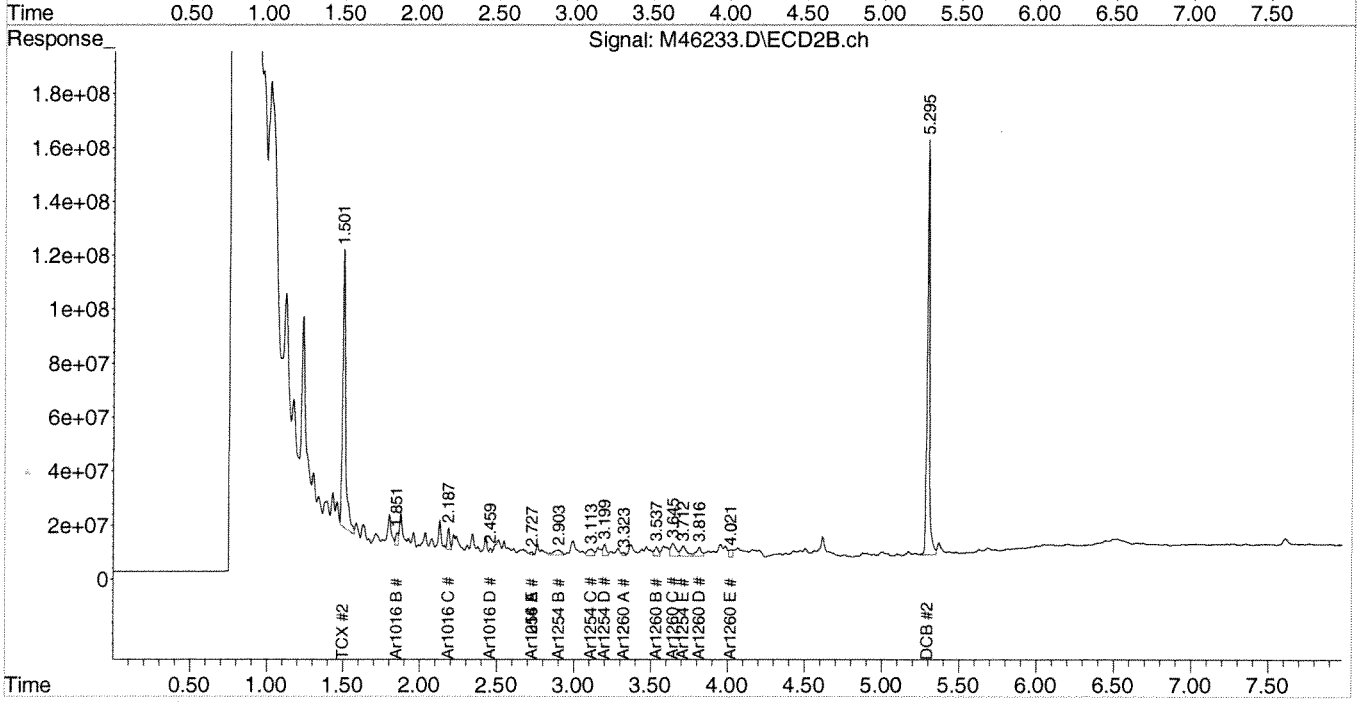
Authorized signature

Data Path : C:\msdchem\1\DATA\080311-M\
Data File : M46233.D
Signal(s) : Signal #1: ECD1A.ch Signal #2: ECD2B.ch
Acq On : 3 Aug 2011 11:49 am
Operator : JL
Sample : 70594-1
Misc :
ALS Vial : 9 Sample Multiplier: 1

Integration File signal 1: events.e
Integration File signal 2: events2.e
Quant Time: Aug 03 15:54:01 2011
Quant Method : C:\msdchem\1\METHODS\PCB080211.M
Quant Title : SW-846 METHOD 8082 Aroclor 1016/1260/1254
QLast Update : Wed Aug 03 11:00:55 2011
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 2 uL
Signal #1 Phase : STX-CLPPesticides Signal #2 Phase: STX-CLPPesticides
Signal #1 Info : 30 m x 0.25mm x 0 Signal #2 Info : 30 m x 0.25mm x 0.25 um





analytics environmental laboratory LLC

195 Commerce Way
Portsmouth, New Hampshire 03801
603-436-5111 Fax 603-430-2151
800-929-9906

Mr. Steve Vetere
Tetra Tech NUS, Inc.
250 Andover Street
Wilmington MA 01887

August 3, 2011

CLIENT SAMPLE ID

Project Name: LMC WILMINGTON

Project Number: 1121C03346

Field Sample ID: LMC-CONCRETE-NC-2

SAMPLE DATA

Lab Sample ID: 70594-2
Matrix: Solid
Percent Solid: 97
Dilution Factor: 1.0
Collection Date: 07/27/11
Lab Receipt Date: 07/27/11
Extraction Date: 08/01/11
Analysis Date: 08/03/11

PCB ANALYTICAL RESULTS

COMPOUND	Quantitation Limit µg/kg	Results µg/kg
PCB-1016	33	U
PCB-1221	33	U
PCB-1232	33	U
PCB-1242	33	U
PCB-1248	33	U
PCB-1254	33	U
PCB-1260	33	U
PCB-1262	33	U
PCB-1268	33	U

Surrogate Standard Recovery

2,4,5,6-Tetrachloro-m-xylene	107	%
Decachlorobiphenyl	95	%

U=Undetected J=Estimated E=Exceeds Calibration Range B=Detected in Blank

METHODOLOGY: Sample analysis conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 8082.

COMMENTS: Sample preparation conducted according to Test Methods for Evaluating Solid Waste, SW-846 Method 3540C. Results are expressed on a dry weight basis.

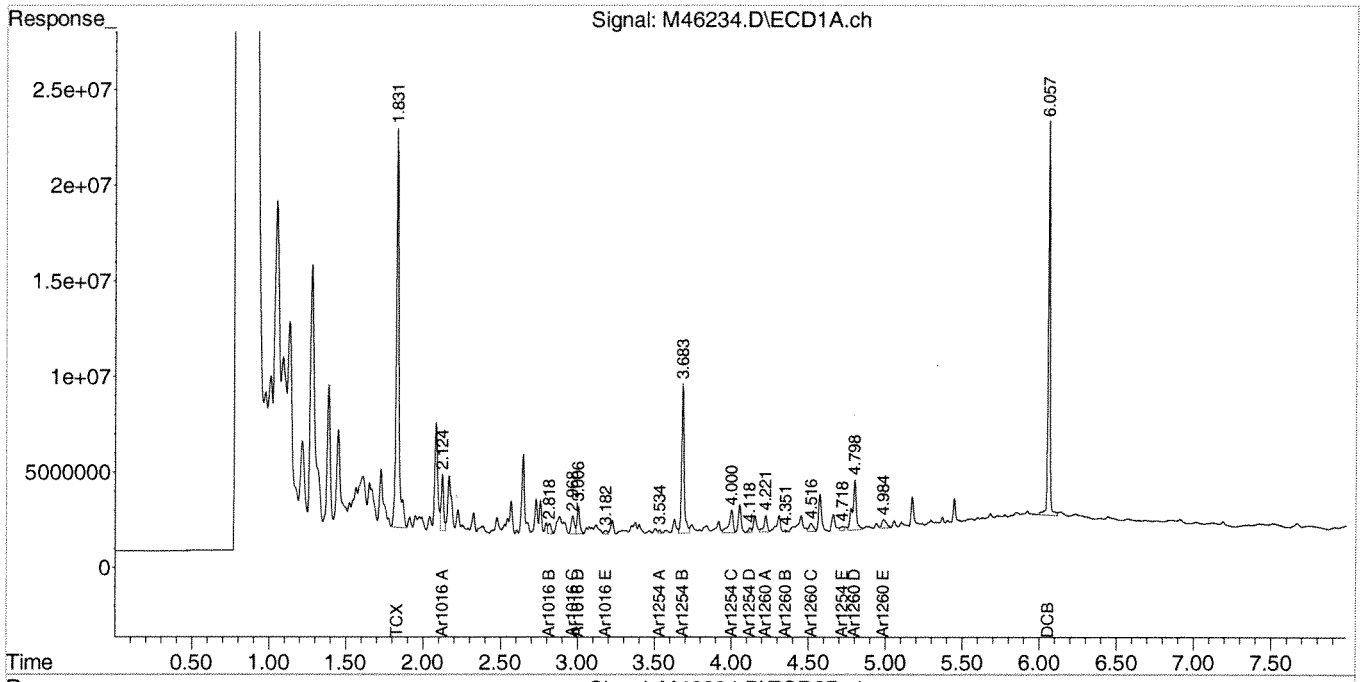
PCB EXT Report

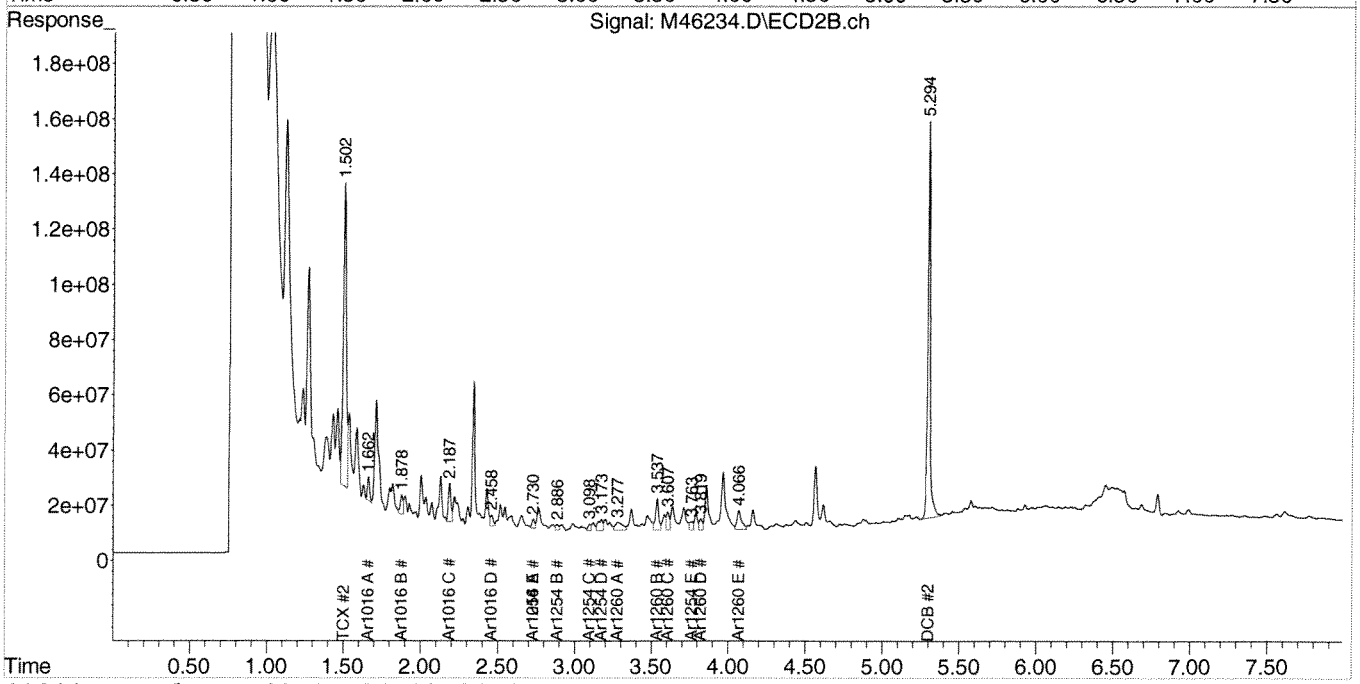
Authorized signature

Data Path : C:\msdchem\1\DATA\080311-M\
Data File : M46234.D
Signal(s) : Signal #1: ECD1A.ch Signal #2: ECD2B.ch
Acq On : 3 Aug 2011 11:59 am
Operator : JL
Sample : 70594-2
Misc :
ALS Vial : 10 Sample Multiplier: 1

Integration File signal 1: events.e
Integration File signal 2: events2.e
Quant Time: Aug 03 15:54:03 2011
Quant Method : C:\msdchem\1\METHODS\PCB080211.M
Quant Title : SW-846 METHOD 8082 Aroclor 1016/1260/1254
QLast Update : Wed Aug 03 11:00:55 2011
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 2 uL
Signal #1 Phase : STX-CLPPesticides Signal #2 Phase: STX-CLPPesticides
Signal #1 Info : 30 m x 0.25mm x 0 Signal #2 Info : 30 m x 0.25mm x 0.25 um





PCB
QC FORMS

PCB SOIL
LABORATORY CONTROL SAMPLE/DUPLICATE
PERCENT RECOVERY

Instrument ID: M

GC Column #1: STX-CLPesticides I

Column ID: 0.25 mm

GC Column #2: STX-CLPesticides II

Column ID: 0.25 mm

SDG:

Non-spiked sample: B080111PSOX,,A/C

Spike: L080111PSOX,,A/C

Spike duplicate: LD080111PSOX,,A/C

COMPOUND	LCS SPIKE ADDED (ug/kg)	LCSD SPIKE ADDED (ug/kg)	LOWER LIMIT	UPPER LIMIT	RPD LIMIT	NON-SPIKE RESULT (ug/kg)	SPIKE RESULT (ug/kg)	SPIKE % REC	#	SPIKE DUP RESULT (ug/kg)	SPIKE DUP % REC	#	RPD
PCB 1016	200	200	65	140	30	0	221	111		210	105		5.0
PCB 1260	200	200	60	130	30	0	227	114		212	106		6.8
PCB 1016 #2	200	200	65	140	30	0	232	116		225	113		2.7
PCB 1260 #2	200	200	60	130	30	0	215	107		201	101		6.5

Column to be used to flag recovery and RPD values outside of QC limits

* Values outside QC limits

LCS/LCSD spike added values have been weight adjusted.

Non-spike result of "0" used in place of "U" to allow calculation of spike recovery.

Comments: _____

_____

SUBCONTRACTED REPORTS
&
NARRATIVES

Casey Payne
Analytics Environmental Lab, LLC
195 Commerce Way
Portsmouth , NH 03801

ACCREDITED IN ACCORDANCE WITH nelac

Subject: Laboratory Report

Eastern Analytical, Inc. ID: 101841
Client Identification: 1121C03346 | LMC Wilmington
Date Received: 8/3/2011

Dear Ms. Payne:

Enclosed please find the laboratory report for the above identified project. All analyses were performed in accordance with our QA/QC Program. Unless otherwise stated, holding times, preservation techniques, container types, and sample conditions adhered to EPA Protocol. Samples which were collected by Eastern Analytical, Inc. (EAI) were collected in accordance with approved EPA procedures. Eastern Analytical, Inc. certifies that the enclosed test results meet all requirements of NELAP and other applicable state certifications. Please refer to our website at www.eailabs.com for a copy of our NELAP certificate and accredited parameters.

The following standard abbreviations and conventions apply to all EAI reports:
Solid samples are reported on a dry weight basis, unless otherwise noted
< : "less than" followed by the reporting limit
> : "greater than" followed by the reporting limit
%R : % Recovery

Eastern Analytical Inc. maintains certification in the following states: Connecticut (PH-0492), Maine (NH005), Massachusetts (M-NH005), New Hampshire/NELAP (1012), Rhode Island (269) and Vermont (VT1012).

The following information is contained within this report: Sample Conditions summary, Analytical Results/Data, Quality Control data (if requested) and copies of the Chain of Custody. This report may not be reproduced except in full, without the the written approval of the laboratory.

If you have any questions regarding the results contained within, please feel free to directly contact me or the chemist(s) who performed the testing in question. Unless otherwise requested, we will dispose of the sample(s) 30 days from the sample receipt date.

We appreciate this opportunity to be of service and look forward to your continued patronage.

Sincerely,

Lorraine Olashaw, Lab Director — Date: 8/4/11 — # of pages (excluding cover letter): 5

Analytical Method Report Certification Form

EAI ID#: 101841

Client: **Analytics Environmental Lab, LLC**

Client Designation: **1121C03346 | LMC Wilmington**

This Form provides certification for the following data set.

Received on ice or cold packs (Yes/No): Y
Temperature upon receipt (°C): 2.4
Acceptable temperature range (°C): 0-6

Lab ID	Sample ID	Date Rec'd	Date Samp'd	Sample Matrix	% Dry Weight	Exceptions/Comments (other than thermal preservation)
101841.01	LMC-Concrete-NC-1 70594-1	8/3/2011	7/27/2011	soil	78	Adheres to Sample Acceptance Policy
101841.02	LMC-Concrete-NC-2 70594-2	8/3/2011	7/27/2011	soil	87	Adheres to Sample Acceptance Policy

CAM Protocol(s) Reported

8260 ( ) 8082 ( ) VPH ( ) 6010 ( ) 9014 ( ) 8270 ( ) 8081 ( ) EPH ( ) 6020 (✓) 7196 ( )

CERTIFICATION: *Affirmative responses to questions A through F are required for "Presumptive Certainty" status*

A Were all samples received in a condition consistent with that described on the chain-of-custody, properly preserved, and prepared/analyzed within holding times? ✓Yes ___No

B Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed? ✓Yes ___No

C Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances? ✓Yes ___No

D Does the laboratory report comply with all the reporting requirements in CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data"? ✓Yes ___No

E **VPH and EPH Methods only:** Was each CAM protocol selected above run without significant modifications? ___Yes ___No ✓NA

F Were all applicable CAM protocol and QC performance standard non-conformances identified and evaluated in a laboratory narrative (including all "No" responses to Questions A through E)? ✓Yes ___No

Responses to questions G, H and I below are required for "Presumptive Certainty" status

G Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)? ✓Yes ___No

H Were all QC performance standards specified in the CAM protocol(s) achieved? ✓Yes ___No

I Were results reported for the complete analyte list specified in the selected CAM protocol(s)? ✓Yes ___No

I attest under the pains and penalties of perjury that, based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

Signature: _____ Lorraine Olashaw, Laboratory Director Date: 8/4/11

eastern analytical, inc. *www.eailabs.com* Phone: (603) 228-0525

Client Designation: **1121C03346 | LMC Wilmington**

Samples Received on: **8/3/2011**

SAMPLE RECEIPT

All samples were stored and analyzed in accordance with all quality control and method requirements unless otherwise noted below.

No field QC was designated for this sample delivery group.

QUALITY CONTROL

All samples were analyzed as part of an analytical QC batch consisting of a method blank, a laboratory control sample (LCS), a matrix duplicate, a matrix spike (MS) and a matrix spike duplicate (MSD), where applicable. Any deviations from QC acceptance criteria are noted below, this includes sample preservation and holding time requirements.

Method References:
EPA SW-846 Update III
Mass. Dept. of Environmental Protection Bureau of Waste Site Cleanup - Compendium of Analytical Methods (CAM)

METALS

All QC acceptance criteria were met.

Client: **Analytics Environmental Lab, LLC**

Client Designation: **1121C03346 | LMC Wilmington**

Sample ID:	LMC-Concrete-NC-1 70594-1	LMC-Concrete-NC-2 70594-2	**Analytical Matrix**	**Units**	**Date of Analysis**	**Method**	**Analyst**
Lab Sample ID:	101841.01	101841.02					
Matrix:	soil	soil					
Date Sampled:	7/27/11	7/27/11					
Date Received:	8/3/11	8/3/11					
Antimony	< 0.5	< 0.5	SolTotDry	mg/kg	8/3/11	6020	DS
Arsenic	**7.3**	**5.4**	SolTotDry	mg/kg	8/3/11	6020	DS
Barium	**52**	**33**	SolTotDry	mg/kg	8/3/11	6020	DS
Beryllium	< 0.5	< 0.5	SolTotDry	mg/kg	8/3/11	6020	DS
Cadmium	< 0.5	< 0.5	SolTotDry	mg/kg	8/3/11	6020	DS
Chromium	**21**	**15**	SolTotDry	mg/kg	8/3/11	6020	DS
Copper	**5.5**	**4.2**	SolTotDry	mg/kg	8/3/11	6020	DS
Lead	**2.8**	**3.8**	SolTotDry	mg/kg	8/3/11	6020	DS
Mercury	< 0.1	< 0.1	SolTotDry	mg/kg	8/3/11	6020	DS
Nickel	**14**	**9.0**	SolTotDry	mg/kg	8/3/11	6020	DS
Selenium	< 0.5	< 0.5	SolTotDry	mg/kg	8/3/11	6020	DS
Silver	< 0.5	< 0.5	SolTotDry	mg/kg	8/3/11	6020	DS
Thallium	< 0.5	< 0.5	SolTotDry	mg/kg	8/3/11	6020	DS
Zinc	**17**	**17**	SolTotDry	mg/kg	8/3/11	6020	DS

Client: **Analytics Environmental Lab, LLC**

Client Designation: **1121C03346 | LMC Wilmington**

Parameter Name	Blank	LCS	LCSD	Units	Date of Analysis	Limits	RPD	Method
Antimony	< 0.5	43 (108 %R)		mg/kg	8/3/11	80 - 120	20	6020
Arsenic	< 0.5	36 (89 %R)		mg/kg	8/3/11	80 - 120	20	6020
Barium	< 0.5	36 (89 %R)		mg/kg	8/3/11	80 - 120	20	6020
Beryllium	< 0.5	34 (85 %R)		mg/kg	8/3/11	80 - 120	20	6020
Cadmium	< 0.5	36 (90 %R)		mg/kg	8/3/11	80 - 120	20	6020
Chromium	< 0.5	32 (80 %R)		mg/kg	8/3/11	80 - 120	20	6020
Copper	< 0.5	34 (85 %R)		mg/kg	8/3/11	80 - 120	20	6020
Lead	< 0.5	36 (90 %R)		mg/kg	8/3/11	80 - 120	20	6020
Mercury	< 0.1	0.4 (91 %R)		mg/kg	8/3/11	80 - 120	20	6020
Nickel	< 0.5	32 (81 %R)		mg/kg	8/3/11	80 - 120	20	6020
Selenium	< 0.5	37 (94 %R)		mg/kg	8/3/11	80 - 120	20	6020
Silver	< 0.5	37 (92 %R)		mg/kg	8/3/11	80 - 120	20	6020
Thallium	< 0.5	36 (89 %R)		mg/kg	8/3/11	80 - 120	20	6020
Zinc	< 5	40 (99 %R)		mg/kg	8/3/11	80 - 120	20	6020

Parameter Name	MS/MSD Parent ID	MS/MSD Parent	Matrix Spike	MSD	Units	Date of Analysis	Limits	RPD	Method
Antimony	101841.02	< 0.5	1100 (115 %R)	1200 (117 %R) (2 RPD)	mg/kg	8/3/11	75-125	20	6020
Arsenic	101841.02	5.4	980 (97 %R)	980 (97 %R) (0 RPD)	mg/kg	8/3/11	75-125	20	6020
Barium	101841.02	33	1000 (98 %R)	1000 (99 %R) (1 RPD)	mg/kg	8/3/11	75-125	20	6020
Beryllium	101841.02	< 0.5	880 (87 %R)	900 (90 %R) (3 RPD)	mg/kg	8/3/11	75-125	20	6020
Cadmium	101841.02	< 0.5	980 (98 %R)	960 (96 %R) (2 RPD)	mg/kg	8/3/11	75-125	20	6020
Chromium	101841.02	15	780 (77 %R)	810 (79 %R) (3 RPD)	mg/kg	8/3/11	75-125	20	6020
Copper	101841.02	4.2	790 (79 %R)	810 (80 %R) (1 RPD)	mg/kg	8/3/11	75-125	20	6020
Lead	101841.02	3.8	980 (98 %R)	990 (99 %R) (1 RPD)	mg/kg	8/3/11	75-125	20	6020
Mercury	101841.02	< 0.1	1.0 (99 %R)	1.0 (98 %R) (1 RPD)	mg/kg	8/3/11	75-125	20	6020
Nickel	101841.02	9.0	820 (81 %R)	760 (75 %R) (8 RPD)	mg/kg	8/3/11	75-125	20	6020
Selenium	101841.02	< 0.5	940 (94 %R)	920 (92 %R) (2 RPD)	mg/kg	8/3/11	75-125	20	6020
Silver	101841.02	< 0.5	1000 (103 %R)	1100 (106 %R) (3 RPD)	mg/kg	8/3/11	75-125	20	6020
Thallium	101841.02	< 0.5	1000 (101 %R)	1000 (100 %R) (1 RPD)	mg/kg	8/3/11	75-125	20	6020
Zinc	101841.02	17	790 (77 %R)	810 (79 %R) (3 RPD)	mg/kg	8/3/11	75-125	20	6020

Samples were analyzed within holding times unless noted on the sample results page.
Instrumentation was calibrated in accordance with the method requirements.
The method blanks were free of contamination at the reporting limits.
The associated matrix spikes and/or Laboratory Control Samples met the above stated criteria.
Exceptions to the above statements are flagged or noted above or on the QC Narrative page.
*/! Flagged analyte recoveries deviated from the QA/QC limits.

360-35402

Chain Of Custody Form TA-West

101841

analytics environmental laboratory LLC

195 Commerce Way, Suite E
Portsmouth, NH 03801
(800) 929-9906

(603) 436-5111
(603) 430-2151 Fax

For Analytics Use Only

Samples were:
1) ~~Shipped or hand-delivered~~
2) Temperature (°C): 0.4°C w/ice
3) Received in good condition: Y or N
4) pH checked by:
5) Labels checked by: Test America

Project#: 112103346 Proj. Name: LHC WILMINGTON

Company: Analytics Environmental Lab LLC
Report to: Ms. Casey Payne
Address: 195 Commerce Way Suite E
Portsmouth, NH 03801
Phone: 603-436-5111
Quote #:
PO# (if required): 70594

Circle and/or Write Required Analysis

Field Filtered? Y or N
Metals: RCRA8 PP13 TAL23 Other*
✓ MADEP 14 metals

Station Identification	Sample Date	Sample Time	Preservation: Unpres	4° C	HNO3	H2SO4	HCl	Methanol	Other	Matrix	No. of Containers	pH checked	Analytics Sample #
LHC-CONCRETE-NC-1	7/27/11	1300		X						C	1		70594
LHC-CONCRETE-NC-2	"	1330		X						C	1		

Matrix Key:
C = Concrete, WP = Wipe, WW = Wastewater, SW = Surface Water, E = Extract, GW = Groundwater, DW = Drinking Water, S = Soil / Sludge, O = Oil, X = Other

JBS 7/27/11

Email Results to:
mgulli@analyticslab.com
cpayne@analyticslab.com

Turnaround Time (TAT)
☐ 24 Hours* ☐ 48 Hours*
☐ 72 Hours* ☒ 5 Days*
☐ 10 Days
*Fee may apply; lab approval required

8/3/11

Comments, Additional Analyses, or Special Instructions: * List requested metals here

REC'D @ EAI Via FedEx
from Test America 8/3/11
825
2.4°C on ice

Project Requirements:
*Fee may apply

Report Type:
☒ MCP* ☐ Level II*
☐ CTRCP* ☐ Level III*
☐ DOD* ☐ Level IV*
☐ Standard

State:
☐ NH ☒ MA ☐ ME ☐ CT ☐ RI
Other:

State Standard: (eg. S-1 or GW-1)

EDD Required: Y* (N)
Type:

Sampler Name (Print):

	Date:	Time:	
Relinquished By Sampler:			Received By: JBS 7/27/11
Relinquished By:	7/27/11	1650	Received By: UPS
Relinquished By: UPS	7/28/11	10:10	Received By:

UPS Ground 1Z6A55V50351210948

5

CHAIN OF CUSTODIES

Chain Of Custody Form

analytics environmental laboratory LLC

195 Commerce Way, Suite E
Portsmouth, NH 03801
(800) 929-9906

(603) 436-5111
(603) 430-2151 Fax

Project#: 1121C03346 Proj. Name: LMC WILMINGTON
Company: TETRA TECH
Report to: Steve Vetere
Address: 250 ANDOVER ST SUITE 200
WILMINGTON, MA 01887
Phone: 978-474-8444
Quote #:
PO# (if required):

Station Identification	Sample Date	Sample Time	Preservation: Unpres	4°C	HNO_3	H_2SO_4	HCl	Methanol	Other
(*) LMC-CONCRETE-NC-1	7/27/11	13:00		X				X	
LMC-CONCRETE-NC-2		13:30		X				X	
LMC-SO-TRENCH-1		14:00		X				X	
LMC-TB02		0700		X				X	

Circle and/or Write Required Analysis

Station Identification	Field Filtered? Y or N	VOC: 8260 624.2 624	SVOC: 8270 625 PAH only SIM	Pesticides: 8081 608	PCB: 8082 608 Soxhlet? Y or N	TPH: 8015ORO 8015GRO 8100M	EPH: Full (includes targets) Ranges only	VPH: Full (includes targets) Ranges only	Metals: RCRA8 PP13 TAL23 Other* 14 METALS	% SOLIDS
(*) LMC-CONCRETE-NC-1		1			2		2	1	2	2
LMC-CONCRETE-NC-2		1			2		2	1	2	2
LMC-SO-TRENCH-1		1					2	1		2
LMC-TB02		1						1		

For Analytics Use Only

Samples were:
1) Shipped or hand-delivered
2) Temperature (°C): 2.9°C
3) Received in good condition: (Y) or N
4) pH checked by: N/A
5) Labels checked by: JOB 7/27/11

Matrix Key:
C = Concrete
WP = Wipe
WW = Wastewater
SW = Surface Water
E = Extract
GW = Groundwater
DW = Drinking Water
S = Soil / Sludge
O = Oil
X = Other

Matrix	No. of Containers	pH checked	Analytics Sample #
C	10		70594-1
C	10		2
S	6		3
X	2		4

Email Results to: stephen.vetere@tetratech.com

Turnaround Time (TAT)
☐ 24 Hours* ☐ 48 Hours*
☐ 72 Hours* ☒ 5 Days*
☐ 10 Days
*Fee may apply; lab approval required

Comments, Additional Analyses, or Special Instructions: * List requested metals here

* METALS ARE MASS DEP 14 LIST
MASS DEP EPH & VPH
MCP PRESUMPTIVE CERTAINTY IS REQUIRED FOR THIS PROJECT
(*) 1 jar said "LMC-CONCRETE" on label JOB 7/27/11

Project Requirements:
*Fee may apply

Report Type:
☒ MCP* ☐ Level II*
☐ CTRCP* ☐ Level III*
☐ DOD* ☐ Level IV*
☐ Standard

State:
☐ NH ☒ MA ☐ ME ☐ CT ☐ RI
Other:

State Standard: S-1/GW-1 (eg. S-1 or GW-1)
EDD Required: Y* N
Type:

Sampler Name (Print): Michael Atroy				
Relinquished By Sampler: M. Atroy	Date: 7/27/11	Time: 1440	Received By:	
Relinquished By:	Date:	Time:	Received By:	
Relinquished By:	Date:	Time:	Received By:	7/27/11

ANALYTICS SAMPLE RECEIPT CHECKLIST

analytics environmental laboratory LLC

AEL LAB#: 70594 | COOLER NUMBER: 223

CLIENT: TETRA TECH | NUMBER OF COOLERS: 1

PROJECT: LMC WILMINGTON | DATE RECEIVED: 7/27/11

A: PRELIMINARY EXAMINATION: | DATE COOLER OPENED: 7/27/11

1. Cooler received by(initials): | Date Received: 7/27/11

2. Circle one: Hand delivered (if so, skip 3) Shipped

3. Did cooler come with a shipping slip? Y (N)

3a. Enter carrier name and airbill number here:

4. Were custody seals on the outside of cooler? Y (N)
How many & where: _____ Seal Date: _____ Seal Name: _____

5. Did the custody seals arrive unbroken and intact upon arrival? Y N/A

6. COC#: _____

7. Were Custody papers filled out properly (ink,signed, etc)? (Y) N

8. Were custody papers sealed in a plastic bag? (Y) N

9. Did you sign the COC in the appropriate place? (Y) N

10. Was the project identifiable from the COC papers? (Y) N

11. Was enough ice used to chill the cooler? (Y) N Temp. of cooler: 2.9°C

B. Log-In: Date samples were logged in: 7/29/11 By:

12. Type of packing in cooler (bubble wrap, popcorn) (Y) N

13. Were all bottles sealed in separate plastic bags? (Y) N

14. Did all bottles arrive unbroken and were labels in good condition? (Y) N

15. Were all bottle labels complete(ID,Date,time,etc.) (Y) N

16. Did all bottle labels agree with custody papers? (Y) N see COC

17. Were the correct containers used for the tests indicated: (Y) N

18. Were samples received at the correct pH? Y N/A

19. Was sufficient amount of sample sent for the tests indicated? (Y) N

20. Were all samples submitted within holding time? (Y) N

21. Were bubbles absent in VOA samples? Y N/A

If NO, List Sample ID's and Lab #s: _____

22. Laboratory labeling verified by (initials): _____ Date: 7/27/11

APPENDIX E

Copy of Bill of Lading

TETRA TECH

C52-01-12-4414W

January 20, 2012

Project Number 112IC03346

Mr. Kenneth Sanderson
Massachusetts Department of Environmental Protection
Northeast Regional Office
205B Lowell Street
Wilmington, Massachusetts 01887

Reference: Final Bills of Lading
Utility-related Abatement Measure
Former General Electric Property
50 Fordham Road
Wilmington, Massachusetts
Release Tracking Number (RTN) 3-29952

Dear Mr. Sanderson:

On behalf of Lockheed Martin Corporation, Tetra Tech is submitting (attached) bills of lading BWSC112A and BWSC112B in regards to a Utility-Related Abatement Measure (URAM) at the subject property. A URAM status report for this site was last provided on August 24, 2011.

The URAM was conducted to relocate electrical service to an existing on-site groundwater treatment building and parking lot light poles. A URAM Plan was provided to MassDEP to document the potential to encounter contaminated soils associated with the release of VOCs and petroleum hydrocarbons (Stoddard solvent) from historical site operations. This URAM is being conducted in support of a Release Abatement Measure (RAM) conducted under RTN 3-00518.

In total, approximately 27.02 tons of soil was removed from the site as a part of the URAM. Final BOLs, statement of attestation, and waste characterization data is provided attached. Tetra Tech collected one composite waste characterization sample to facilitate the generation of the waste disposal profile. Based on the analytical data, this material consists of remediation waste containing low concentrations of petroleum hydrocarbons.

You will notice that this submittal is being made more than 30 days following the receipt of the material at the receiving facility, this is due to complications with EDEP permissions and submittals and a lack of familiarity of this process by the receiving facility in Pennsylvania. We apologize for this variance.

Tetra Tech will prepare a URAM Completion Report on behalf of Lockheed Martin to comply with the requirements of 310 CMR 40.0466. If you have any questions or comments on this matter, please do not hesitate to contact me by telephone at 978-474-8434 or by e-mail at *stephen.parker@tetratech.com.*

Very truly yours,

Stephen S. Parker, LSP
Project Manager

SSP/lh

Tetra Tech
250 Andover Street, Suite 200, Wilmington, MA 01887-1048
Tel 978.474.8400 Fax 978.474.8499 www.tetratech.com

Attachment

c: R. Phillips, Lockheed Martin Corporation
J. Winkler, CDM
S. Nesbit, Tetra Tech
M. Alroy, Tetra Tech
M. Martin, Tetra Tech
K. Cormier, TRC Environmental
File IC03346-3.2 w/o attach.
File IC03346-8.0 w/ attach.

Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup

BWSC112

BILL OF LADING (pursuant to 310 CMR 40.0030)

Release Tracking Number
3 - 29952

A. LOCATION OF SITE OR DISPOSAL SITE WHERE REMEDIATION WASTE WAS GENERATED:

1. Release Name/Location Aid: FORMER GE SITE
2. Street Address: 50 FORDHAM ROAD
3. City/Town: WILMINGTON 4. Zip Code: 01887-2177
5. ☐ Check her if a Tier Classification Submittal has been provided to DEP for this disposal site:
   ☐ a. Tier 1A ☐ b. Tier 1B ☐ b. Tier 1C ☐ d. Tier II
6. If applicable provide the Permit Number:

B. THIS FORM IS BEING USED TO: (check one: B1-B4):

☑ 1. Submit a **Bill of Lading (BOL)** to transport Remediation Waste to Temporary Storage or a Receiving Facility. Response Actions associated with this BOL (check all that apply):

- ☐ a. Immediate Response Action (IRA)
- ☐ b. Release Abatement Measure (RAM)
- ☐ c. Downgradient Property Status (DPS)
- ☑ d. Utility Release Abatement Measure (URAM)
- ☐ e. Comprehensive Response Actions
- ☐ f.. Limited Removal Action (LRA): (must be retained pursuant to 310 CMR 40.0034(6); can't be submitted via eDEP)
- ☐ g. Other

☐ 2. Submit an Attestation of Completion of **Shipment to Temporary Storage** (Sections C, F and J are not required):

☐ 3. Submit an Attestation of Completion of **Shipment to a Receiving Facility** (Sections C, F and J are not required):

☐ 4. Certify that Remediation Waste Was **Not Shipped, and the Bill of Lading is Void.** (Sections C, D, E, and F are not required)

5. Date Bill of Lading submitted to the Department: _____ (mm/dd/yyyy) b. eDEP Transaction ID:

6. Period of Generation Associated with this Bill of Lading 6/21/2011 (mm/dd/yyyy) to 6/21/2011 (mm/dd/yyyy)

(All sections of this transmittal form must be filled out unless otherwise noted)
The Bill of Lading is not considered complete until the Attestation of Completion of Shipment is received by the Department.

C. DESCRIPTION OF WASTE AND WASTE SOURCE:

1. Contaminated Media /Debris (check all that apply):
   ☑ a. Soil ☐ b. Groundwater ☐ c. Surface Water ☐ d. Sediment ☐ e. Vegetation or Organic Debris
   ☐ f. Demolition/Construction Waste ☐ g. Inorganic Absorbent Materials ☐ h. Other:
2. Uncontainerized Waste (check all that apply):
   ☐ a. Inorganic Absorbent Materials ☐ b. Other:

Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup

BILL OF LADING (pursuant to 310 CMR 40.0030)

BWSC112

Release Tracking Number
3 - 29952

C. DESCRIPTION OF WASTE AND WASTE SOURCE (cont.):

3. Containerized Waste (check all that apply):

☐ a. Tank Bottoms/Sludges ☐ b. Containers ☐ c. Drums ☐ d. Engineered Impoundments

☐ e. Other:

4. Estimated Quantity: 50 ☐ Tons ☑ Cu. Yds. ☐ Gallons

5. Contaminant Source (check one):

☐ a. Transportation Accident ☐ b. Underground Storage Tank ☐ c. Brownfields Redevelopment

☑ d. Other: OLD SURFACE RELEASE

6. Type of Contaminant (check all that apply):

☐ a. Gasoline ☐ b. Diesel Fuel ☐ c. #2 Fuel Oil ☐ d. #4 Fuel Oil ☐ e. #6 Fuel Oil ☐ f. Jet Fuel

☐ g. Waste Oil ☐ h. Kerosene ☐ i. Chlorinated Solvents ☐ j. Urban Fill ☑ k. Other: STODDARD SOL

7. Constituents of Concern (check all that apply):

☐ a. As ☐ b. Cd ☐ c. Cr ☐ d. Pb ☐ e. Hg ☑ f. EPH/TPH ☑ g. VPH

☐ h. PCBs ☐ i. VOCs ☐ j. SVOCs ☐ k. Other:

8. If applicable, check the box for the Reportable Concentration Category of the site:

☑ a. RCS-1 ☐ b. RCS-2 ☑ c. RCGW-1 ☐ d. RCGW-2

9. Remediation Waste Characterization Documentation (check at least one):

☑ a. Site History Information ☐ b. Sampling Analytical Methods and Procedures ☑ c. Laboratory Data

☐ d. Field Screening Data ☐ e. Characterization Documentation previously submitted to the Department

i. Date submitted: (mm/dd/yyyy) ii. Type of Documentation:

D. TRANSPORTER OR COMMON CARRIER INFORMATION:

1. Transporter/Common Carrier Name: GOULET TRUCKING INC

2. Contact First Name: JEFF 3. Last Name: GOULET

4. Street: 20 INDUSTRIAL DRIVE WEST 5. Title:

6. City/Town: SOUTH DEERFIELD 7. State: MA 8. Zip Code: 01373-0000

9. Telephone: (413) 665-1323 10. Ext: 11. Fax: (413) 665-1327

Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup

BILL OF LADING (pursuant to 310 CMR 40.0030)

BWSC112

Release Tracking Number
3 - 29952

E. RECEIVING FACILITY/TEMPORARY STORAGE LOCATION:

1. Operator/Facility Name: WMPA LF (GROWS NORTH) / TULLYTOWN PA
2. Contact First Name: KAREN 3. Last Name: SCHOEDEL
4. Street: 444 OXFORD VALLEY ROAD 5. Title:
6. City/Town: LANGHORNE 7. State: PA 8. Zip Code: 19047-0000
9. Telephone: (267) 580-2831 10. Ext: 11. Fax: (267) 580-3003
12. Type of Facility: (Check one)
    a. Temporary Storage i. Period of Temporary Storage: (mm/dd/yyyy) to (mm/dd/yyyy)
    ii. Reason for Temporary Storage:
    ☐ b. Asphalt Batch/Hot Mix ☑ c. Landfill/Disposal ☐ d. Landfill/Structural Fill ☐ e. Landfill/Daily Cover
    ☐ f. Asphalt Batch/Cold Mix ☐ g. Thermal Processing ☐ h. Incinerator ☐ i. Other:
13. Division of Hazardous Waste/Class A Permit Number: NA
14. Division of Solid Waste Permit Number: 101680 / 101494
15. EPA Identification Number: NA

F. LSP SIGNATURE AND STAMP:

I attest under the pains and penalties of perjury that I have personally examined and am familiar with this submittal form, including any and all documents accompanying this submittal. In my professional opinion and judgment based upon application of (i) the standard of care in 309 CMR 4.02(1), (ii) the applicable provisions of 309 CMR 4.02(2) and (3), and 309 CMR 4.03(2), and (iii) the provisions of 309 CMR 4.03(3), to the best of my knowledge, information and belief, the assessment action(s) undertaken to characterize the Remediation Waste which is (are) the subject of this submittal for acceptance at the facility identified in this submittal comply with applicable provisions of 310 CMR 40.0000, and such facility is permitted to accept Remediation Waste having the characteristics described in this submittal.

I am aware that significant penalties may result, including, but not limited to, possible fines and imprisonment, if I submit information which I know to be false, inaccurate or materially incomplete.

1. LSP #: 9867
2. First Name: STEPHEN S 3. Last Name: PARKER
4. Telephone: (978) 658-7899 5. Ext.
6. FAX:
7. Signature: STEPHEN S PARKER
8. Date: 10/18/2011 (mm/dd/yyyy)
9. LSP Stamp:

Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup

BWSC112

BILL OF LADING (pursuant to 310 CMR 40.0030)

Release Tracking Number
3 - 29952

G. PERSON SUBMITTING BILL OF LADING:

1. Check all that apply: ☐ a. change in contact name ☐ b. Change of address ☐ c. change in person undertaking response actions
2. Name of Organization: LOCKHEED MARTIN CORP
3. Contact First Name: ROBERT S 4. Last Name: PHILLIPS
5. Street: 6801 ROCKLEDGE DR MP DM315 6. Title:
7. City/Town: BETHESDA 8. State: MD 9. Zip Code: 20817-1803
10. Telephone: (817) 763-7629 11. Ext: 12. Fax:

H. RELATIONSHIP TO SITE OF PERSON SUBMITTING BILL OF LADING:

☐ Check here to change relationship

☑ 1. RP or PRP: ☐ a. Owner ☐ b. Operator ☐ c. Generator ☐ d. Transporter
☑ e. Other RP or PRP Specify: NON-SPECIFIED PRP

☐ 2. Fiduciary, Secured Lender or Municipality with Exempt Status (as defined by M.G.L. c.21E, s.2):

☐ 3. Agency or Public Utility on a Right of Way (as defined by M.G.L. c.21E, s.5(j))

☐ 4. Any Other person Undertaking Response Actions: Specify Relationship:

I. REQUIRED ATTACHMENTS AND SUBMITTALS :

☐ 1. Check here if the Response Action(s) on which this opinion is based, if any, are (were) subject to any order(s), permit(s) and/or approvals issued by DEP or EPA. If the box is checked, you must attach a statement identifying the applicable provisions thereof.

☐ 2. Check here if any non-updatable information provided on this form is incorrect, e. g. property address. Send corrections to BWSC.eDEP@state.ma.us

☑ 3. Check here to certify that the LSP Opinion containing the material facts, data, and other information is attached.

J. CERTIFICATION OF PERSON SUBMITTING BILL OF LADING :

1. I, ROBERT STANLEY PHILLIPS, attest under the pains and penalties or perjury (i) that I have personally examined and am familiar with the information contained in this submittal, including any and all documents accompanying this transmittal form, (ii) that, based on my inquiry of those individuals immediately responsible for obtaining the information, the material information contained in this submittal is, to the best of my knowledge and belief, true, accurate and complete, and (iii) that I am fully authorized to make this attestation on behalf of the entity legally responsible for this submittal. I/the person or entity on whose behalf this submittal is made am/is aware that there are significant penalties, including, but not limited to, possible fines and imprisonment, for willfully submitting false, inaccurate, or incomplete information.

2. By: ROBERT STANLEY PHILLIPS 3. Title:

4. For: LOCKHEED MARTIN CORP (Name of person or entity recorded in Section H) 5. Date: 10/21/2011 (mm/dd/yyyy)

Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup

BILL OF LADING (pursuant to 310 CMR 40.0030)

BWSC112

Release Tracking Number
3 - 29952

J. CERTIFICATION OF PERSON SUBMITTING BILL OF LADING (cont.) :

☐ 6. Check here if the address of the person providing certification is different from address recorded in Section H.

7. Street:

8. City/Town: 9. State: 10. Zip Code:

11. Telephone: 12. Ext: 13. Fax:

YOU ARE SUBJECT TO AN ANNUAL COMPLIANCE ASSURANCE FEE OF UP TO $10,000 PER BILLABLE YEAR FOR THIS DISPOSAL SITE. YOU MUST LEGIBLY COMPLETE ALL RELEVANT SECTIONS OF THIS FORM OR DEP MAY RETURN THE DOCUMENT AS INCOMPLETE. IF YOU SUBMIT AN INCOMPLETE FORM, YOU MAY BE PENALIZED FOR MISSING A REQUIRED DEADLINE.

Date Stamp (MassDEP USE ONLY):

Received by DEP on

1/3/2012 11:48:54 AM

476671PAE

Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup

BWSC112A

BILL OF LADING (pursuant to 310 CMR 40.0030)

Release Tracking Number 3-29952

SUMMARY OF SHIPMENT SHEET 1 **OF** 1

A. SUMMARY OF SHIPMENT (To be filled out by the receiving facility upon receipt of Remediation Waste):

1. Date of Shipment: (mm/dd/yyyy)	2. Date of Receipt: (mm/dd/yyyy)	3. Number of Loads Shipped:	4. Daily Volume Shipped: ☐ yds³ ☑ tons ☐ gals
11/4/2011	11/4/2011	1	22.01
11/4/2011	11/7/2011	1	5.01
5. Totals Recorded on this Summary of Shipment Sheet:		2	27.02

B. ☐ Check here if additional BWSC112A BOL Summary Sheets are needed.

Revised: 03/10/2010

476671 PAE

Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup

BILL OF LADING Transport Log Sheet

Page 1 OF 1

Release Tracking Number: 3 - 29952

I. LOAD INFORMATION: Signature of Transporter Representative:

Load 1: SC Ballard, 41 Charlotte Pomeroy

Date of Shipment: 11/4/2011 Time of Shipment: 8:00 ☑ AM ☐ PM

Truck/Tractor Registration: CT50957A Trailer Registration (if any): CTV74220

Receiving Facility/Temporary Storage Representative: Karen Schoedel WM TSR Tullytown Resource Recovery Facility

Date of Receipt: 11/7/2011 Time of Receipt: 8:09 ☑ AM ☐ PM

ticket# 1224623 manifest 438097

Load Size (cu. yds./tons): 5.01 tons

Load 2: Signature of Transporter Representative:

Goulet, 09-02 Christopher Pomeroy

Date of Shipment: 11/4/2011 Time of Shipment: 7:45 ☑ AM ☐ PM

Truck/Tractor Registration: MA59275 Trailer Registration (if any): NY1202C5

Receiving Facility/Temporary Storage Representative: Karen Schoedel WM TSR Tullytown Resource Recovery Facility

Date of Receipt: 11/4/2011 Time of Receipt: 2:46 ☐ AM ☑ PM

ticket# 613939 manifest 438096

Load Size (cu. yds./tons): 22.01 tons

Load 3: Signature of Transporter Representative:

Date of Shipment: Time of Shipment: AM ☐ PM

Truck/Tractor Registration: Trailer Registration (if any):

Receiving Facility/Temporary Storage Representative:

Date of Receipt: Time of Receipt: ☐ AM

Load Size (cu. yds./tons):

Load 4: Signature of Transporter Representative:

Date of Shipment: Time of Shipment: AM ☐ PM

Truck/Tractor Registration: Trailer Registration (if any):

Receiving Facility/Temporary Storage Representative:

Date of Receipt: Time of Receipt: ☐ PM

Load Size (cu. yds./tons):

Load 5: Signature of Transporter Representative:

Date of Shipment: Time of Shipment: AM ☐ PM

Truck/Tractor Registration: Trailer Registration (if any):

Receiving Facility/Temporary Storage Representative:

Date of Receipt: Time of Receipt: ☐ PM

Load Size (cu. yds./tons):

Load 6: Signature of Transporter Representative:

Date of Shipment: Time of Shipment: ☐ AM

Truck/Tractor Registration: Trailer Registration (if any):

Receiving Facility/Temporary Storage Representative:

Date of Receipt: Time of Receipt: ☐ PM

Load Size (cu. yds./tons):

J. LOG SHEET VOLUME INFORMATION:

Total Volume Recorded This Page (cu. yds./tons): 27.02

Total Carried Forward (cu. yds./tons): 0

Total Carried Forward and This Page (cu. yds./tons): 27.02

1/13/11

Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup

BWSC112B

BILL OF LADING (pursuant to 310 CMR 40.0030)
SUMMARY SHEET SIGNATURE PAGE

Release Tracking Number
3 - 29952

A. ACKNOWLEDGEMENT OF RECEIPT OF REMEDIATION WASTE AT RECEIVING FACILITY OR TEMPORARY STORAGE:

1. I, Karen Schoedel, attest under the pains and penalties or perjury (i) that I have personally examined and am familiar with the information contained in this submittal, including any and all documents accompanying this transmittal form, (ii) that, based on my inquiry of those individuals immediately responsible for obtaining the information, the material information contained in this submittal is, to the best of my knowledge and belief, true, accurate and complete, and (iii) that I am fully authorized to make this attestation on behalf of the entity legally responsible for this submittal. I/the person or entity on whose behalf this submittal is made am/is aware that there are significant penalties, including, but not limited to, possible fines and imprisonment, for willfully submitting false, inaccurate, or incomplete information.

2. By: Karen A Schoedel 3. Title: T.S.R.

4. For: Waste Management 5. Date: 12/22/2011 (mm/dd/yyyy)

6. Date of Final Shipment associated with this Bill of Lading: 11/7/2011 (mm/dd/yyyy)

B. ACKNOWLEDGEMENT OF SHIPMENT AND RECEIPT OF REMEDIATION WASTE BY PERSON CONDUCTING RESPONSE ACTIONS ASSOCIATED WITH THIS BILL OF LADING:

1. I, R. Stan Phillips, attest under the pains and penalties or perjury (i) that I have personally examined and am familiar with the information contained in this submittal, including any and all documents accompanying this transmittal form, (ii) that, based on my inquiry of those individuals immediately responsible for obtaining the information, the material information contained in this submittal is, to the best of my knowledge and belief, true, accurate and complete, and (iii) that I am fully authorized to make this attestation on behalf of the entity legally responsible for this submittal. I/the person or entity on whose behalf this submittal is made am/is aware that there are significant penalties, including, but not limited to, possible fines and imprisonment, for willfully submitting false, inaccurate, or incomplete information.

2. By: R. Stan Phillips 3. Title: Project Lead

4. For: Lockheed Martin Corp. (Name of person or entity recorded in Section G) 5. Date: 01/16/12 (mm/dd/yyyy)

☐ 6. Check here if the address of the person providing certification is different from address recorded in BWSC112 Section H.

7. Street:

8. City/Town: 9. State: 10. Zip Code:

11. Telephone: 12. Ext: 13. Fax:

☐ 14. Check here if attaching optional supporting documentation such as copies of Load Information Summary Sheets

Grows North Landfill
1000 New Ford Mill Road,
Morrisville, PA, 19067-3704
Ph: (215) 428-4340

Reprint Ticket # 613939

Customer Name	TantaraCorp	**Carrier**	GOULET	
Ticket Date	11/04/2011	**Vehicle#**	092	**Volume**
Payment Type	Credit Account	**Container**		
Manual Ticket#		**Driver**		
Hauling Ticket#		**Check#**		
Route		**Billing#**	0004156	
StateWasteCode	920	**Gen EPA ID**		
Manifest	438096	**Grid**	N2 11-4-11	
Destination	N2			
PO#				
Profile	476671PAE(Non-Haz Contaminated Soil & Debris)			
Generator	930986 132-LOCKHEEDMA			

	Time	Scale	Operator	Inbound		
In	11/04/11 02:46:59 PM	NORTH LAB INBOUND	bseverns		**Gross**	79940 lb
Out	11/04/11 03:17:12 PM	NORTH 4 OUTBOUND	bseverns		**Tare**	35920 lb
					Net	44020 lb
					Tons	22.01

Tullytown Landfill
200 Bordentown Road,
Tullytown, PA, 19007-6309
Ph: (215) 428-3291

Reprint Ticket # 1224623

Customer Name	TantaraCorp	**Carrier**	SCBALLARD	
Ticket Date	11/07/2011	**Vehicle#**	41	**Volume**
Payment Type	Credit Account	**Container**		
Manual Ticket#		**Driver**		
Hauling Ticket#		**Check#**		
Route		**Billing#**	0004157	
StateWasteCode	920	**Gen EPA ID**		
Manifest	438097	**Grid**	T1 11-10-11	
Destination	T2			
PO#				
Profile	476671PAE(Non-Haz Contaminated Soil & Debris)			
Generator	940075 132-LOCKHEEDMA			

	Time	**Scale**	**Operator**	Inbound		
In	11/07/11 08:09:49 AM	TRRF LAB INBOUND	bseverns		**Gross**	45540 lb
Out	11/07/11 08:44:34 AM	TRRF 2 OUTBOUND	bseverns		**Tare**	35520 lb
					Net	10020 lb
					Tons	5.01

WASTE MANAGEMENT

Generator's Non-hazardous Waste Profile Sheet

Requested Disposal Facility: WMPA L/F (GROWS North) Hullytown Profile Number: 476671PAE

☐ Renewal for Profile Number: _____ Waste Approval Expiration Date: _____

☐ Check here if there are multiple generating locations for this waste. Attach additional locations.

A. Waste Generator Facility Information (must reflect location of waste generation/origin)

1. Generator Name: Lockheed Martin Corporation
2. Site Address: 50 Fordham Road
3. City/ZIP: Wilmington, 01887
4. State: Massachusetts
5. County: Middlesex
6. Contact Name/Title: Robert S. Phillips, Project Lead
7. Email Address: robert.s.phillips@lmco.com
8. Phone: 817-495-0251 9. FAX: 817-762-4884
10. NAICS Code: _____
11. Generator USEPA ID #: _____
12. State ID# (if applicable): _____

B. Customer Information ☐ same as above

P. O. Number: TiNUS Wilmington

1. Customer Name: TANTARA Corporation
2. Billing Address: 54 Mason Street
3. City, State and ZIP: Worcester, Massachusetts, 01610
4. Contact Name: Chris Pereira
5. Contact Email: cpereira@tantaracorp.com
6. Phone: 508.752.5599 FAX: 508.752.1005
7. Transporter Name: Goulet Trucking, Inc.
8. Transporter ID # (if appl.): _____
9. Transporter Address: 20 Industrial Drive, West
10. City, State and ZIP: South Deerfield , Massachusetts, 01373

C. Waste Stream Information

1. DESCRIPTION

a. Common Waste Name: Contaminated Soil
State Waste Code(s): ~~None~~ 920

b. Describe Process Generating Waste or Source of Contamination:
Operational spills and leaks

c. Typical Color(s): Brown

d. Strong Odor? ☐ Yes ☑ No Describe: _____

e. Physical State at 70°F: ☑ Solid ☐ Liquid ☐ Powder ☐ Semi-Solid or Sludge ☐ Other: _____

f. Layers? ☐ Single layer ☐ Multi- layer ☑ NA

g. Water Reactive? ☐ Yes ☑ No If Yes, Describe: _____

h. Free Liquid Range (%): _____ to _____ ☑ NA(solid)

i. pH Range: 7 to _____ ☑ NA(solid)

j. Liquid Flash Point: ☐ < 140°F ☐ 140°- 199°F ☐ ≥ 200°F ☑ NA(solid)

k. Flammable Solid: ☐ Yes ☑ No

l. Physical Constituents: List all constituents of waste stream - (e.g. Soil 0-80%, Wood 0-20%): ☐ (See Attached)

Constituents (Total Composition Must be ≥ 100%)	Lower Range	Unit of Measure	Upper Range	Unit of Measure
1. Soil	85	%	92	%
2. Concrete	5	%	15	%
3. Debris / Plastic	1	%	2	%
4.				
5.				
6.				

2. ESTIMATED QUANTITY OF WASTE AND SHIPPING INFORMATION

a. ☑ One Time Event ☐ Base ☐ Repeat Event

b. Estimated Annual Quantity: 700 ☑ Tons ☐ Cubic Yards ☐ Drums ☐ Gallons ☐ Other (specify): _____

c. Shipping Frequency: one event Units per ☐ Month ☐ Quarter ☐ Year ☑ One Time ☐ Other

d. Is this a U.S. Department of Transportation (USDOT) Hazardous Material? (If yes, answer e.) ☐ Yes ☑ No

e. USDOT Shipping Description (if applicable): _____

3. SAFETY REQUIREMENTS (Handling, PPE, etc.): May have rebar protruding from the concrete

URAM = 45 CY - 50 CY

RAM = Remainder

WM WASTE MANAGEMENT

Generator's Non-hazardous Waste Profile Sheet

476671PAE

D. Regulatory Status (Please check appropriate responses)

1. Waste Identification:
   a. Does the waste meet the definition of a USEPA listed or characteristic hazardous waste as defined by 40 CFR Part 261? ☐ Yes ☑ No
      1. If yes, please complete a hazardous waste profile.
   b. Does the waste meet the definition of a state hazardous waste other than identified in D.1.a? ☐ Yes ☑ No
      1. If yes, please complete a hazardous waste profile.
2. Is this waste included in one or more of categories below (Check all that apply)? If yes, attach supporting documentation. ☐ Yes ☑ No
   ☐ Delisted Hazardous Waste ☐ Excluded Wastes Under 40CFR 261.4
   ☐ Treated Hazardous Waste Debris ☐ Treated Characteristic Hazardous Waste
3. Is the waste from a Federal (40 CFR 300, Appendix B) or state mandated clean-up? If yes, see instructions. ☐ Yes ☑ No
4. Does the waste represented by this waste profile sheet contain radioactive material? ☐ Yes ☑ No
   a. If yes, is disposal regulated by the Nuclear Regulatory Commission? ☐ Yes ☐ No
   b. If yes, is disposal regulated by a State Agency for radioactive waste/NORM? ☐ Yes ☐ No
5. Does the waste represented by this waste profile sheet contain Polychlorinated Biphenyls (PCBs)? ☐ Yes ☑ No
   (If yes, list in Chemical Composition - C.1.l)
   a. If yes, are the PCBs regulated by 40 CFR 761? ☐ Yes ☐ No
   b. If yes, is it remediation waste from a project being performed under the Self-Implementing option provided in 40 CFR 761.61(a)? ☐ Yes ☐ No
   c. If yes, were the PCBs imported into the US? ☐ Yes ☐ No
6. Does the waste contain untreated, regulated medical or infectious waste? ☐ Yes ☑ No
7. Does the waste contain asbestos? ☐ Yes ☑ No
   a. If Yes, ☐ Friable ☐ Non Friable
8. Is this profile for remediation waste from a facility that is a major source of Hazardous Air Pollutants (Site Remediation NESHAP, 40 CFR 63 subpart GGGGG)? ☐ Yes ☑ No
   a. If yes, does the waste contain <500 ppmw VOHAPs at the point of determination? ☐ Yes ☐ No

E. Generator Certifcation (Please read and certify by signature below)

By signing this Generator's Waste Profile Sheet, I hereby certify that all:

1. Information submitted in this profile and all attached documents contain true and accurate descriptions of the waste material;
2. Relevant information within the possession of the Generator regarding known or suspected hazards pertaining to this waste has been disclosed to WM/the Contractor;
3. Analytical data attached pertaining to the profiled waste was derived from testing a representative sample in accordance with 40 CFR 261.20(c) or equivalent rules; and
4. Changes that occur in the character of the waste (i.e. changes in the process or new analytical) will be identified by the Generator and disclosed to WM (and the Contractor if applicable) prior to providing the waste to WM (and the contractor if applicable).
5. Check all that apply:
   ☐ a. Attached analytical pertains to the waste. Identify laboratory & sample ID #'s and parameters tested: _____ # Pages: _____
   ☑ b. Only the analysis identified on the attachment pertain to the waste (identify by laboratory & sample ID #'s and parameters tested). Attachment #: Alpha Analytical - Sample NC-2, ST-1 and SO-1 - See attached
   ☐ c. Additional information necessary to characterize the profiled waste has been attached (other then analytical, such as MSDS). Indicate the number of attached pages: _____
   ☐ d. I am an agent signing on behalf of the Generator, and the delegation of authority to me from the Generator for this signature is available upon request.

Certification Signature: Robert S. Phillips Title: Project Lead

Company Name: Lockheed Martin Name (Print): Robert S. Phillips

Date: 9/6/11

Data for URAM & RAM

ALPHA ANALYTICAL

ANALYTICAL REPORT

SOIL

Lab Number:	L1112155
Client:	Tetra Tech Nus, Inc. 250 Andover St Suite 200 Wilmington, MA 01887
ATTN:	Steve Vetere
Phone:	(978) 474-8444
Project Name:	LMC WILMINGTON
Project Number:	1121C03346
Report Date:	08/18/11

Certifications & Approvals: MA (M-MA086), NY NELAC (11148), CT (PH-0574), NH (2003), NJ (MA935), RI (LAO00065), ME (MA0086), PA (Registration #68-03671), USDA (Permit #S-72578), US Army Corps of Engineers, Naval FESC.

Eight Walkup Drive, Westborough, MA 01581-1019
508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com

Project Name: LMC WILMINGTON
Project Number: 1121C03346

Lab Number: L1112155
Report Date: 08/18/11

Alpha Sample ID	Client ID	Sample Location	Collection Date/Time
L1112155-01	LMC-WC-CONCRETE-C-1	50 FORDHAM RD. WILMINGTON, MA	08/10/11 09:00
L1112155-02	LMC-WC-CONCRETE-NC-2	50 FORDHAM RD. WILMINGTON, MA	08/10/11 09:30
L1112155-03	LMC-WC-CONCRETE-ST-1	50 FORDHAM RD. WILMINGTON, MA	08/10/11 10:00
L1112155-04	LMC-WC-SO-1	50 FORDHAM RD. WILMINGTON, MA	08/10/11 10:30

Project Name: LMC WILMINGTON
Project Number: 1121C03346

Lab Number: L1112155
Report Date: 08/18/11

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet all of the requirements of NELAC, for all NELAC accredited parameters. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively. When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

Please see the associated ADEx data file for a comparison of laboratory reporting limits that were achieved with the regulatory Numerical Standards requested on the Chain of Custody.

For additional information, please contact Client Services at 800-624-9220.

TCLP Semivolatiles

The surrogate recoveries for L1112155-03 are outside the individual acceptance criteria for 2,4,6-Tribromophenol (132%) and 4-Terphenyl-d14 (122%), but within the overall method allowances. The results of the original analysis are reported.

PCB

L1112155-01, -02, -03, and the associated QC have elevated detection limits due to the limited sample volume utilized during extraction, as required by the sample matrix.

TCLP Pesticides

L1112155-03: The internal standard (IS) response for 1-Bromo-2-nitrobenzene was above the acceptance criteria on the confirmation column; however, the sample was non-detect. Due to the high internal standard

Project Name: LMC WILMINGTON
Project Number: 1121C03346

Lab Number: L1112155
Report Date: 08/18/11

Case Narrative (continued)

response, the surrogate recoveries for L1112155-03 are outside the individual acceptance criteria for 2,4,5,6-Tetrachloro-m-xylene (8%) and Decachlorobiphenyl (13%) on the confirmation column.

TCLP Herbicides

The surrogate recoveries for the following LCS samples are outside the individual acceptance criteria for DCAA, but within the overall method allowances. The results of the original analyses are reported.

WG484424-2: 22%

WG484425-2: 22%

Chemical Oxygen Demand

L1112155-03 has an elevated detection limit due to the dilution required to quantitate the result within the calibration range.

Oil & Grease

The WG484656-3 MS recovery, performed on L1112155-03, is below the acceptance criteria (44%); however, the associated LCS recovery was within criteria. No further action was taken.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Lisa Westerlind

Title: Technical Director/Representative

Date: 08/18/11

Project Name: LMC WILMINGTON
Project Number: 1121C03346

Lab Number: L1112155
Report Date: 08/18/11

SAMPLE RESULTS

Lab ID: L1112155-04
Client ID: LMC-WC-SO-1
Sample Location: 50 FORDHAM RD. WILMINGTON, MA
Matrix: Soil
Analytical Method: 1,8260B
Analytical Date: 08/18/11 10:38
Analyst: MM
Percent Solids: 95%
TCLP/SPLP Ext. Date: 08/16/11 15:10

Date Collected: 08/10/11 10:30
Date Received: 08/10/11
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
TCLP Volatiles by EPA 1311 - Westborough Lab						
Chloroform	ND		ug/l	7.5	--	10
Carbon tetrachloride	ND		ug/l	5.0	--	10
Tetrachloroethene	ND		ug/l	5.0	--	10
Chlorobenzene	ND		ug/l	5.0	--	10
1,2-Dichloroethane	ND		ug/l	5.0	--	10
Benzene	ND		ug/l	5.0	--	10
Vinyl chloride	ND		ug/l	10	--	10
1,1-Dichloroethene	ND		ug/l	5.0	--	10
Trichloroethene	ND		ug/l	5.0	--	10
1,4-Dichlorobenzene	ND		ug/l	25	--	10
2-Butanone	ND		ug/l	50	--	10

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	107		70-130
Toluene-d8	98		70-130
4-Bromofluorobenzene	96		70-130
Dibromofluoromethane	103		70-130

Project Name: LMC WILMINGTON
Project Number: 1121C03346

Lab Number: L1112155
Report Date: 08/18/11

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260B
Analytical Date: 08/18/11 06:58
Analyst: MM
TCLP Extraction Date: 08/16/11 15:10

Extraction Date: 08/16/11 15:10

Parameter	Result	Qualifier	Units	RL	MDL
TCLP Volatiles by EPA 1311 - Westborough Lab for sample(s): 01-04 Batch: WG485248-3					
Chloroform	ND		ug/l	7.5	--
Carbon tetrachloride	ND		ug/l	5.0	--
Tetrachloroethene	ND		ug/l	5.0	--
Chlorobenzene	ND		ug/l	5.0	--
1,2-Dichloroethane	ND		ug/l	5.0	--
Benzene	ND		ug/l	5.0	--
Vinyl chloride	ND		ug/l	10	--
1,1-Dichloroethene	ND		ug/l	5.0	--
Trichloroethene	ND		ug/l	5.0	--
1,4-Dichlorobenzene	ND		ug/l	25	--
2-Butanone	ND		ug/l	50	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	102		70-130
Toluene-d8	101		70-130
4-Bromofluorobenzene	101		70-130
Dibromofluoromethane	100		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: LMC WILMINGTON
Project Number: 1121C03346

Lab Number: L1112155
Report Date: 08/18/11

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
TCLP Volatiles by EPA 1311 - Westborough Lab	Associated sample(s): 01-04		Batch: WG485248-1		WG485248-2			
Chloroform	88		91		75-125	3		20
Carbon tetrachloride	76		65		63-132	16		20
Tetrachloroethene	91		91		70-130	0		20
Chlorobenzene	85		88		75-130	3		25
1,2-Dichloroethane	89		92		71-125	3		20
Benzene	91		95		76-127	4		25
Vinyl chloride	92		96		55-140	4		20
1,1-Dichloroethene	88		92		61-145	4		25
Trichloroethene	88		88		71-120	0		25
1,4-Dichlorobenzene	88		91		75-125	3		20
2-Butanone	93		105		63-138	12		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	99		102		70-130
Toluene-d8	101		101		70-130
4-Bromofluorobenzene	99		99		70-130
Dibromofluoromethane	98		95		70-130

Project Name: LMC WILMINGTON
Project Number: 1121C03346

Lab Number: L1112155
Report Date: 08/18/11

SAMPLE RESULTS

Lab ID:	L1112155-04
Client ID:	LMC-WC-SO-1
Sample Location:	50 FORDHAM RD. WILMINGTON, MA
Matrix:	Soil
Analytical Method:	1,8270C
Analytical Date:	08/15/11 20:41
Analyst:	JB
Percent Solids:	95%
TCLP/SPLP Ext. Date:	08/11/11 16:15

Date Collected:	08/10/11 10:30
Date Received:	08/10/11
Field Prep:	Not Specified
Extraction Method:	EPA 3510C
Extraction Date:	08/13/11 18:38

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
TCLP Semivolatiles by EPA 1311 - Westborough Lab						
Hexachlorobenzene	ND		ug/l	10	--	1
2,4-Dinitrotoluene	ND		ug/l	25	--	1
Hexachlorobutadiene	ND		ug/l	10	--	1
Hexachloroethane	ND		ug/l	10	--	1
Nitrobenzene	ND		ug/l	10	--	1
2,4,6-Trichlorophenol	ND		ug/l	25	--	1
Pentachlorophenol	ND		ug/l	50	--	1
2-Methylphenol	ND		ug/l	25	--	1
3-Methylphenol/4-Methylphenol	ND		ug/l	25	--	1
2,4,5-Trichlorophenol	ND		ug/l	25	--	1
Pyridine	ND		ug/l	25	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	52		21-120
Phenol-d6	45		10-120
Nitrobenzene-d5	65		23-120
2-Fluorobiphenyl	71		15-120
2,4,6-Tribromophenol	89		10-120
4-Terphenyl-d14	99		33-120

Project Name: LMC WILMINGTON
Project Number: 1121C03346

Lab Number: L1112155
Report Date: 08/18/11

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270C
Analytical Date: 08/15/11 18:22
Analyst: JB
TCLP Extraction Date: 08/11/11 16:15

Extraction Method: EPA 3510C
Extraction Date: 08/13/11 18:38

Parameter	Result	Qualifier	Units	RL	MDL
TCLP Semivolatiles by EPA 1311 - Westborough Lab for sample(s): 01-04 Batch: WG484436-1					
Hexachlorobenzene	ND		ug/l	10	--
2,4-Dinitrotoluene	ND		ug/l	25	--
Hexachlorobutadiene	ND		ug/l	10	--
Hexachloroethane	ND		ug/l	10	--
Nitrobenzene	ND		ug/l	10	--
2,4,6-Trichlorophenol	ND		ug/l	25	--
Pentachlorophenol	ND		ug/l	50	--
2-Methylphenol	ND		ug/l	25	--
3-Methylphenol/4-Methylphenol	ND		ug/l	25	--
2,4,5-Trichlorophenol	ND		ug/l	25	--
Pyridine	ND		ug/l	25	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	68		21-120
Phenol-d6	63		10-120
Nitrobenzene-d5	83		23-120
2-Fluorobiphenyl	89		15-120
2,4,6-Tribromophenol	120		10-120
4-Terphenyl-d14	118		33-120

Lab Control Sample Analysis
Batch Quality Control

Project Name: LMC WILMINGTON
Project Number: 1121C03346

Lab Number: L1112155
Report Date: 08/18/11

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
TCLP Semivolatiles by EPA 1311 - Westborough Lab Associated sample(s): 01-04 Batch: WG484436-2 WG484436-3								
Hexachlorobenzene	107		114		40-140	6		30
2,4-Dinitrotoluene	99		102		48-136	3		30
Hexachlorobutadiene	99		103		22-116	4		30
Hexachloroethane	72		78		19-108	8		30
Nitrobenzene	80		86		26-125	7		30
2,4,6-Trichlorophenol	114		118		38-128	3		30
Pentachlorophenol	108		116		39-127	7		30
2-Methylphenol	76		81		30-121	6		30
3-Methylphenol/4-Methylphenol	76		83		32-114	9		30
2,4,5-Trichlorophenol	114		122		44-132	7		30
Pyridine	26		21		0-100	21		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	65		74		21-120
Phenol-d6	66		75		10-120
Nitrobenzene-d5	80		89		23-120
2-Fluorobiphenyl	90		98		15-120
2,4,6-Tribromophenol	113		118		10-120
4-Terphenyl-d14	109		115		33-120

Project Name: LMC WILMINGTON
Project Number: 1121C03346

Lab Number: L1112155
Report Date: 08/18/11

SAMPLE RESULTS

Lab ID: L1112155-04
Client ID: LMC-WC-SO-1
Sample Location: 50 FORDHAM RD., WILMINGTON, MA
Matrix: Soil
Analytical Method: 1,8082
Analytical Date: 08/12/11 18:05
Analyst: KB
Percent Solids: 95%

Date Collected: 08/10/11 10:30
Date Received: 08/10/11
Field Prep: Not Specified
Extraction Method: EPA 3546
Extraction Date: 08/11/11 15:01
Cleanup Method1: EPA 3665A
Cleanup Date1: 08/12/11
Cleanup Method2: EPA 3660B
Cleanup Date2: 08/12/11

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PCB by GC - Westborough Lab						
Aroclor 1016	ND		ug/kg	34.5	--	1
Aroclor 1221	ND		ug/kg	34.5	--	1
Aroclor 1232	ND		ug/kg	34.5	--	1
Aroclor 1242	ND		ug/kg	34.5	--	1
Aroclor 1248	ND		ug/kg	34.5	--	1
Aroclor 1254	ND		ug/kg	34.5	--	1
Aroclor 1260	ND		ug/kg	34.5	--	1
Aroclor 1262	ND		ug/kg	34.5	--	1
Aroclor 1268	ND		ug/kg	34.5	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2,4,5,6-Tetrachloro-m-xylene	86		30-150
Decachlorobiphenyl	70		30-150
2,4,5,6-Tetrachloro-m-xylene	97		30-150
Decachlorobiphenyl	79		30-150

Project Name: LMC WILMINGTON
Project Number: 1121C03346

Lab Number: L1112155
Report Date: 08/18/11

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8082
Analytical Date: 08/12/11 09:42
Analyst: KB

Extraction Method: EPA 3546
Extraction Date: 08/11/11 15:01
Cleanup Method1: EPA 3665A
Cleanup Date1: 08/12/11
Cleanup Method2: EPA 3660B
Cleanup Date2: 08/12/11

Parameter	Result	Qualifier	Units	RL	MDL
PCB by GC - Westborough Lab for sample(s): 04 Batch: WG484099-1					
Aroclor 1016	ND		ug/kg	33.3	--
Aroclor 1221	ND		ug/kg	33.3	--
Aroclor 1232	ND		ug/kg	33.3	--
Aroclor 1242	ND		ug/kg	33.3	--
Aroclor 1248	ND		ug/kg	33.3	--
Aroclor 1254	ND		ug/kg	33.3	--
Aroclor 1260	ND		ug/kg	33.3	--
Aroclor 1262	ND		ug/kg	33.3	--
Aroclor 1268	ND		ug/kg	33.3	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2,4,5,6-Tetrachloro-m-xylene	85		30-150
Decachlorobiphenyl	63		30-150
2,4,5,6-Tetrachloro-m-xylene	90		30-150
Decachlorobiphenyl	78		30-150

Project Name: LMC WILMINGTON
Project Number: 1121C03346

Lab Number: L1112155
Report Date: 08/18/11

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8082
Analytical Date: 08/15/11 17:11
Analyst: KB

Extraction Method: EPA 3540C
Extraction Date: 08/12/11 05:10
Cleanup Method1: EPA 3665A
Cleanup Date1: 08/14/11
Cleanup Method2: EPA 3660B
Cleanup Date2: 08/14/11

Parameter	Result	Qualifier	Units	RL	MDL
PCB by GC - Westborough Lab for sample(s): 01-03 Batch: WG484211-1					
Aroclor 1016	ND		ug/kg	60.0	--
Aroclor 1221	ND		ug/kg	60.0	--
Aroclor 1232	ND		ug/kg	60.0	--
Aroclor 1242	ND		ug/kg	60.0	--
Aroclor 1248	ND		ug/kg	40.0	--
Aroclor 1254	ND		ug/kg	60.0	--
Aroclor 1260	ND		ug/kg	40.0	--
Aroclor 1262	ND		ug/kg	20.0	--
Aroclor 1268	ND		ug/kg	20.0	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2,4,5,6-Tetrachloro-m-xylene	83		30-150
Decachlorobiphenyl	87		30-150
2,4,5,6-Tetrachloro-m-xylene	90		30-150
Decachlorobiphenyl	81		30-150

Lab Control Sample Analysis
Batch Quality Control

Project Name: LMC WILMINGTON
Project Number: 1121C03346

Lab Number: L1112155
Report Date: 08/18/11

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
PCB by GC - Westborough Lab Associated sample(s): 04 Batch: WG484099-2 WG484099-3								
Aroclor 1016	99		86		40-140	14		50
Aroclor 1260	101		88		40-140	14		50

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2,4,5,6-Tetrachloro-m-xylene	87		82		30-150
Decachlorobiphenyl	67		64		30-150
2,4,5,6-Tetrachloro-m-xylene	91		86		30-150
Decachlorobiphenyl	84		80		30-150

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
PCB by GC - Westborough Lab Associated sample(s): 01-03 Batch: WG484211-2 WG484211-3								
Aroclor 1016	100		111		40-140	10		50
Aroclor 1260	99		108		40-140	9		50

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2,4,5,6-Tetrachloro-m-xylene	93		97		30-150
Decachlorobiphenyl	94		107		30-150
2,4,5,6-Tetrachloro-m-xylene	91		102		30-150
Decachlorobiphenyl	88		97		30-150

Project Name: LMC WILMINGTON
Project Number: 1121C03346

Lab Number: L1112155
Report Date: 08/18/11

SAMPLE RESULTS

Lab ID:	L1112155-04
Client ID:	LMC-WC-SO-1
Sample Location:	50 FORDHAM RD. WILMINGTON, MA
Matrix:	Soil
Analytical Method:	1,8082/8081
Analytical Date:	08/18/11 02:06
Analyst:	SH
Percent Solids:	95%
TCLP/SPLP Ext. Date:	08/11/11 16:15

Date Collected:	08/10/11 10:30
Date Received:	08/10/11
Field Prep:	Not Specified
Extraction Method:	EPA 3510C
Extraction Date:	08/13/11 18:51
Cleanup Method1:	EPA 3620B
Cleanup Date1:	08/15/11

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
TCLP Pesticides by EPA 1311 - Westborough Lab						
Lindane	ND		ug/l	0.100	--	1
Heptachlor	ND		ug/l	0.100	--	1
Heptachlor epoxide	ND		ug/l	0.100	--	1
Endrin	ND		ug/l	0.200	--	1
Methoxychlor	ND		ug/l	1.00	--	1
Toxaphene	ND		ug/l	1.00	--	1
Chlordane	ND		ug/l	1.00	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	55		30-150	A
Decachlorobiphenyl	48		30-150	A
2,4,5,6-Tetrachloro-m-xylene	37		30-150	B
Decachlorobiphenyl	96		30-150	B

Project Name: LMC WILMINGTON
Project Number: 1121C03346

Lab Number: L1112155
Report Date: 08/18/11

SAMPLE RESULTS

Lab ID:	L1112155-04
Client ID:	LMC-WC-SO-1
Sample Location:	50 FORDHAM RD, WILMINGTON, MA
Matrix:	Soil
Analytical Method:	1,8151A(M)
Analytical Date:	08/14/11 11:15
Analyst:	SH
Percent Solids:	95%
TCLP/SPLP Ext. Date:	08/11/11 16:15

Date Collected:	08/10/11 10:30
Date Received:	08/10/11
Field Prep:	Not Specified
Extraction Method:	EPA 8151A
Extraction Date:	08/13/11 02:42
Methylation Date:	08/13/11 09:03

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
TCLP Herbicides by EPA 1311 - Westborough Lab						
2,4-D	ND		mg/l	0.025	--	1
2,4,5-TP (Silvex)	ND		mg/l	0.005	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
DCAA	41		30-150	A
DCAA	48		30-150	B

Project Name: LMC WILMINGTON
Project Number: 1121C03346

Lab Number: L1112155
Report Date: 08/18/11

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8151A(M)
Analytical Date: 08/14/11 11:35
Analyst: SH
TCLP Extraction Date: 08/11/11 16:15

Extraction Method: EPA 8151A
Extraction Date: 08/13/11 02:36

Methylation Date: 08/13/11 09:00

Parameter	Result	Qualifier	Units	RL	MDL
TCLP Herbicides by EPA 1311 - Westborough Lab for sample(s): 01-03 Batch: WG484424-1					
2,4-D	ND		mg/l	0.025	--
2,4,5-TP (Silvex)	ND		mg/l	0.005	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria	Column
DCAA	49		30-150	A
DCAA	46		30-150	B

Project Name: LMC WILMINGTON
Project Number: 1121C03346

Lab Number: L1112155
Report Date: 08/18/11

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8151A(M)
Analytical Date: 08/14/11 11:35
Analyst: SH
TCLP Extraction Date: 08/11/11 16:15

Extraction Method: EPA 8151A
Extraction Date: 08/13/11 02:42

Methylation Date: 08/13/11 09:03

Parameter	Result	Qualifier	Units	RL	MDL
TCLP Herbicides by EPA 1311 - Westborough Lab for sample(s): 04 Batch: WG484425-1					
2,4-D	ND		mg/l	0.025	--
2,4,5-TP (Silvex)	ND		mg/l	0.005	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria	Column
DCAA	49		30-150	A
DCAA	46		30-150	B

Project Name: LMC WILMINGTON
Project Number: 1121C03346

Lab Number: L1112155
Report Date: 08/18/11

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8082/8081
Analytical Date: 08/18/11 02:19
Analyst: SH
TCLP Extraction Date: 08/11/11 16:15

Extraction Method: EPA 3510C
Extraction Date: 08/13/11 18:33
Cleanup Method1: EPA 3620B
Cleanup Date1: 08/15/11

Parameter	Result	Qualifier	Units	RL	MDL
TCLP Pesticides by EPA 1311 - Westborough Lab for sample(s): 01-03 Batch: WG484437-1					
Lindane	ND		ug/l	0.100	--
Heptachlor	ND		ug/l	0.100	--
Heptachlor epoxide	ND		ug/l	0.100	--
Endrin	ND		ug/l	0.200	--
Methoxychlor	ND		ug/l	1.00	--
Toxaphene	ND		ug/l	1.00	--
Chlordane	ND		ug/l	1.00	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	66		30-150	A
Decachlorobiphenyl	39		30-150	A
2,4,5,6-Tetrachloro-m-xylene	44		30-150	B
Decachlorobiphenyl	65		30-150	B

Project Name: LMC WILMINGTON
Project Number: 1121C03346

Lab Number: L1112155
Report Date: 08/18/11

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8082/8081
Analytical Date: 08/18/11 02:19
Analyst: SH
TCLP Extraction Date: 08/11/11 16:15

Extraction Method: EPA 3510C
Extraction Date: 08/13/11 18:51
Cleanup Method1: EPA 3620B
Cleanup Date1: 08/15/11

Parameter	Result	Qualifier	Units	RL	MDL
TCLP Pesticides by EPA 1311 - Westborough Lab for sample(s): 04 Batch: WG485190-1					
Lindane	ND		ug/l	0.100	--
Heptachlor	ND		ug/l	0.100	--
Heptachlor epoxide	ND		ug/l	0.100	--
Endrin	ND		ug/l	0.200	--
Methoxychlor	ND		ug/l	1.00	--
Toxaphene	ND		ug/l	1.00	--
Chlordane	ND		ug/l	1.00	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	66		30-150	A
Decachlorobiphenyl	39		30-150	A
2,4,5,6-Tetrachloro-m-xylene	44		30-150	B
Decachlorobiphenyl	65		30-150	B

Lab Control Sample Analysis
Batch Quality Control

Project Name: LMC WILMINGTON
Project Number: 1121C03346

Lab Number: L1112155
Report Date: 08/18/11

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
TCLP Herbicides by EPA 1311 - Westborough Lab Associated sample(s): 01-03 Batch: WG484424-2 WG484424-3								
2,4-D	101		106		30-150	5		25
2,4,5-TP (Silvex)	36		43		30-150	18		25

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria	Column
DCAA	22	Q	39		30-150	A
DCAA	39		47		30-150	B

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
TCLP Herbicides by EPA 1311 - Westborough Lab Associated sample(s): 04 Batch: WG484425-2 WG484425-3								
2,4-D	101		106		30-150	5		25
2,4,5-TP (Silvex)	36		43		30-150	18		25

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria	Column
DCAA	22	Q	39		30-150	A
DCAA	39		47		30-150	B

Lab Control Sample Analysis
Batch Quality Control

Project Name: LMC WILMINGTON
Project Number: 1121C03346

Lab Number: L1112155
Report Date: 08/18/11

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
TCLP Pesticides by EPA 1311 - Westborough Lab Associated sample(s): 01-03 Batch: WG484437-2 WG484437-3								
Lindane	57		52		30-150	10		20
Heptachlor	63		58		30-150	9		20
Heptachlor epoxide	61		56		30-150	9		20
Endrin	63		57		30-150	9		20
Methoxychlor	72		61		30-150	16		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	61		55		30-150	A
Decachlorobiphenyl	43		38		30-150	A
2,4,5,6-Tetrachloro-m-xylene	39		37		30-150	B
Decachlorobiphenyl	63		122		30-150	B

Lab Control Sample Analysis
Batch Quality Control

Project Name: LMC WILMINGTON
Project Number: 1121C03346

Lab Number: L1112155
Report Date: 08/18/11

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
TCLP Pesticides by EPA 1311 - Westborough Lab Associated sample(s): 04 Batch: WG485190-2 WG485190-3								
Lindane	57		52		30-150	10		20
Heptachlor	63		58		30-150	9		20
Heptachlor epoxide	61		56		30-150	9		20
Endrin	63		57		30-150	9		20
Methoxychlor	72		61		30-150	16		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	61		55		30-150	A
Decachlorobiphenyl	43		38		30-150	A
2,4,5,6-Tetrachloro-m-xylene	39		37		30-150	B
Decachlorobiphenyl	63		122		30-150	B

Project Name: LMC WILMINGTON
Project Number: 1121C03346

Lab Number: L1112155
Report Date: 08/18/11

SAMPLE RESULTS

Lab ID: L1112155-04
Client ID: LMC-WC-SO-1
Sample Location: 50 FORDHAM RD. WILMINGTON, MA
Matrix: Soil
Percent Solids: 95%

Date Collected: 08/10/11 10:30
Date Received: 08/10/11
Field Prep: Not Specified
TCLP/SPLP Ext. Date: 08/11/11 16:15

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
TCLP Metals by EPA 1311 - Westborough Lab											
Arsenic, TCLP	ND		mg/l	1.0	--	1	08/16/11 14:00	08/17/11 11:50	EPA 3015	1,6010B	AI
Barium, TCLP	ND		mg/l	0.50	--	1	08/16/11 14:00	08/17/11 11:50	EPA 3015	1,6010B	AI
Cadmium, TCLP	ND		mg/l	0.10	--	1	08/16/11 14:00	08/17/11 11:50	EPA 3015	1,6010B	AI
Chromium, TCLP	ND		mg/l	0.20	--	1	08/16/11 14:00	08/17/11 11:50	EPA 3015	1,6010B	AI
Lead, TCLP	ND		mg/l	0.50	--	1	08/16/11 14:00	08/17/11 11:50	EPA 3015	1,6010B	AI
Mercury, TCLP	ND		mg/l	0.0010	--	1	08/15/11 17:00	08/16/11 10:23	EPA 7470A	1,7470A	JP
Selenium, TCLP	ND		mg/l	0.50	--	1	08/16/11 14:00	08/17/11 11:50	EPA 3015	1,6010B	AI
Silver, TCLP	ND		mg/l	0.10	--	1	08/16/11 14:00	08/17/11 11:50	EPA 3015	1,6010B	AI

ALPHA ANALYTICAL

Project Name: LMC WILMINGTON
Project Number: 1121C03346

Lab Number: L1112155
Report Date: 08/18/11

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
TCLP Metals by EPA 1311 - Westborough Lab for sample(s): 03 Batch: WG484506-1										
Mercury, TCLP	ND		mg/l	0.0010	--	1	08/13/11 16:00	08/14/11 08:34	1,7470A	JP

Prep Information

Digestion Method: EPA 7470A
TCLP/SPLP Extraction Date: 08/11/11 16:15

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
TCLP Metals by EPA 1311 - Westborough Lab for sample(s): 01-02,04 Batch: WG484648-1										
Mercury, TCLP	ND		mg/l	0.0010	--	1	08/15/11 17:00	08/16/11 10:12	1,7470A	JP

Prep Information

Digestion Method: EPA 7470A
TCLP/SPLP Extraction Date: 08/11/11 16:15

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
TCLP Metals by EPA 1311 - Westborough Lab for sample(s): 01-04 Batch: WG484845-1										
Barium, TCLP	ND		mg/l	0.50	--	1	08/16/11 14:00	08/17/11 11:09	1,6010B	AI
Lead, TCLP	ND		mg/l	0.50	--	1	08/16/11 14:00	08/17/11 11:09	1,6010B	AI

Prep Information

Digestion Method: EPA 3015
TCLP/SPLP Extraction Date: 08/11/11 16:15

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
TCLP Metals by EPA 1311 - Westborough Lab for sample(s): 01-04 Batch: WG484845-1										
Arsenic, TCLP	ND		mg/l	1.0	--	1	08/16/11 14:00	08/17/11 11:09	1,6010B	AI
Cadmium, TCLP	ND		mg/l	0.10	--	1	08/16/11 14:00	08/17/11 11:09	1,6010B	AI
Chromium, TCLP	ND		mg/l	0.20	--	1	08/16/11 14:00	08/17/11 11:09	1,6010B	AI
Selenium, TCLP	ND		mg/l	0.50	--	1	08/16/11 14:00	08/17/11 11:09	1,6010B	AI
Silver, TCLP	ND		mg/l	0.10	--	1	08/16/11 14:00	08/17/11 11:09	1,6010B	AI

Project Name: LMC WILMINGTON
Project Number: 1121C03346

Lab Number: L1112155
Report Date: 08/18/11

Method Blank Analysis
Batch Quality Control

Prep Information

Digestion Method: EPA 3015
TCLP/SPLP Extraction Date: 08/11/11 16:15

Lab Control Sample Analysis
Batch Quality Control

Project Name: LMC WILMINGTON
Project Number: 1121C03346

Lab Number: L1112155
Report Date: 08/18/11

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
TCLP Metals by EPA 1311 - Westborough Lab	Associated sample(s): 03		Batch: WG484506-2					
Mercury, TCLP	96		-		80-120	-		
TCLP Metals by EPA 1311 - Westborough Lab	Associated sample(s): 01-02,04		Batch: WG484648-2					
Mercury, TCLP	96		-		80-120	-		
TCLP Metals by EPA 1311 - Westborough Lab	Associated sample(s): 01-04		Batch: WG484845-2					
Arsenic, TCLP	100		-		75-125	-		20
Barium, TCLP	97		-		75-125	-		20
Cadmium, TCLP	100		-		75-125	-		20
Chromium, TCLP	98		-		75-125	-		20
Lead, TCLP	97		-		75-125	-		20
Selenium, TCLP	105		-		75-125	-		20
Silver, TCLP	97		-		75-125	-		20

Matrix Spike Analysis
Batch Quality Control

Project Name: LMC WILMINGTON
Project Number: 1121C03346

Lab Number: L1112155
Report Date: 08/18/11

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
TCLP Metals by EPA 1311 - Westborough Lab Associated sample(s): 03 QC Batch ID: WG484506-4 QC Sample: L1112291-20 Client ID: MS Sample												
Mercury, TCLP	ND	0.005	0.0059	118		-	-		70-130	-		20
TCLP Metals by EPA 1311 - Westborough Lab Associated sample(s): 01-02,04 QC Batch ID: WG484648-4 QC Sample: L1112155-01 Client ID: LMC-WC-CONCRETE-C-1												
Mercury, TCLP	ND	0.005	0.0061	122		-	-		70-130	-		20
TCLP Metals by EPA 1311 - Westborough Lab Associated sample(s): 01-04 QC Batch ID: WG484845-4 QC Sample: L1112155-01 Client ID: LMC-WC-CONCRETE-C-1												
Arsenic, TCLP	ND	10	10	100		-	-		75-125	-		20
Barium, TCLP	ND	100	98	98		-	-		75-125	-		20
Cadmium, TCLP	ND	10	10	100		-	-		75-125	-		20
Chromium, TCLP	ND	10	9.9	99		-	-		75-125	-		20
Lead, TCLP	ND	10	9.6	96		-	-		75-125	-		20
Selenium, TCLP	ND	20	21	105		-	-		75-125	-		20
Silver, TCLP	ND	10	9.0	90		-	-		75-125	-		20

Project Name: LMC WILMINGTON
Project Number: 1121C03346

Lab Duplicate Analysis
Batch Quality Control

Lab Number: L1112155
Report Date: 08/18/11

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
TCLP Metals by EPA 1311 - Westborough Lab Associated sample(s): 03 QC Batch ID: WG484506-3 QC Sample: L1112291-20 Client ID: DUP Sample						
Mercury, TCLP	ND	ND	mg/l	NC		20
TCLP Metals by EPA 1311 - Westborough Lab Associated sample(s): 01-02,04 QC Batch ID: WG484648-3 QC Sample: L1112155-01 Client ID: LMC-WC-CONCRETE-C-1						
Mercury, TCLP	ND	ND	mg/l	NC		20
TCLP Metals by EPA 1311 - Westborough Lab Associated sample(s): 01-04 QC Batch ID: WG484845-3 QC Sample: L1112155-01 Client ID: LMC-WC-CONCRETE-C-1						
Arsenic, TCLP	ND	ND	mg/l	NC		20
Barium, TCLP	ND	ND	mg/l	NC		20
Cadmium, TCLP	ND	ND	mg/l	NC		20
Chromium, TCLP	ND	ND	mg/l	NC		20
Lead, TCLP	ND	ND	mg/l	NC		20
Selenium, TCLP	ND	ND	mg/l	NC		20
Silver, TCLP	ND	ND	mg/l	NC		20

Project Name: LMC WILMINGTON
Project Number: 1121C03346

Lab Number: L1112155
Report Date: 08/18/11

SAMPLE RESULTS

Lab ID: L1112155-04
Client ID: LMC-WC-SO-1
Sample Location: 50 FORDHAM RD. WILMINGTON, MA
Matrix: Soil

Date Collected: 08/10/11 10:30
Date Received: 08/10/11
Field Prep: Not Specified

Test Material Information

Source of Material:	Unknown
Description of Material:	Non-Metallic - Damp Soil
Particle Size:	Medium
Preliminary Burning Time (sec):	120

Parameter	Result	Date Analyzed	Analytical Method	Analyst
Ignitability of Solids - Westborough Lab				
Ignitability	NI	08/15/11 15:20	1,1030	TL

Project Name: LMC WILMINGTON
Project Number: 1121C03346

Lab Number: L1112155
Report Date: 08/18/11

SAMPLE RESULTS

Lab ID: L1112155-04
Client ID: LMC-WC-SO-1
Sample Location: 50 FORDHAM RD. WILMINGTON, MA
Matrix: Soil

Date Collected: 08/10/11 10:30
Date Received: 08/10/11
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	95		%	0.10	NA	1	-	08/10/11 23:31	30,2540G	RD
Solids, Total Volatile	0.80		%	0.10	--	1	-	08/11/11 14:15	30,2540E	DW
pH	8.9		SU	-	NA	1	-	08/10/11 22:45	1,9045C	KK
Nitrogen, Ammonia	23		mg/kg	7.8	--	1	08/12/11 11:00	08/15/11 20:54	30,4500NH3-BH	AT
Oil & Grease, Hem-Grav	78.4		mg/kg	46.3	--	1.1	08/16/11 12:00	08/17/11 12:00	1,9071B	JO
Cyanide, Reactive	ND		mg/kg	10	--	1	08/11/11 14:45	08/11/11 19:07	1,7.3	TL
Sulfide, Reactive	ND		mg/kg	10	--	1	08/11/11 14:45	08/11/11 19:20	1,7.3	TL
Paint Filter Liquid	NEGATIVE		-	0	NA	1	-	08/16/11 14:00	1,9095A	ST
General Chemistry										
Chemical Oxygen Demand	1500		mg/kg	190	--	1	-	08/15/11 07:45	30,5220-M	DW

Project Name: LMC WILMINGTON
Project Number: 1121C03346

Lab Number: L1112155
Report Date: 08/18/11

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab for sample(s): 01-03 Batch: WG483987-1										
Solids, Total Volatile	ND		%	0.10	--	1	-	08/11/11 14:15	30,2540E	DW
General Chemistry - Westborough Lab for sample(s): 04 Batch: WG483988-1										
Solids, Total Volatile	ND		%	0.10	--	1	-	08/11/11 14:15	30,2540E	DW
General Chemistry - Westborough Lab for sample(s): 04 Batch: WG484082-1										
Cyanide, Reactive	ND		mg/kg	10	--	1	08/11/11 14:45	08/11/11 19:04	1,7.3	TL
General Chemistry - Westborough Lab for sample(s): 04 Batch: WG484083-1										
Sulfide, Reactive	ND		mg/kg	10	--	1	08/11/11 14:45	08/11/11 19:13	1,7.3	TL
General Chemistry - Westborough Lab for sample(s): 01-03 Batch: WG484084-1										
Cyanide, Reactive	ND		mg/kg	10	--	1	08/11/11 14:45	08/11/11 19:04	1,7.3	TL
General Chemistry - Westborough Lab for sample(s): 01-03 Batch: WG484085-1										
Sulfide, Reactive	ND		mg/kg	10	--	1	08/11/11 14:45	08/11/11 19:13	1,7.3	TL
General Chemistry - Westborough Lab for sample(s): 01-03 Batch: WG484239-1										
Nitrogen, Ammonia	ND		mg/kg	7.5	--	1	08/12/11 11:00	08/15/11 20:48	30,4500NH3-BH	AT
General Chemistry - Westborough Lab for sample(s): 04 Batch: WG484240-1										
Nitrogen, Ammonia	ND		mg/kg	7.5	--	1	08/12/11 11:00	08/15/11 20:49	30,4500NH3-BH	AT
General Chemistry for sample(s): 01-03 Batch: WG484566-1										
Chemical Oxygen Demand	ND		mg/kg	200	--	1	-	08/15/11 07:45	30,5220-M	DW
General Chemistry for sample(s): 04 Batch: WG484567-1										
Chemical Oxygen Demand	ND		mg/kg	200	--	1	-	08/15/11 07:45	30,5220-M	DW
General Chemistry - Westborough Lab for sample(s): 01-03 Batch: WG484656-2										
Oil & Grease, Hem-Grav	ND		mg/kg	40.0	--	1	08/16/11 12:00	08/17/11 12:00	1,9071B	JO
General Chemistry - Westborough Lab for sample(s): 04 Batch: WG484657-2										
Oil & Grease, Hem-Grav	ND		mg/kg	40.0	--	1	08/16/11 12:00	08/17/11 12:00	1,9071B	JO

Lab Control Sample Analysis
Batch Quality Control

Project Name: LMC WILMINGTON
Project Number: 1121C03346

Lab Number: L1112155
Report Date: 08/18/11

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 04 Batch: WG483937-1								
pH	100		-		99-101	-		
General Chemistry - Westborough Lab Associated sample(s): 01-03 Batch: WG483955-1								
pH	100		-		99-101	-		
General Chemistry - Westborough Lab Associated sample(s): 04 Batch: WG484082-2								
Cyanide, Reactive	87		-		30-125	-		40
General Chemistry - Westborough Lab Associated sample(s): 04 Batch: WG484083-2								
Sulfide, Reactive	103		-		60-125	-		40
General Chemistry - Westborough Lab Associated sample(s): 01-03 Batch: WG484084-2								
Cyanide, Reactive	87		-		30-125	-		40
General Chemistry - Westborough Lab Associated sample(s): 01-03 Batch: WG484085-2								
Sulfide, Reactive	103		-		60-125	-		40
General Chemistry - Westborough Lab Associated sample(s): 01-03 Batch: WG484239-2								
Nitrogen, Ammonia	93		-		83-115	-		20

Lab Control Sample Analysis
Batch Quality Control

Project Name: LMC WILMINGTON
Project Number: 1121C03346

Lab Number: L1112155
Report Date: 08/18/11

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 04 Batch: WG484240-2					
Nitrogen, Ammonia	94	-	83-115	-	20
Associated sample(s): 01-03 Batch: WG484566-2					
Chemical Oxygen Demand	100	-		-	
Associated sample(s): 04 Batch: WG484567-2					
Chemical Oxygen Demand	102	-		-	
General Chemistry - Westborough Lab Associated sample(s): 01-03 Batch: WG484656-1					
Oil & Grease, Hem-Grav	89	-	64-132	-	34
General Chemistry - Westborough Lab Associated sample(s): 04 Batch: WG484657-1					
Oil & Grease, Hem-Grav	89	-	64-132	-	34

Matrix Spike Analysis
Batch Quality Control

Project Name: LMC WILMINGTON
Project Number: 1121C03346

Lab Number: L1112155
Report Date: 08/18/11

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-03 CONCRETE-C-1	QC Batch ID: WG484239-4	QC Sample: L1112155-01	Client ID: LMC-WC-									
Nitrogen, Ammonia	8.5	410	360	85		-	-		55-144	-		20
General Chemistry - Westborough Lab Associated sample(s): 04	QC Batch ID: WG484240-4	QC Sample: L1112077-01	Client ID: MS Sample									
Nitrogen, Ammonia	2000	1000	4000	**192**	Q	-	-		55-144	-		20
Associated sample(s): 01-03	QC Batch ID: WG484566-3	QC Sample: L1112155-03	Client ID: LMC-WC-CONCRETE-ST-1									
Chemical Oxygen Demand	13000	414	-	2		-	-			-		
Associated sample(s): 04	QC Batch ID: WG484567-3	QC Sample: L1112155-04	Client ID: LMC-WC-SO-1									
Chemical Oxygen Demand	1500	198	-	103		-	-			-		
General Chemistry - Westborough Lab Associated sample(s): 01-03 CONCRETE-ST-1	QC Batch ID: WG484656-3	QC Sample: L1112155-03	Client ID: LMC-WC-									
Oil & Grease, Hem-Grav	1950	4480	3930	**44**	Q	-	-		64-132	-		34
General Chemistry - Westborough Lab Associated sample(s): 04	QC Batch ID: WG484657-3	QC Sample: L1112155-04	Client ID: LMC-WC-SO-1									
Oil & Grease, Hem-Grav	78.4	4130	4070	97		-	-		64-132	-		34

Project Name: LMC WILMINGTON
Project Number: 1121C03346

Lab Duplicate Analysis
Batch Quality Control

Lab Number: L1112155
Report Date: 08/18/11

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 04 QC Batch ID: WG483937-2 QC Sample: L1112138-01 Client ID: DUP Sample						
pH	8.4	8.4	SU	0		5
General Chemistry - Westborough Lab Associated sample(s): 04 QC Batch ID: WG483948-1 QC Sample: L1112104-01 Client ID: DUP Sample						
Solids, Total	96	97	%	1		20
General Chemistry - Westborough Lab Associated sample(s): 01-03 QC Batch ID: WG483955-2 QC Sample: L1112155-01 Client ID: LMC-WC-CONCRETE-C-1						
pH	11.6	11.7	SU	0		5
General Chemistry - Westborough Lab Associated sample(s): 01-03 QC Batch ID: WG483987-2 QC Sample: L1112155-01 Client ID: LMC-WC-CONCRETE-C-1						
Solids, Total Volatile	4.1	3.5	%	16		
General Chemistry - Westborough Lab Associated sample(s): 04 QC Batch ID: WG483988-2 QC Sample: L1112155-04 Client ID: LMC-WC-SO-1						
Solids, Total Volatile	0.80	0.70	%	13		
General Chemistry - Westborough Lab Associated sample(s): 04 QC Batch ID: WG484082-3 QC Sample: L1112155-04 Client ID: LMC-WC-SO-1						
Cyanide, Reactive	ND	ND	mg/kg	NC		40
General Chemistry - Westborough Lab Associated sample(s): 04 QC Batch ID: WG484083-3 QC Sample: L1112155-04 Client ID: LMC-WC-SO-1						
Sulfide, Reactive	ND	ND	mg/kg	NC		40
General Chemistry - Westborough Lab Associated sample(s): 01-03 QC Batch ID: WG484084-3 QC Sample: L1112155-03 Client ID: LMC-WC-CONCRETE-ST-1						
Cyanide, Reactive	ND	ND	mg/kg	NC		40

Project Name: LMC WILMINGTON
Project Number: 1121C03346

Lab Duplicate Analysis
Batch Quality Control

Lab Number: L1112155
Report Date: 08/18/11

Parameter	Native Sample	Duplicate Sample	Units	RPD		RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-03 QC Batch ID: WG484085-3 QC Sample: L1112155-03 Client ID: LMC-WC-CONCRETE-ST-1						
Sulfide, Reactive	ND	ND	mg/kg	NC		40
General Chemistry - Westborough Lab Associated sample(s): 01-03 QC Batch ID: WG484121-1 QC Sample: L1111606-01 Client ID: DUP Sample						
Solids, Total	95	95	%	0		20
General Chemistry - Westborough Lab Associated sample(s): 01-03 QC Batch ID: WG484239-3 QC Sample: L1112155-01 Client ID: LMC-WC-CONCRETE-C-1						
Nitrogen, Ammonia	8.5	ND	mg/kg	NC		20
General Chemistry - Westborough Lab Associated sample(s): 04 QC Batch ID: WG484240-3 QC Sample: L1112077-01 Client ID: DUP Sample						
Nitrogen, Ammonia	2000	3100	mg/kg	**43**	Q	20
Associated sample(s): 01-03 QC Batch ID: WG484566-4 QC Sample: L1112155-03 Client ID: LMC-WC-CONCRETE-ST-1						
Chemical Oxygen Demand	13000	12000	mg/kg	8		
Associated sample(s): 04 QC Batch ID: WG484567-4 QC Sample: L1112155-04 Client ID: LMC-WC-SO-1						
Chemical Oxygen Demand	1500	2100	mg/kg	33		
General Chemistry - Westborough Lab Associated sample(s): 01-03 QC Batch ID: WG484656-4 QC Sample: L1112155-03 Client ID: LMC-WC-CONCRETE-ST-1						
Oil & Grease, Hem-Grav	1950	1560	mg/kg	22		34
General Chemistry - Westborough Lab Associated sample(s): 04 QC Batch ID: WG484657-4 QC Sample: L1112155-04 Client ID: LMC-WC-SO-1						
Oil & Grease, Hem-Grav	78.4	77.6	mg/kg	1		34

Project Name: LMC WILMINGTON
Project Number: 1121C03346

Lab Number: L1112155
Report Date: 08/18/11

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Reagent H2O Preserved Vials Frozen on: NA

Cooler Information Custody Seal

Cooler	
A	Absent

Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1112155-01A	Vial Large unpreserved	A	N/A	2	Y	Absent	TCLP-EXT-ZHE(14),TCLP-VOA(14)
L1112155-01B	Amber 250ml unpreserved	A	N/A	2	Y	Absent	PCB-8082LL-3540C(14)
L1112155-01C	Amber 250ml unpreserved	A	N/A	2	Y	Absent	-
L1112155-01D	Amber 250ml unpreserved	A	N/A	2	Y	Absent	TCLP-8270(14),HERB-TCLP*(14),PEST-TCLP*(14)
L1112155-01E	Amber 250ml unpreserved	A	N/A	2	Y	Absent	IGNIT-1030(14),REACTS(14),SPECWC(),TS(7),TVS-2540(7),PH-9045(1),PAINTF(),OG-9071(28),REACTCN(14),NH3-4500(28)
L1112155-01X	Plastic 250ml HNO3 preserved spl	NA	NA		Y	Absent	CD-CI(180),AS-CI(180),BA-CI(180),HG-C(28),PB-CI(180),CR-CI(180),SE-CI(180),AG-CI(180)
L1112155-02A	Vial Large unpreserved	A	N/A	2	Y	Absent	TCLP-EXT-ZHE(14),TCLP-VOA(14)
L1112155-02B	Amber 250ml unpreserved	A	N/A	2	Y	Absent	PCB-8082LL-3540C(14)
L1112155-02C	Amber 250ml unpreserved	A	N/A	2	Y	Absent	-
L1112155-02D	Amber 250ml unpreserved	A	N/A	2	Y	Absent	TCLP-8270(14),HERB-TCLP*(14),PEST-TCLP*(14)
L1112155-02E	Amber 250ml unpreserved	A	N/A	2	Y	Absent	IGNIT-1030(14),REACTS(14),SPECWC(),TS(7),TVS-2540(7),PH-9045(1),PAINTF(),OG-9071(28),REACTCN(14),NH3-4500(28)
L1112155-02X	Plastic 250ml HNO3 preserved spl	NA	NA		Y	Absent	CD-CI(180),AS-CI(180),BA-CI(180),HG-C(28),PB-CI(180),CR-CI(180),SE-CI(180),AG-CI(180)
L1112155-03A	Vial Large unpreserved	A	N/A	2	Y	Absent	TCLP-EXT-ZHE(14),TCLP-VOA(14)
L1112155-03B	Amber 250ml unpreserved	A	N/A	2	Y	Absent	PCB-8082LL-3540C(14)
L1112155-03C	Amber 250ml unpreserved	A	N/A	2	Y	Absent	-
L1112155-03D	Amber 250ml unpreserved	A	N/A	2	Y	Absent	TCLP-8270(14),HERB-TCLP*(14),PEST-TCLP*(14)

*Values in parentheses indicate holding time in days

Project Name: LMC WILMINGTON
Project Number: 1121C03346

Lab Number: L1112155
Report Date: 08/18/11

Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1112155-03E	Amber 250ml unpreserved	A	N/A	2	Y	Absent	IGNIT-1030(14),REACTS(14),SPECWC(),TS(7),TVS-2540(7),PH-9045(1),PAINTF(),OG-9071(28),REACTCN(14),NH3-4500(28)
L1112155-03X	Plastic 250ml HNO3 preserved spl	NA	NA		Y	Absent	CD-CI(180),AS-CI(180),BA-CI(180),HG-C(28),PB-CI(180),CR-CI(180),SE-CI(180),AG-CI(180)
L1112155-04A	Vial Large unpreserved	A	N/A	2	Y	Absent	TCLP-EXT-ZHE(14),TCLP-VOA(14)
L1112155-04B	Amber 250ml unpreserved	A	N/A	2	Y	Absent	PCB-8082(14)
L1112155-04C	Amber 250ml unpreserved	A	N/A	2	Y	Absent	-
L1112155-04D	Amber 250ml unpreserved	A	N/A	2	Y	Absent	TCLP-8270(14),HERB-TCLP*(14),PEST-TCLP*(14)
L1112155-04E	Amber 250ml unpreserved	A	N/A	2	Y	Absent	IGNIT-1030(14),REACTS(14),TS(7),TVS-2540(7),PH-9045(1),PAINTF(),OG-9071(28),REACTCN(14),NH3-4500(28)
L1112155-04X	Plastic 250ml HNO3 preserved spl	NA	NA		Y	Absent	CD-CI(180),AS-CI(180),BA-CI(180),HG-C(28),PB-CI(180),CR-CI(180),SE-CI(180),AG-CI(180)

Container Comments

L1112155-04E

*Values in parentheses indicate holding time in days

Project Name: LMC WILMINGTON
Project Number: 1121C03346
Lab Number: L1112155
Report Date: 08/18/11

GLOSSARY

Acronyms

EPA - Environmental Protection Agency.

LCS - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

LFB - Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

MDL - Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

MS - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available.

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

NC - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.

NI - Not Ignitable.

RL - Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

RPD - Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

SRM - Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

Footnotes

1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Data Qualifiers

A - Spectra identified as "Aldol Condensation Product".

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than five times (5x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank.

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The RPD between the results for the two columns exceeds the method-specified criteria; however, the lower value has been reported due to obvious interference.

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less

Project Name: LMC WILMINGTON
Project Number: 1121C03346

Lab Number: L1112155
Report Date: 08/18/11

Data Qualifiers

than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

J - Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

ND - Not detected at the reporting limit (RL) for the sample.

Report Format: Data Usability Report

Project Name: LMC WILMINGTON
Project Number: 1121C03346

Lab Number: L1112155
Report Date: 08/18/11

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - IIIA, 1997.

30 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WPCF. 18th Edition. 1992.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Certificate/Approval Program Summary

Last revised July 28, 2011 - Westboro Facility

The following list includes only those analytes/methods for which certification/approval is currently held.
For a complete listing of analytes for the referenced methods, please contact your Alpha Customer Service Representative.

Connecticut Department of Public Health Certificate/Lab ID: PH-0574. ***NELAP Accredited Solid Waste/Soil.***

Drinking Water (Inorganic Parameters: Color, pH, Turbidity, Conductivity, Alkalinity, Chloride, Free Residual Chlorine, Fluoride, Calcium Hardness, Sulfate, Nitrate, Nitrite, Aluminum, Antimony, Arsenic, Barium, Beryllium, Cadmium, Calcium, Chromium, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Potassium, Selenium, Silver, Sodium, Thallium, Vanadium, Zinc, Total Dissolved Solids, Total Organic Carbon, Total Cyanide, Perchlorate. Organic Parameters: Volatile Organics 524.2, Total Trihalomethanes 524.2, 1,2-Dibromo-3-chloropropane (DBCP), Ethylene Dibromide (EDB), 1,4-Dioxane (Mod 8270). Microbiology Parameters: Total Coliform-MF mEndo (SM9222B), Total Coliform – Colilert (SM9223 P/A), E. Coli. – Colilert (SM9223 P/A), HPC – Pour Plate (SM9215B), Fecal Coliform – MF m-FC (SM9222D))

Wastewater/Non-Potable Water (Inorganic Parameters: Color, pH, Conductivity, Acidity, Alkalinity, Chloride, Total Residual Chlorine, Fluoride, Total Hardness, Silica, Sulfate, Sulfide, Ammonia, Kjeldahl Nitrogen, Nitrate, Nitrite, O-Phosphate, Total Phosphorus, Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Hexavalent Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Potassium, Selenium, Silver, Sodium, Strontium, Thallium, Tin, Titanium, Vanadium, Zinc, Total Residue (Solids), Total Dissolved Solids, Total Suspended Solids (non-filterable), BOD, CBOD, COD, TOC, Total Cyanide, Phenolics, Foaming Agents (MBAS), Bromide, Oil and Grease. Organic Parameters: PCBs, Organochlorine Pesticides, Technical Chlordane, Toxaphene, 2,4-D, 2,4,5-T, 2,4,5-TP(Silvex), Acid Extractables (Phenols), Benzidines, Phthalate Esters, Nitrosamines, Nitroaromatics & Isophorone, Polynuclear Aromatic Hydrocarbons, Haloethers, Chlorinated Hydrocarbons, Volatile Organics, TPH (HEM/SGT), Extractable Petroleum Hydrocarbons (ETPH), MA-EPH, MA-VPH. Microbiology Parameters: Total Coliform – MF mEndo (SM9222B), Total Coliform – MTF (SM9221B), HPC – Pour Plate (SM9215B), Fecal Coliform – MF m-FC (SM9222D), Fecal Coliform – A-1 Broth (SM9221E).)

Solid Waste/Soil (Inorganic Parameters: pH, Sulfide, Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Hexavalent Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Potassium, Selenium, Silver, Sodium, Thallium, Tin, Vanadium, Zinc, Total Cyanide, Ignitability, Phenolics, Corrosivity, TCLP Leach (1311), SPLP Leach (1312 metals only), Reactivity. Organic Parameters: PCBs, PCBs in Oil, Organochlorine Pesticides, Technical Chlordane, Toxaphene, Extractable Petroleum Hydrocarbons (ETPH), MA-EPH, MA-VPH, Dicamba, 2,4-D, 2,4,5-T, 2,4,5-TP(Silvex), Volatile Organics, Acid Extractables (Phenols), 3.3'-Dichlorobenzidine, Phthalates, Nitrosamines, Nitroaromatics & Cyclic Ketones, PAHs, Haloethers, Chlorinated Hydrocarbons.)

Maine Department of Human Services Certificate/Lab ID: 2009024.
Drinking Water (Inorganic Parameters: SM9215B, 9222D, 9223B, EPA 180.1, 353.2, SM2130B, 2320B, 2540C, 4500Cl-D, 4500CN-C, 4500CN-E, 4500F-C, 4500H+B, 4500NO3-F, EPA 200.7, EPA 200.8, 245.1, EPA 300.0. Organic Parameters: 504.1, 524.2.)

Wastewater/Non-Potable Water (Inorganic Parameters: EPA 120.1, 1664A, 350.1, 351.1, 353.2, 410.4, 420.1, SM2320B, 2510B, 2540C, 2540D, 426C, 4500Cl-D, 4500Cl-E, 4500CN-C, 4500CN-E, 4500F-B, 4500F-C, 4500H+B, 4500Norg-B, 4500Norg-C, 4500NH3-B, 4500NH3-G, 4500NH3-H, 4500NO3-F, 4500P-B, 4500P-E, 5210B, 5220D, 5310C, 9010B, 9040B, 9030B, 7470A, 7196A, 2340B, EPA 200.7, 6010, 200.8, 6020, 245.1, 1311, 1312, 3005A, Enterolert, 9223D, 9222D. Organic Parameters: 608, 8081, 8082, 8330, 8151A, 624, 8260, 3510C, 3630C, 5030B, ME-DRO, ME-GRO, MA-EPH, MA-VPH.)

Solid Waste/Soil (Inorganic Parameters: 9010B, 9012A, 9014A, 9040B, 9045C, 6010B, 7471A, 7196A, 9050A, 1010, 1030, 9065, 1311, 1312, 3005A, 3050B. Organic Parameters: ME-DRO, ME-GRO, MA-EPH, MA-VPH, 8260B, 8270C, 8330, 8151A, 8081A, 8082, 3540C, 3546, 3580A, 3630C, 5030B, 5035.)

Massachusetts Department of Environmental Protection Certificate/Lab ID: M-MA086.
Drinking Water (Inorganic Parameters: (EPA 200.8 for: Sb,As,Ba,Be,Cd,Cr,Cu,Pb,Ni,Se,Tl) (EPA 200.7 for: Ba,Be,Ca,Cd,Cr,Cu,Na,Ni) 245.1, (300.0 for: Nitrate-N, Fluoride, Sulfate); (EPA 353.2 for: Nitrate-N, Nitrite-N); (SM4500NO3-F for: Nitrate-N and Nitrite-N); 4500F-C, 4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, 2320B, SM2540C, SM4500H-B. Organic Parameters: (EPA 524.2 for: Trihalomethanes, Volatile Organics); (504.1 for: 1,2-Dibromoethane, 1,2-Dibromo-3-Chloropropane), EPA 332. Microbiology Parameters: SM9215B; ENZ. SUB. SM9223; ColilertQT SM9223B; MF-SM9222D.)

Non-Potable Water (Inorganic Parameters:, (EPA 200.8 for: Al,Sb,As,Be,Cd,Cr,Cu,Pb,Mn,Ni,Se,Ag,Tl,Zn); (EPA 200.7 for: Al,Sb,As,Be,Cd,Ca,Cr,Co,Cu,Fe,Pb,Mg,Mn,Mo,Ni,K,Se,Ag,Na,Sr,Ti,Tl, V,Zn); 245.1, SM4500H,B, EPA 120.1,

SM2510B, 2540C, 2340B, 2320B, 4500CL-E, 4500F-BC, 426C, SM4500NH3-BH, (EPA 350.1 for: Ammonia-N), LACHAT 10-107-06-1-B for Ammonia-N, SM4500NO3-F, 353.2 for Nitrate-N, SM4500NH3-BC-NES, EPA 351.1, SM4500P-E, 4500P-B,E, 5220D, EPA 410.4, SM 5210B, 5310C, 4500CL-D, EPA 1664, SM14 510AC, EPA 420.1, SM4500-CN-CE, SM2540D.
Organic Parameters: (EPA 624 for Volatile Halocarbons, Volatile Aromatics),(608 for: Chlordane, Aldrin, Dieldrin, DDD, DDE, DDT, Heptachlor, Heptachlor Epoxide, PCBs-Water), (EPA 625 for SVOC Acid Extractables and SVOC Base/Neutral Extractables), 600/4-81-045-PCB-Oil. Microbiology Parameters: (ColilertQT SM9223B;Enterolert-QT: SM9222D-MF.)

New Hampshire Department of Environmental Services Certificate/Lab ID: 200307. ***NELAP Accredited.***
Drinking Water (Inorganic Parameters: SM 9222B, 9223B, 9215B, EPA 200.7, 200.8, 245.2, 300.0, SM4500CN-E, 4500H+B, 4500NO3-F, 2320B, 2510B, 2540C, 4500F-C, 5310C, 2120B, EPA 332.0. Organic Parameters: 504.1, 524.2.)

Non-Potable Water (Inorganic Parameters: SM9222D, 9221B, 9222B, 9221E-EC, EPA 3005A, 200.7, 200.8, 245.1, 245.2, SW-846 6010B, 6020, 7196A, 7470A, SM3500-CR-D, EPA 120.1, 300.0, 350.1, 351.1, 353.2, 410.4, 420.1, 1664A, SW-846 9010, 9030, 9040B, 9050A, SM426C, SM2120B, 2310B, 2320B, 2540B, 2540D, 4500H+B, 4500CL-E, 4500CN-E, 4500NH3-H, 4500NO3-F, 4500NO2-B, 4500P-E, 4500-S2-D, 5210B, 5220D, 2510B, 2540C, 4500F-C, 5310C, 5540C, LACHAT 10-204-00-1-A, LACHAT 10-107-06-2-D. Organic Parameters: SW-846 3510C, 5030B, 8260B, 8270C, 8330, EPA 624, 625, 608, SW-846 8082, 8081A, 8151A.)

Solid & Chemical Materials (Inorganic Parameters: SW-846 6010B, 7196A, 7471A, 1010, 1030, 9010, 9012A, 9014, 9030B, 9040B, 9045C, 9050C, 9065,1311, 1312, 3005A, 3050B. Organic Parameters: SW-846 3540C, 3546, 3580A, 5030B, 5035, 8260B, 8270C, 8330, 8151A, 8015B, 8082, 8081A.)

New Jersey Department of Environmental Protection Certificate/Lab ID: MA935. ***NELAP Accredited.***
Drinking Water (Inorganic Parameters: SM9222B, 9221E, 9223B, 9215B, 4500CN-CE, 4500NO3-F, 4500F-C, EPA 300.0, 200.7, 200.8, 245.2, 2540C, SM2120B, 2320B, 2510B, 5310C, SM4500H-B. Organic Parameters: EPA 332, 504.1, 524.2.)

Non-Potable Water (Inorganic Parameters: SM5210B, EPA 410.4, SM5220D, 4500Cl-E, EPA 300.0, SM2120B, SM4500F-BC, EPA 200.7, 351.1, LACHAT 10-107-06-2-D, EPA 353.2, SM4500NO3-F, 4500NO2-B, EPA 1664A, SM5310B, C or D, 4500-PE, EPA 420.1, SM510ABC, SM4500P-B5+E, 2540B, 2540C, 2540D, EPA 120.1, SM2510B, SM15 426C, 9222D, 9221B, 9221C, 9221E, 9222B, 9215B, 2310B, 2320B, 4500NH3-H, 4500-S D, EPA 350.1, 350.2, SW-846 1312, 6020, 6020A, 7470A, 5540C, 4500H-B, EPA 200.8, SM3500Cr-D, 4500CN-CE, EPA 245.1, 245.2, SW-846 9040B, 3005A, 3015, EPA 6010B, 6010C, 7196A, 3060A, SW-846 9010B, 9030B. Organic Parameters: SW-846 8260B, 8270C, 8270D, 8270C-SIM, 8270D-SIM, 3510C, EPA 608, 624, 625, SW-846 3630C, 5030B, 8081A, 8081B, 8082, 8082A, 8151A, 8330, NJ OQA-QAM-025 Rev.7, NJ EPH.)

Solid & Chemical Materials (Inorganic Parameters: SW-846, 6010B, 6010C, 7196A, 3060A, 9010B, 9030B, 1010, 1030, 1311, 1312, 3005A, 3050B, 7471A, 7471B, 9014, 9012A, 9040B, 9045C, 9050A, 9065. Organic Parameters: SW-846 8015B, 8015C, 8081A, 8081B, 8082, 8082A, 8151A, 8330, 8260B, 8270C, 8270D, 8270C-SIM, 8270D-SIM, 3540C, 3545, 3546, 3550B, 3580A, 3630C, 5030B, 5035L, 5035H, NJ OQA-QAM-025 Rev.7, NJ EPH.)

New York Department of Health Certificate/Lab ID: 11148. ***NELAP Accredited.***
Drinking Water (Inorganic Parameters: SM9223B, 9222B, 9215B, EPA 200.8, 200.7, 245.2, SM5310C, EPA 332.0, SM2320B, EPA 300.0, SM2120B, 4500CN-E, 4500F-C, 4500H-B, 4500NO3-F, 2540C, SM 2510B. Organic Parameters: EPA 524.2, 504.1.)

Non-Potable Water (Inorganic Parameters: SM9221E, 9222D, 9221B, 9222B, 9215B, 5210B, 5310C, EPA 410.4, SM5220D, 2310B-4a, 2320B, EPA 200.7, 300.0, SM4500CL-E, 4500F-C, SM15 426C, EPA 350.1, SM4500NH3-BH, EPA 351.1, LACHAT 10-107-06-2, EPA 353.2, LACHAT 10-107-04-1-C, SM4500-NO3-F, 4500-NO2-B, 4500P-E, 2540C, 2540B, 2540D, EPA 200.8, EPA 6010B, 6020, EPA 7196A, SM3500Cr-D, EPA 245.1, 245.2, 7470A, SM2120B, LACHAT 10-204-00-1-A, EPA 9040B, SM4500-HB, EPA 1664A, EPA 420.1, SM14 510C, EPA 120.1, SM2510B, SM4500S-D, SM5540C, EPA 3005A, 9010B, 9030B.. Organic Parameters: EPA 624, 8260B, 8270C, 625, 608, 8081A, 8151A, 8330, 8082, EPA 3510C, 5030B.)

Solid & Hazardous Waste (Inorganic Parameters: 1010, 1030, EPA 6010B, 7196A, 7471A, 9012A, 9014, 9040B, 9045C, 9065, 9050, EPA 1311, 1312, 3005A, 3050B, 9010B, 9030B. Organic Parameters: EPA 8260B, 8270C, 8015B, 8081A, 8151A, 8330, 8082, 3540C, 3545, 3546, 3580, 5030B, 5035.)

North Carolina Department of the Environment and Natural Resources Certificate/Lab ID : 666. Organic Parameters: MA-EPH, MA-VPH.

Drinking Water Program Certificate/Lab ID: 25700. (Inorganic Parameters: Chloride EPA 300.0. Organic Parameters: 524.2)

Pennsylvania Department of Environmental Protection Certificate/Lab ID : 68-03671. ***NELAP Accredited.***
Drinking Water (Organic Parameters: EPA 524.2, 504.1)

Non-Potable Water (Inorganic Parameters: EPA 1312, 200.7, 410.4, 1664A, SM2540D, 5210B, 5220D, 4500-P,BE. Organic Parameters: EPA 3510C, 5030B, 625, 624, 608, 8081A, 8082, 8151A, 8260B, 8270C, 8330)

Solid & Hazardous Waste (Inorganic Parameters: EPA 350.1, 1010, 1030, 1311, 1312, 3050B, 6010B, 7196A, 7471A, 9010B, 9012A, 9014, 9040B, 9045C, 9050, 9065, SM 4500NH3-H. Organic Parameters: 3540C, 3545, 3546, 3550B, 3580A, 3630C, 5035, 8015B, 8081A, 8082, 8151A, 8260B, 8270C, 8330)

Rhode Island Department of Health Certificate/Lab ID: LAO00065. ***NELAP Accredited via NY-DOH.***
Refer to MA-DEP Certificate for Potable and Non-Potable Water.
Refer to NJ-DEP Certificate for Potable and Non-Potable Water.

Texas Commisson on Environmental Quality Certificate/Lab ID: T104704476-09-1. ***NELAP Accredited.***
Non-Potable Water (Inorganic Parameters: EPA 120.1, 1664, 200.7, 200.8, 245.1, 245.2, 300.0, 350.1, 351.1, 353.2, 376.2, 410.4, 420.1, 6010, 6020, 7196, 7470, 9040, SM 2120B, 2310B, 2320B, 2510B, 2540B, 2540C, 2540D, 426C, 4500CL-E, 4500CN-E, 4500F-C, 4500H+B, 4500NH3-H, 4500NO2B, 4500P-E, 4500 $S2^{-}$D, 510C, 5210B, 5220D, 5310C, 5540C. Organic Parameters: EPA 608, 624, 625, 8081, 8082, 8151, 8260, 8270, 8330.)

Solid & Hazardous Waste (Inorganic Parameters: EPA 1311, 1312, 9012, 9014, 9040, 9045, 9050, 9065.)

Department of Defense Certificate/Lab ID: L2217.
Drinking Water (Inorganic Parameters: SM 4500H-B. Organic Parameters: EPA 524.2, 504.1.)

Non-Potable Water (Inorganic Parameters: EPA 200.7, 200.8, 6010B, 6020, 245.1, 245.2, 7470A, 9040B, 300.0, 332.0, 6860, 353.2, 410.4, 9060, 1664A, SM 4500CN-E, 4500H-B, 4500NO3-F, 5220D, 5310C, 2320B, 2540C, 3005A, 3015, 9010B, 9056. Organic Parameters: EPA 8260B, 8270C, 8330A, 625, 8082, 8081A, 3510C, 5030B, MassDEP EPH, MassDEP VPH.)

Solid & Hazardous Waste (Inorganic Parameters: EPA 200.7, 6010B, 7471A, 9010, 9012A, 6860, 1311, 1312, 3050B, 7196A, 9010B, 3500-CR-D, 4500CN-CE, 2540G, Organic Parameters: EPA 8260B, 8270C, 8330A/B-prep, 8082, 8081A, 3540C, 3546, 3580A, 5035A, MassDEP EPH, MassDEP VPH.)

The following analytes are not included in our current NELAP/TNI Scope of Accreditation:
EPA 8260B: Freon-113, 1,2,4,5-Tetramethylbenzene, 4-Ethyltoluene. **EPA 8330A:** PETN, Picric Acid, Nitroglycerine, 2,6-DANT, 2,4-DANT. **EPA 8270C:** Methyl naphthalene, Dimethyl naphthalene, Total Methylnapthalenes, Total Dimethylnaphthalenes, 1,4-Diphenylhydrazine (Azobenzene). **EPA 625:** 4-Chloroaniline, 4-Methylphenol. Total Phosphorus in a soil matrix, Chloride in a soil matrix, TKN in a soil matrix, NO2 in a soil matrix, NO3 in a soil matrix, SO4 in a soil matrix.

ALPHA ANALYTICAL
WESTBORO, MA TEL: 508-898-9220 FAX: 508-898-9193
MANSFIELD, MA TEL: 508-822-9300 FAX: 508-822-3288

Serial_No:08181115:36

CHAIN OF CUSTODY

PAGE 1 OF 1

Date Rec'd in Lab: 8/10/11 ALPHA Job #: L1112155

Client Information

Client: TETRA TECH
Address: 250 ANDOVER ST SUITE 200 WILMINGTON, MA 01887
Phone: 978-474-8444
Fax: 978-474-8499
Email: Stephen.Vetere@tetratech.com
☐ These samples have been previously analyzed by Alpha

Project Information

Project Name: LMC WILMINGTON
Project Location: 50 FORDHAM RD, WILMINGTON, MA
Project #: 1121C03346
Project Manager: Steve Vetere
ALPHA Quote #:

Turn-Around Time

☒ Standard ☐ RUSH (only confirmed if pre-approved!)
Date Due: 8/17/11 Time:

Report Information - Data Deliverables

☐ FAX ☒ EMAIL
☒ ADEx ☐ Add'l Deliverables

Billing Information

☒ Same as Client info PO #:

Regulatory Requirements/Report Limits

State /Fed Program | Criteria

MA MCP PRESUMPTIVE CERTAINTY --- CT REASONABLE CONFIDENCE PROTO

☐ Yes ☐ No Are MCP Analytical Methods Required?
☐ Yes ☐ No Is Matrix Spike (MS) Required on this SDG? (If yes see note in Comments)
☐ Yes ☐ No Are CT RCP (Reasonable Confidence Protocols) Required?

Other Project Specific Requirements/Comments/Detection Limits:
If MS is required, indicate in Sample Specific Comments which samples and what tests MS to be performed.
(Note: All *CAM* methods for inorganic analyses require MS every 20 soil samples)

ANALYSIS

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	TCLP Metals	COD, NH3, TS, TVS	Ignit, O&G, PF, Ph, react	TCLP VOC	PCB, TCLP HERB	TCLP PEST, TCLP SVOC	Sample Specific Comments	TOTAL # BOTTLES
12155.1	LMC-WC-CONCRETE-C-1	8/10/11	0900	S	MA	X	X	X	X	X	X		
2	LMC-WC-CONCRETE-NC-2	8/10/11	0930	S	MA	X	X	X	X	X	X		
3	LMC-WC-CONCRETE-ST-1	8/10/11	1000	S	MA	X	X	X	X	X	X		
4	LMC-WC-SO-1	8/10/11	10:30	S	MA	X	X	X	X	X	X		

SAMPLE HANDLING
Filtration ________
☐ Done
☐ Not needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

Container Type	G	G	G	G	G	G
Preservative	4°c	4°c	4°c	4°c	4°c	4°c

PLEASE ANSWER QUESTIONS ABOVE!

IS YOUR PROJECT MA MCP *or* CT RCP?

Relinquished By:	Date/Time	Received By:	Date/Time
M. Abroy [signature]	8/10/11	[signature]	8.10.11 1450
[signature]	8/10/11 1655	[signature]	8/10/11 1655

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.

FORM NO: 01-01 (rev. 18-Jan-2010)

ALPHA ANALYTICAL

ANALYTICAL REPORT

Lab Number:	L1114942
Client:	Tetra Tech Nus, Inc. 250 Andover St Suite 200 Wilmington, MA 01887
ATTN:	Steve Vetere
Phone:	(978) 474-8444
Project Name:	LMC WILMINGTON
Project Number:	1121C03346
Report Date:	09/23/11

Certifications & Approvals: MA (M-MA086), NY NELAC (11148), CT (PH-0574), NH (2003), NJ (MA935), RI (LAO00065), ME (MA0086), PA (Registration #68-03671), USDA (Permit #S-72578), US Army Corps of Engineers, Naval FESC.

Eight Walkup Drive, Westborough, MA 01581-1019
508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com

Project Name: LMC WILMINGTON
Project Number: 1121C03346

Lab Number: L1114942
Report Date: 09/23/11

Alpha Sample ID	Client ID	Sample Location	Collection Date/Time
L1114942-01	LMC-WC-CONCRETE-C-1	50 FORDHAM RD. WILMINGTON, MA	08/10/11 09:00
L1114942-02	LMC-WC-CONCRETE-NC-2	50 FORDHAM RD. WILMINGTON, MA	08/10/11 09:30
L1114942-03	LMC-WC-CONCRETE-ST-1	50 FORDHAM RD. WILMINGTON, MA	08/10/11 10:00
L1114942-04	LMC-WC-SO-1	50 FORDHAM RD. WILMINGTON, MA	08/10/11 10:30

Project Name: LMC WILMINGTON
Project Number: 1121C03346

Lab Number: L1114942
Report Date: 09/23/11

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet all of the requirements of NELAC, for all NELAC accredited parameters. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively. When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

Please see the associated ADEx data file for a comparison of laboratory reporting limits that were achieved with the regulatory Numerical Standards requested on the Chain of Custody.

For additional information, please contact Client Services at 800-624-9220.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Michelle M. Morris

Michelle M. Morris

Title: Technical Director/Representative

Date: 09/23/11

METALS

Project Name: LMC WILMINGTON
Project Number: 1121C03346

Lab Number: L1114942
Report Date: 09/23/11

SAMPLE RESULTS

Lab ID: L1114942-04
Client ID: LMC-WC-SO-1
Sample Location: 50 FORDHAM RD. WILMINGTON, MA
Matrix: Soil

Date Collected: 08/10/11 10:30
Date Received: 08/10/11
Field Prep: Not Specified
TCLP/SPLP Ext. Date: 09/21/11 19:55

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
TCLP pH Extraction Data - Westborough Lab											
pH, Extraction Post-Filtration	5.16		SU	-	NA	1		09/22/11 12:05	NA	1,1311	AG
TCLP Metals by EPA 1311 - Westborough Lab											
Copper, TCLP	ND		mg/l	0.20	--	1	09/22/11 13:15	09/22/11 16:27	EPA 3015	1,6010B	AI
Nickel, TCLP	ND		mg/l	0.50	--	1	09/22/11 13:15	09/22/11 16:27	EPA 3015	1,6010B	AI
Zinc, TCLP	ND		mg/l	0.50	--	1	09/22/11 13:15	09/22/11 16:27	EPA 3015	1,6010B	AI

Project Name: LMC WILMINGTON
Project Number: 1121C03346

Lab Number: L1114942
Report Date: 09/23/11

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
TCLP Metals by EPA 1311 - Westborough Lab for sample(s): 01-04 Batch: WG491571-1										
Nickel, TCLP	ND		mg/l	0.50	--	1	09/22/11 13:15	09/22/11 15:45	1,6010B	AI
Zinc, TCLP	ND		mg/l	0.50	--	1	09/22/11 13:15	09/22/11 15:45	1,6010B	AI

Prep Information

Digestion Method: EPA 3015
TCLP/SPLP Extraction Date: 09/21/11 19:55

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
TCLP Metals by EPA 1311 - Westborough Lab for sample(s): 01-04 Batch: WG491571-1										
Copper, TCLP	ND		mg/l	0.20	--	1	09/22/11 13:15	09/22/11 15:45	1,6010B	AI

Prep Information

Digestion Method: EPA 3015
TCLP/SPLP Extraction Date: 09/21/11 19:55

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
TCLP pH Extraction Data - Westborough Lab for sample(s): 01-04 Batch: WG491816-1										
pH, Extraction Post-Filtration	4.97		SU	-	NA	1		09/22/11 12:05	1,1311	AG

Prep Information

Digestion Method: NA

L1114942

CHAIN OF CUSTODY

PAGE 1 OF 1

ALPHA

WESTBORO, MA TEL: 508-898-9220 FAX: 508-898-9193
MANSFIELD, MA TEL: 508-822-9300 FAX: 508-822-3288

Date Rec'd in Lab: 8/10/11 ALPHA Job #: L1114942

Client Information

Client: TETRA TECH
Address: 250 ANDOVER ST SUITE 200 WILMINGTON MA 01887
Phone: 978-474-8444
Fax: 978-474-8499
Email: Stephen.Vetere@tetratech.com
☐ These samples have been previously analyzed by Alpha

Project Information

Project Name: LMC WILMINGTON
Project Location: 50 FORDHAM RD, WILMINGTON, MA
Project #: 1121C03346
Project Manager: Steve Vetere
ALPHA Quote #:

Turn-Around Time

☒ Standard ☐ RUSH (only confirmed if pre-approved)
Date Due: ~~9/23/11~~ 8/17/11 Time:

Report Information - Data Deliverables

☐ FAX ☒ EMAIL
☒ ADEx ☐ Add'l Deliverables

Billing Information

☒ Same as Client info PO #:

Regulatory Requirements/Report Limits

State /Fed Program Criteria

MA MCP PRESUMPTIVE CERTAINTY --- CT REASONABLE CONFIDENCE PROTO

☐ Yes ☐ No Are MCP Analytical Methods Required?
☐ Yes ☐ No Is Matrix Spike (MS) Required on this SDG? (If yes see note in Comments)
☐ Yes ☐ No Are CT RCP (Reasonable Confidence Protocols) Required?

Other Project Specific Requirements/Comments/Detection Limits:

If MS is required, indicate in Sample Specific Comments which samples and what tests MS to be performed. (Note: All *CAM* methods for inorganic analyses require MS every 20 soil samples)

14942

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	TCLP PH	TCLP Cu, Ni, Zn	Sample Specific Comments	TOTAL # BOTTLES
42155-1	LMC-WC-CONCRETE-C-1	8/10/11	0900	S	MA	X	X	X	X	X	X	X	X		
2	LMC-WC-CONCRETE-NC-2	8/10/11	0930	S	MA	X	X	X	X	X	X	X	X		
3	LMC-WC-CONCRETE-ST-1	8/10/11	1000	S	MA	X	X	X	X	X	X	X	X		
4	LMC-WC-SO-1	8/10/11	10:30	S	MA	X	X	X	X	X	X	X	X		

SAMPLE HANDLING

Filtration
☐ Done
☐ Not needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

PLEASE ANSWER QUESTIONS ABOVE!

IS YOUR PROJECT MA MCP *or* CT RCP?

Container Type	G	G	G	G	G	G
Preservative	4°C	4°C	4°C	4°C	4°C	4°C

Relinquished By:	Date/Time	Received By:	Date/Time
[signature]	8/10/11	[signature]	8-10-11 1450
[signature]	8/10/11 1655	[signature]	8/10/11 1655

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.

FORM NO: 01-01 (rev. 18-Jan-2010)

Serial_No:09231116:18

ALPHA ANALYTICAL

ANALYTICAL REPORT

Lab Number:	L1115258
Client:	Tetra Tech Nus, Inc. 55 Jonspin Road Wilmington, MA 01887-1020
ATTN:	Scott Nesbit
Phone:	(978) 658-7899
Project Name:	LMC WILMINGTON
Project Number:	1121C03346
Report Date:	09/28/11

Certifications & Approvals: MA (M-MA086), NY NELAC (11148), CT (PH-0574), NH (2003), NJ (MA935), RI (LAO00065), ME (MA0086), PA (Registration #68-03671), USDA (Permit #S-72578), US Army Corps of Engineers, Naval FESC.

Project Name: LMC WILMINGTON
Project Number: 1121C03346

Lab Number: L1115258
Report Date: 09/28/11

Alpha Sample ID	Client ID	Sample Location	Collection Date/Time	
L1115258-01	LMC-WC-CONCRETE-C-1	50 FORDHAM RD., WILMINGTON, MA	08/10/11 09:00	
L1115258-02	LMC-WC-CONCRETE-C-1	50 FORDHAM RD., WILMINGTON, MA	08/10/11 09:00	
L1115258-03	LMC-WC-CONCRETE-NC-2	50 FORDHAM RD., WILMINGTON, MA	08/10/11 09:30	
L1115258-04	LMC-WC-CONCRETE-NC-2	50 FORDHAM RD., WILMINGTON, MA	08/10/11 09:30	
L1115258-05	LMC-WC-CONCRETE-ST-1	50 FORDHAM RD., WILMINGTON, MA	08/10/11 10:00	
L1115258-06	LMC-WC-CONCRETE-ST-1	50 FORDHAM RD., WILMINGTON, MA	08/10/11 10:00	
L1115258-07	LMC-WC-SO-1	50 FORDHAM RD., WILMINGTON, MA	08/10/11 10:30	<
L1115258-08	LMC-WC-SO-1	50 FORDHAM RD., WILMINGTON, MA	08/10/11 10:30	<

Project Name: LMC WILMINGTON
Project Number: 1121C03346

Lab Number: L1115258
Report Date: 09/28/11

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet all of the requirements of NELAC, for all NELAC accredited parameters. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively. When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

Please see the associated ADEx data file for a comparison of laboratory reporting limits that were achieved with the regulatory Numerical Standards requested on the Chain of Custody.

For additional information, please contact Client Services at 800-624-9220.

Report Submission

This is a partial report. A final report will be issued as soon as the results of all requested analyses become available.

Oil & Grease, Hem-Grav

Laboratory Duplicates and Matrix Spikes could not be performed due to insufficient sample volume available for analysis.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Kelly Stenstrom

Title: Technical Director/Representative

Date: 09/28/11

Project Name: LMC WILMINGTON
Project Number: 1121C03346

Lab Number: L1115258
Report Date: 09/28/11

SAMPLE RESULTS

Lab ID: L1115258-08
Client ID: LMC-WC-SO-1
Sample Location: 50 FORDHAM RD., WILMINGTON, MA
Matrix: Liquid

Date Collected: 08/10/11 10:30
Date Received: 08/10/11
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Chemical Oxygen Demand	ND		mg/l	20	--	1	09/28/11 08:30	09/28/11 14:33	30,5220D	DW
Oil & Grease, Hem-Grav	ND		mg/l	4.4	--	1.1	09/27/11 09:00	09/27/11 16:15	74,1664A	JO

ALPHA ANALYTICAL
WESTBORO, MA TEL: 508-898-9220 FAX: 508-898-9193
MANSFIELD, MA TEL: 508-822-9300 FAX: 508-822-3288

CHAIN OF CUSTODY

PAGE 1 OF 1

L1115258

Date Rec'd in Lab: 8/10/11

ALPHA Job #:

Client Information

Client: TETRA TECH
Address: 250 ANDOVER ST
SUITE 200 WILMINGTON, MA 01887
Phone: 978-474-8444
Fax: 978-474-8499
Email: Stephen.Vetere@tetratech.com

☐ These samples have been previously analyzed by Alpha

Project Information

Project Name: LMC WILMINGTON
Project Location: 50 FORDHAM RD, WILMINGTON, MA
Project #: 1121C03346
Project Manager: Steve Vetere
ALPHA Quote #:

Turn-Around Time

☒ Standard ☐ RUSH (only confirmed if pre-approved!)
Date Due: 9/27/11 (8/17/11 crossed out)
Time:

Report Information - Data Deliverables

☐ FAX ☒ EMAIL
☒ ADEx ☐ Add'l Deliverables

Billing Information

☒ Same as Client info PO #:

Regulatory Requirements/Report Limits

State /Fed Program | Criteria

MA MCP PRESUMPTIVE CERTAINTY --- CT REASONABLE CONFIDENCE PROTO

☐ Yes ☐ No Are MCP Analytical Methods Required?
☐ Yes ☐ No Is Matrix Spike (MS) Required on this SDG? (If yes see note in Comments)
☐ Yes ☐ No Are CT RCP (Reasonable Confidence Protocols) Required?

Other Project Specific Requirements/Comments/Detection Limits:

If MS is required , indicate in Sample Specific Comments which samples and what tests MS to be performed.
(Note: All CAM methods for inorganic analyses require MS every 20 soil samples)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	ANALYSIS: [illegible] (crossed out)	[illegible] (crossed out)	[illegible] (crossed out)	[illegible] (crossed out)	[illegible] (crossed out)	[illegible] (crossed out)	FORM-LIQUID	Sample Specific Comments	TOTAL # BOTTLES
15258-1,2 / 1	LMC-WC-CONCRETE-C-1	8/10/11	0900	S	MA	X	X	X	X	X	X	X		
3,4 / 2	LMC-WC-CONCRETE-NC-2	8/10/11	0930	S	MA	X	X	X	X	X	X	X		
5,6 / 3	LMC-WC-CONCRETE-ST-1	8/10/11	1000	S	MA	X	X	X	X	X	X	X		
7,8 / 4	LMC-WC-SO-1 *	8/10/11	10:30	S	MA	X	X	X	X	X	X	X		

SAMPLE HANDLING
Filtration
☐ Done
☐ Not needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

PLEASE ANSWER QUESTIONS ABOVE!

IS YOUR PROJECT MA MCP or CT RCP?

Container Type	G	G	G	G	G	G
Preservative	4°c	4°c	4°c	4°c	4°c	4°c

Relinquished By:	Date/Time	Received By:	Date/Time
[signature]	8/10/11	[signature]	8.10.11 [illegible]
[signature]	8/10/11 1655	[signature]	8/10/11 1655

Please print clearly, legibly and completely. Samples can not be logged in and turn around time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.

FORM NO: 01-01 (rev. 18-Jan-2010)

Serial_No:09281119:28

analytics environmental laboratory LLC

195 Commerce Way Suite E
Portsmouth, New Hampshire 03801
603-436-5111 Fax 603-430-2151
800-929-9906
www.analyticslab.com

CLIENT: Tetra Tech NUS, Inc. **REPORT NUMBER: 70594** **REV: Rev. 0**

PROJECT: LMC WILMINGTON (Project No: 1121C03346)

Lab Number	Sample Date	Station Location	Analysis	Comments
70594-1	07/27/11	LMC-CONCRETE-NC-1	EPA 8082 (PCBs only)	
	07/27/11	LMC-CONCRETE-NC-1	EPA 8260 Volatile Organics	
	07/27/11	LMC-CONCRETE-NC-1	MADEP EPH	
	07/27/11	LMC-CONCRETE-NC-1	Metals	
	07/27/11	LMC-CONCRETE-NC-1	Volatile Petroleum Hydrocarbons	
70594-2	07/27/11	LMC-CONCRETE-NC-2	EPA 8082 (PCBs only)	
	07/27/11	LMC-CONCRETE-NC-2	EPA 8260 Volatile Organics	
	07/27/11	LMC-CONCRETE-NC-2	MADEP EPH	
	07/27/11	LMC-CONCRETE-NC-2	Metals	
	07/27/11	LMC-CONCRETE-NC-2	Volatile Petroleum Hydrocarbons	
70594-3	07/27/11	LMC-SO-TRENCH-1	EPA 8260 Volatile Organics	
	07/27/11	LMC-SO-TRENCH-1	MADEP EPH	
	07/27/11	LMC-SO-TRENCH-1	Volatile Petroleum Hydrocarbons	
70594-4	07/27/11	LMC-TB02	EPA 8260 Volatile Organics	
	07/27/11	LMC-TB02	Volatile Petroleum Hydrocarbons	

Analytics environmental laboratory LLC

195 Commerce Way
Portsmouth, New Hampshire 03801
603-436-5111 Fax 603-430-2151
800-929-9906

MassDEP Analytical Protocol Certification Form

Laboratory Name: Analytics Environmental Laboratory, LLC Project #: 70594

Project Location: LMC WILMINGTON RTN:

This Form provides certifications for the following data set. Laboratory Sample ID Number(s):

70594-1, 70594-2, 70594-3, 70594-4

Matrices: ☐ Groundwater/Surface Water ☐ Soil/Sediment ☐ Drinking Water ☐ Air ☒ Other

CAM Protocol (check all that apply below):

8260 VOC CAM II A ☒	7470/7471 Hg CAM III B ☐	MassDEP VPH CAM IV A ☒	8081 Pesticides CAM V B ☐	7196 Hex Cr CAM VI B ☐	MassDEP APH CAM IX A ☐
8270 SVOC CAM II B ☐	7010 Metals CAM III C ☐	MassDEP EPH CAM IV B ☐	8151 Herbicides CAM V C ☐	8330 Explosives CAM VIII A ☐	TO-15 VOC CAM IX B ☐
6010 Metals CAM III A ☐	6020 Metals CAM III D ☐	8082 PCB CAM V A ☒	9014 Total Cyanide/PAC CAM VI A ☐	6860 Perchlorate CAM VIII B ☐	

Affirmative Responses to Questions A through F are required for "Presumptive Certainty" status

A	Were all samples received in a condition conistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times?	☒Yes ☐No
B	Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed?	☒Yes ☐No
C	Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances?	☒Yes ☐No
D	Does the laboratory report comply with all reporting requirements specified in CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data"?	☒Yes ☐No
E	a. VPH, EPH, and APH Methods only: Was each method conducted without significant modification(s)? (Refer to individual method(s) for a list of significant modifications). b. APH and TO-15 Methods only: Was the complete analyte list reported for each method?	☒Yes ☐No ☐Yes ☐No
F	Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all "No" responses to Questions A through E)?	☒Yes ☐No

Responses to Questions G, H and I below are required for "Presumptive Certainty" status

G	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)?	☐Yes ☒No[1]

Data User Note: Data that achieve "Preseumptive Certainty" status may not necessarily meet the data usability and representativeness requirements described in 310 CMR 40.1056 (2)(k) and WSC-07-350.

H	Were ALL QC performance standards specified in the CAM protocol(s) achieved?	☐Yes ☒No[1]
I	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	☒Yes ☐No[1]

[1] *All negative responses must be addressed in an attached laboratory narrative.*

I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this analytical report is, to the best of my knowledge and belief, accurate and complete.

Signature: _____ **Position:** Assistant Laboratory Director

Printed Name: Melissa Gulli **Date:** August 04, 2011

analytics environmental laboratory LLC

195 Commerce Way
Portsmouth, New Hampshire 03801
603-436-5111 Fax 603-430-2151
800-929-9906

Mr. Steve Vetere
Tetra Tech NUS, Inc.
250 Andover Street
Wilmington MA 01887

August 3, 2011

CLIENT SAMPLE ID

Project Name: LMC WILMINGTON

Project Number: 1121C03346

Field Sample ID: LMC-SO-TRENCH-1

SAMPLE DATA

Lab Sample ID: 70594-3
Matrix: Solid
Percent Solid: 98
Dilution Factor: 91
Collection Date: 07/27/11
Lab Receipt Date: 07/27/11
Analysis Date: 07/28/11

ANALYTICAL RESULTS VOLATILE ORGANICS

COMPOUND	Quantitation Limit µg/kg	Result µg/kg	COMPOUND	Quantitation Limit µg/kg	Result µg/kg
Benzene	91	U	1,3-Dichloropropane	91	U
Bromobenzene	91	U	cis-1,3-Dichloropropene	91	U
Bromochloromethane	91	U	trans-1,3-Dichloropropene	91	U
Bromodichloromethane	68	U	2,2-Dichloropropane	91	U
Bromoform	68	U	1,1-Dichloropropene	91	U
Bromomethane	91	U	Ethylbenzene	91	U
n-butylbenzene	91	U	Hexachlorobutadiene	91	U
sec-butylbenzene	91	U	Isopropylbenzene	91	U
tert-butylbenzene	91	U	p-isopropyltoluene	91	U
Carbon Tetrachloride	91	U	Methylene Chloride	457	U
Chlorobenzene	91	U	Methyl-tert-butyl ether (MTBE)	68	U
Chloroethane	91	U	Naphthalene	91	U
Chloroform	68	U	n-Propylbenzene	91	U
Chloromethane	91	U	Styrene	91	U
2-Chlorotoluene	91	U	1,1,1,2-Tetrachloroethane	91	U
4-Chlorotoluene	91	U	1,1,2,2-Tetrachloroethane	68	U
Dibromochloromethane	68	U	Tetrachloroethene	91	U
1,2-Dibromo-3-chloropropane	91	U	Toluene	91	U
1,2-Dibromoethane	68	U	1,2,3-Trichlorobenzene	91	U
Dibromomethane	91	U	1,2,4-Trichlorobenzene	91	U
1,2-Dichlorobenzene	91	U	1,1,1-Trichloroethane	91	U
1,3-Dichlorobenzene	91	U	1,1,2-Trichloroethane	68	U
1,4-Dichlorobenzene	91	U	Trichloroethene	91	U
Dichlorodifluoromethane	91	U	Trichlorofluoromethane	91	U
1,1-Dichloroethane	91	U	1,2,3-Trichloropropane	91	U
1,2-Dichloroethane	68	U	1,2,4-Trimethylbenzene	91	U
1,1-Dichloroethene	68	U	1,3,5-Trimethylbenzene	91	U
cis-1,2-Dichloroethene	91	U	Vinyl Chloride	91	U
trans-1,2-Dichloroethene	91	U	o-Xylene	91	U
1,2-Dichloropropane	68	U	m,p-Xylene	91	U
Acetone	913	U	Diethyl ether	91	U
Carbon Disulfide	91	U	2-Hexanone	913	U
Tetrahydrofuran	457	U	Methyl isobutyl ketone	913	U
Methyl ethyl ketone	913	U	Di-isopropyl ether (DIPE)	91	U
t-Butyl alcohol (TBA)	1830	U	Ethyl t-butyl ether (ETBE)	91	U
t-Amyl methyl ether (TAME)	91	U	1,4-Dioxane	2740	U

Surrogate Standard Recovery

d4-1,2-Dichloroethane	125 %	d8-Toluene	114 %	Bromofluorobenzene	121 %

U=Undetected J=Estimated E=Exceeds Calibration Range B=Detected in

METHODOLOGY: Sample collection in accordance with SW-846 method 5035A. Sample analysis was conducted according to: Test Methods for Evaluating Solid Waste, SW-846 Method 8260B.

COMMENTS: Results are expressed on a dry weight basis.

~8260MCP (3) + Dioxane:Res(72):Rec(3)

Authorized signature

analytics environmental laboratory LLC
195 Commerce Way
Portsmouth, New Hampshire 03801
603-436-5111 Fax 603-430-2151
800-929-9906

Mr. Steve Vetere
Tetra Tech NUS, Inc.
250 Andover Street
Wilmington MA 01887

August 1, 2011

CLIENT SAMPLE ID

Project Name: LMC WILMINGTON

Project Number: 1121C03346
Client Sample ID: LMC-SO-TRENCH-1

SAMPLE DATA

Lab Sample ID: 70594-3
Matrix: Solid
Percent Solid: 98
Dilution Factor: 50
Collection Date: 07/27/11
Lab Receipt Date: 07/27/11
Analysis Date: 07/28/11

VPH ANALYTICAL RESULTS

RANGE/TARGET ANALYTE	Elution Range	RL	Units	Result
Unadjusted C5-C8 Aliphatics[1]	N/A	2496	µg/kg	U
Unadjusted C9-C12 Aliphatics[1]	N/A	2496	µg/kg	U
Benzene	C5-C8	99.8	µg/kg	U
Ethylbenzene	C9-C12	99.8	µg/kg	U
Methyl-tert-butyl ether	C5-C8	99.8	µg/kg	U
Naphthalene	N/A	99.8	µg/kg	U
Toluene	C5-C8	99.8	µg/kg	U
m- & p-Xylenes	C9-C12	200	µg/kg	U
o-Xylene	C9-C12	99.8	µg/kg	U
C5-C8 Aliphatics Hydrocarbons[1,2]	N/A	2496	µg/kg	U
C9-C12 Aliphatic Hydrocarbons[1,3]	N/A	2496	µg/kg	U
C9-C10 Aromatic Hydrocarbons[1]	N/A	499	µg/kg	U
Surrogate % Recovery (Trifluorotoluene) PID				97
Surrogate % Recovery (Trifluorotoluene) FID				97
Surrogate Acceptance Range				70-130%

[1]Hydrocarbon Range data exclude concentrations of any surrogate(s) and/or internal standards eluting in that range.
[2]C5-C8 Aliphatic Hydrocarbons exclude the concentration of Target Analytes eluting in that range
[3]C9-C12 Aliphatic Hydrocarbons exclude conc. of Target Analytes eluting in that range and conc. of C9-C10 Aromatic Hydrocarbons.
RL = Report Limit
U=Undetected J=Estimated E=Exceeds Calibration Range B=Detected in Blank

METHODOLOGY: MADEP Volatile Petroleum Hydrocarbons (VPH), ORS Division of Environmental Analysis,Revision 1.1 May 2004.

COMMENTS: Samples were received in accordance with method criteria unless noted on the sample receipt checklist. Results are expressed on a moisture corrected and dry weight basis.

Authorized signature: [signature]

analytics environmental laboratory LLC

195 Commerce Way
Portsmouth, New Hampshire 03801
603-436-5111 Fax 603-430-2151
800-929-9906

Mr. Steve Vetere
Tetra Tech NUS, Inc.
250 Andover Street
Wilmington MA 01887

August 2, 2011

CLIENT SAMPLE ID

Project Name: LMC WILMINGTON

Project Number: 1121C03346
Client Sample ID: LMC-SO-TRENCH-1

SAMPLE DATA

Lab Sample ID: 70594-3
Matrix: Solid
Percent Solid: 98
Dilution Factor: 1.0
Collection Date: 07/27/11
Lab Receipt Date: 07/27/11
Extraction Date: 07/28/11
Analysis Date: 08/01/11

EPH ANALYTICAL RESULTS

RANGE/TARGET ANALYTE		RL	Units	Result
Unadjusted C11-C22 Aromatics[1]		27000	µg/kg	U
Diesel PAH Analytes	Naphthalene	270	µg/kg	U
	2-Methylnaphthalene	270	µg/kg	U
	Phenanthrene	270	µg/kg	U
	Acenaphthene	270	µg/kg	U
Other Target PAH Analytes	Acenaphthylene	270	µg/kg	U
	Fluorene	270	µg/kg	U
	Anthracene	270	µg/kg	U
	Fluoranthene	270	µg/kg	U
	Pyrene	270	µg/kg	U
	Benzo[a]anthracene	270	µg/kg	U
	Chrysene	270	µg/kg	U
	Benzo[b]fluoranthene	270	µg/kg	U
	Benzo[k]fluoranthene	270	µg/kg	U
	Benzo[a]pyrene	270	µg/kg	U
	Indeno[1,2,3-cd]pyrene	270	µg/kg	U
	Dibenzo[a,h]anthracene	270	µg/kg	U
	Benzo[g,h,i]perylene	270	µg/kg	U
C9-C18 Aliphatic Hydrocarbons[1]		27000	µg/kg	U
C19-C36 Aliphatic Hydrocarbons[1]		27000	µg/kg	**14300 J**
C11-C22 Aromatic Hydrocarbons[1,2]		27000	µg/kg	U
Aliphatic Surrogate % Recovery (1-Chloro-octadecane)				90
Aromatic Surrogate % Recovery (O-Terphenyl)				86
Sample Surrogate Acceptance Range		--	--	40-140%
#1 Fractionation Surrogate % Recovery (2-Fluorobiphenyl)				69
#2 Fractionation Surrogate % Recovery (2-Bromonaphthalene)				56
Fractionation Surrogate Acceptance Range		--	--	40-140%

[1]Hydrocarbon Range data exclude concentrations of any surrogate(s) and/or internal standards eluting in that
[2]C11-C22 Aromatic Hydrocarbons exclude the concentration of Target PAH Analytes.
RL = Report Limit
U=Undetected J=Estimated E=Exceeds Calibration Range B=Detected in Blank

METHODOLOGY: MADEP Extractable Petroleum Hydrocarbons (EPH), ORS Division of Environmental Analysis, May 2004 Revision 1.1. Samples were extracted in accordance with SW-846 Method 3545

COMMENTS: EPH analyses utilized the use of a GC/MS system to detect and quantify ranges and target analytes. Samples were received in accordance with method criteria unless noted on the sample receipt checklist.
Results are expressed on a dry weight basis.

SIGNATURE: Michael

Chain Of Custody Form

analytics environmental laboratory LLC

195 Commerce Way, Suite E
Portsmouth, NH 03801
(800) 929-9906

(603) 436-5111
(603) 430-2151 Fax

For Analytics Use Only

Samples were:
1) Shipped or hand-delivered
2) Temperature (°C): 2.9°C
3) Received in good condition: (Y) or N
4) pH checked by: N/A
5) Labels checked by: JB 7/27/11

Project#: 1121C03346 Proj. Name: LMC WILMINGTON
Company: TETRA TECH
Report to: Steve Vekasi
Address: 250 ANDOVER ST SUITE 200
WILMINGTON, MA 01887
Phone: 928-474-8444
Quote #:
PO# (if required):

Matrix Key:
C = Concrete, WP = Wipe, WW = Wastewater, SW = Surface Water, E = Extract, GW = Groundwater, DW = Drinking Water, S = Soil / Sludge, O = Oil, X = Other

Station Identification	Sample Date	Sample Time	Preservation: Unpres	4°C	HNO3	H2SO4	NaOH	Methanol	Other	Matrix	No. of Containers	pH checked	Analytics Sample #
LMC-CONCRETE-NC-1	7/27/11	13:00	X					X		C	10		70594-1
LMC-CONCRETE-NC-2		13:30	X					X		C	10		2
LMC-SO-TRENCH-1		14:00	X					X		S	6		3
LMC-TB02		0700	X					X		X	2		4

Circle and/or Write Required Analysis

Field Filtered? Y or N	TOC 9060	624.2 624	625 8270	PAH only SIM	Pesticides 8081 608	PCB: 8082 608	Sulfide? Y or N	TPH: 8015DRO 8015GRO 8100M	EPH: Full (includes targets)	VPH: Full (includes targets)	14 METALS* Metals RCRA8 PP13 TAL23 Other*	% SOLIDS
N						2		2	2	1	2	2
N						2		2	2	1	2	2
N								2	1			2
N										1		

Email Results to:
stephen.vekasi@tetratech.com

Turnaround Time (TAT)
☐ 24 Hours* ☐ 48 Hours*
☐ 72 Hours* ☒ 5 Days*
☐ 10 Days
*Fee may apply; lab approval required

Comments, Additional Analyses, or Special Instructions:
* List requested metals here
* METALS ARE MASS DEP 14 LIST
MASS DEP EPH & VPH
MCP PRESUMPTIVE CERTAINTY IS REQUIRED FOR THIS PROJECT
(*) 1 jar said "LMC-CONCRETE" on label JB 7/27/11

Project Requirements:
*Fee may apply

Report Type:
☒ MCP* ☐ Level II* ☐ CTRCP* ☐ Level III* ☐ DOD* ☐ Level IV* ☐ Standard

State:
☐ NH ☒ MA ☐ ME ☐ CT ☐ RI Other:

State Standard: S-1/GW-1 (eg. S-1 or GW-1)

EDD Required: Y* N
Type:

Sampler Name (Print): Michael Alroy
Relinquished By Sampler: M. Alroy — Date: 7/27/11 — Time: 1440 — Received By:
Relinquished By: — Date: — Time: — Received By:
Relinquished By: — Date: — Time: — Received By: 7/27/11

Page ___ of ___

Analytics Report 70594 page 0072 of 73