

ALPHA ANALYTICAL LABORATORIES

Eight Walkup Drive
Westborough, Massachusetts 01581-1019
(508) 898-9220 www.alphalab.com

MA:M-MA086 NH:200301-A CT:PH-0574 ME:MA086 RI:65 NY:11148 NJ:MA935 Army:USACE

CERTIFICATE OF ANALYSIS

Client: ERM-New England Laboratory Job Number: L0413850
Address: 399 Boylston Street
6th Floor
Boston, MA 02116 Date Received: 10-DEC-2004
Attn: Jeremy Picard Date Reported: 15-DEC-2004
Project Number: 13606 Delivery Method: Alpha
Site: RAYTHEON WAYLAND

The following questions pertain only to MCP Analytical Methods

An affirmative response to questions A,B,C & D is required for "Presumptive Certainty" status

- A. Were all samples received by the laboratory in a condition consistent with those described on their Chain-of-Custody documentation for the data set? YES
- B. Were all QA/QC procedures required for the specified analytical method(s) included in this report followed, including the requirement to note and discuss in a narrative QC data that did not meet appropriate performance standards or guidelines? YES
- C. Does the analytical data included in this report meet all the requirements for "Presumptive Certainty", as described in section 2.0 of the MADEP document CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data"? YES
- D. VPH and EPH methods only: Was the VPH or EPH method run without significant modifications, as specified in Section 11.3? NA

A response to questions E and F is required for "Presumptive Certainty" status

- E. Were all QC performance standards and recommendations for the specified method(s) achieved? YES
- F. Were results for all analyte-list compounds/elements for the specified method(s) reported? NO

Any answers of NO to the above questions are addressed in the case 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 report is, to the best of my knowledge and belief, accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized by: James Todaro
This document electronically signed

ALPHA ANALYTICAL LABORATORIES

Laboratory Job Number: L0413850
Date Reported: 15-DEC-2004

ALPHA SAMPLE NUMBER	CLIENT IDENTIFICATION	SAMPLE LOCATION
L0413850-01	MW-41	WAYLAND, MA
L0413850-02	MW-201D	WAYLAND, MA
L0413850-03	MW-307	WAYLAND, MA

ALPHA ANALYTICAL LABORATORIES
NARRATIVE REPORT

Laboratory Job Number: L0413850

MCP Related Narratives

Report Submission

In reference to question F, at the client's request, the samples were analyzed only for the compounds specified on the chain of custody.

Metals

L0413850-02 was re-analyzed on a 5x dilution in order to quantitate the Sodium within the range of the calibration. The result is reported as a greater than value for the compound that exceeded the calibration on the initial analysis. The re-analysis was performed only for the compound which exceeded the range of the calibration.

ALPHA ANALYTICAL LABORATORIES
 CERTIFICATE OF ANALYSIS

Laboratory Sample Number: L0413850-01
 MW-41

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE		ID
					PREP	ANAL	
Volatile Organics by MCP 8260B continued				60 8260B	1215 02:55 BT		
Surrogate (s)	Recovery			QC Criteria			
1,2-Dichloroethane-d4	113.	%		70-130			
Toluene-d8	102.	%		70-130			
4-Bromofluorobenzene	104.	%		70-130			
Dibromofluoromethane	108.	%		70-130			

Comments: Complete list of References and Glossary of Terms found in Addendum I

ALPHA ANALYTICAL LABORATORIES
 CERTIFICATE OF ANALYSIS

MA:M-MA086 NH:200301-A CT:PH-0574 ME:MA086 RI:65 NY:11148 NJ:MA935 Army:USACE

Laboratory Sample Number: L0413850-02
 MW-201D
 Sample Matrix: WATER

Date Collected: 09-DEC-2004 10:45
 Date Received : 10-DEC-2004
 Date Reported : 15-DEC-2004

Condition of Sample: Satisfactory

Field Prep: Field Filtered

Number & Type of Containers: 2-Plastic,2-Vial

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE		ID
					PREP	ANAL	
Chloride	120	mg/l	10.	1 9251		1211 16:22	ED
Dissolved Metals by MCP 6000/7000 series				60 6010B			
Sodium, Dissolved	>20	mg/l	2	60 6010B	1213 18:00	1214 16:54	RW
Sodium, Dissolved	47.	mg/l	10.	60 6010B	1213 18:00	1214 18:31	RW
Volatile Organics by MCP 8260B				60 8260B		1215 03:31	BT
Methylene chloride	ND	ug/l	10.				
1,1-Dichloroethane	ND	ug/l	1.5				
Chloroform	ND	ug/l	1.5				
Carbon tetrachloride	ND	ug/l	1.0				
1,2-Dichloropropane	ND	ug/l	3.5				
Dibromochloromethane	ND	ug/l	1.0				
1,1,2-Trichloroethane	ND	ug/l	1.5				
Tetrachloroethene	ND	ug/l	1.0				
Chlorobenzene	ND	ug/l	1.0				
1,2-Dichloroethane	ND	ug/l	1.0				
1,1,1-Trichloroethane	ND	ug/l	1.0				
Bromodichloromethane	ND	ug/l	1.0				
trans-1,3-Dichloropropene	ND	ug/l	1.0				
cis-1,3-Dichloropropene	ND	ug/l	1.0				
Bromoform	ND	ug/l	4.0				
1,1,2,2-Tetrachloroethane	ND	ug/l	1.0				
Chloromethane	ND	ug/l	5.0				
Vinyl chloride	ND	ug/l	2.0				
Chloroethane	ND	ug/l	2.0				
1,1-Dichloroethene	ND	ug/l	1.0				
trans-1,2-Dichloroethene	ND	ug/l	1.5				
Trichloroethene	7.1	ug/l	1.0				
1,2-Dichlorobenzene	ND	ug/l	5.0				
1,3-Dichlorobenzene	ND	ug/l	5.0				
1,4-Dichlorobenzene	ND	ug/l	5.0				
cis-1,2-Dichloroethene	ND	ug/l	1.0				
Dichlorodifluoromethane	ND	ug/l	10.				
1,2-Dibromoethane	ND	ug/l	4.0				
1,3-Dichloropropane	ND	ug/l	5.0				
1,1,1,2-Tetrachloroethane	ND	ug/l	1.0				
o-Chlorotoluene	ND	ug/l	5.0				

Comments: Complete list of References and Glossary of Terms found in Addendum I

ALPHA ANALYTICAL LABORATORIES
CERTIFICATE OF ANALYSIS

Laboratory Sample Number: L0413850-02
MW-201D

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE		ID
					PREP	ANAL	
Volatile Organics by MCP 8260B continued				60 8260B	1215 03:31		BT
p-Chlorotoluene	ND	ug/l	5.0				
Hexachlorobutadiene	ND	ug/l	2.0				
1,2,4-Trichlorobenzene	ND	ug/l	5.0				
Surrogate (s)	Recovery			QC Criteria			
1,2-Dichloroethane-d4	107.	%		70-130			
Toluene-d8	102.	%		70-130			
4-Bromofluorobenzene	99.0	%		70-130			
Dibromofluoromethane	102.	%		70-130			

Comments: Complete list of References and Glossary of Terms found in Addendum I

ALPHA ANALYTICAL LABORATORIES
 CERTIFICATE OF ANALYSIS

Laboratory Sample Number: L0413850-03
 MW-307

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE		ID
					PREP	ANAL	
Volatile Organics by MCP 8260B continued				60 8260B	1215 04:06 BT		
Surrogate(s)	Recovery			QC Criteria			
1,2-Dichloroethane-d4	109.	%		70-130			
Toluene-d8	102.	%		70-130			
4-Bromofluorobenzene	103.	%		70-130			
Dibromofluoromethane	105.	%		70-130			

Comments: Complete list of References and Glossary of Terms found in Addendum I

ALPHA ANALYTICAL LABORATORIES
QUALITY ASSURANCE BATCH DUPLICATE ANALYSIS

Laboratory Job Number: L0413850

Parameter	Value 1	Value 2	Units	RPD	RPD Limits
Chloride for sample(s) 02 (L0413851-02, WG189153)					
Chloride	96.	95.	mg/l	1	7

ALPHA ANALYTICAL LABORATORIES
QUALITY ASSURANCE BATCH SPIKE ANALYSES

Laboratory Job Number: L0413850

Parameter	% Recovery	QC Criteria
Chloride LCS for sample(s) 02 (WG189153)		
Chloride	93	84-110
Chloride SPIKE for sample(s) 02 (L0413851-01, WG189153)		
Chloride	90	58-140

ALPHA ANALYTICAL LABORATORIES
 QUALITY ASSURANCE BATCH LCS/LCSD ANALYSIS

Laboratory Job Number: L0413850

Parameter	LCS %	LCSD %	RPD	RPD Limit	QC Limits
Dissolved Metals by MCP 6000/7000 series for sample(s) 01-03 (WG189238-2, WG189238)					
Arsenic, Dissolved	102	103	1	20	75-125
Sodium, Dissolved	100	100	0	20	75-125
Volatile Organics by MCP 8260B for sample(s) 01-03 (WG189445-1, WG189445)					
Methylene chloride	88	92	4	25	70-130
1,1-Dichloroethane	93	96	3	25	70-130
Chloroform	88	91	3	25	70-130
Carbon tetrachloride	96	99	3	25	70-130
1,2-Dichloropropane	93	97	4	25	70-130
Dibromochloromethane	88	96	9	25	70-130
1,1,2-Trichloroethane	90	95	5	25	70-130
Tetrachloroethene	91	91	0	25	70-130
Chlorobenzene	92	97	5	25	70-130
Trichlorofluoromethane	94	100	6	25	70-130
1,2-Dichloroethane	94	99	5	25	70-130
1,1,1-Trichloroethane	90	92	2	25	70-130
Bromodichloromethane	87	93	7	25	70-130
trans-1,3-Dichloropropene	90	97	7	25	70-130
cis-1,3-Dichloropropene	92	97	5	25	70-130
1,1-Dichloropropene	91	95	4	25	70-130
Bromoform	85	89	5	50	70-130
1,1,2,2-Tetrachloroethane	85	94	10	25	70-130
Benzene	91	92	1	25	70-130
Toluene	91	94	3	25	70-130
Ethylbenzene	93	96	3	25	70-130
Chloromethane	90	89	1	50	70-130
Bromomethane	98	101	3	50	70-130
Vinyl chloride	92	88	4	25	70-130
Chloroethane	90	90	0	25	70-130
1,1-Dichloroethene	90	88	2	25	70-130
trans-1,2-Dichloroethene	97	93	4	25	70-130
Trichloroethene	88	94	7	25	70-130
1,2-Dichlorobenzene	86	94	9	25	70-130
1,3-Dichlorobenzene	86	94	9	25	70-130
1,4-Dichlorobenzene	88	94	7	25	70-130
Methyl tert butyl ether	88	94	7	25	70-130
p/m-Xylene	92	98	6	25	70-130
o-Xylene	92	96	4	25	70-130
cis-1,2-Dichloroethene	89	91	2	25	70-130
Dibromomethane	94	92	2	25	70-130
1,2,3-Trichloropropane	84	97	14	25	70-130
Styrene	96	100	4	25	70-130
Dichlorodifluoromethane	74	70	6	50	70-130
Acetone	96	97	1	50	70-130
Carbon disulfide	90	90	0	25	70-130
2-Butanone	106	104	2	50	70-130
4-Methyl-2-pentanone	90	97	7	50	70-130
2-Hexanone	108	111	3	50	70-130

ALPHA ANALYTICAL LABORATORIES
 QUALITY ASSURANCE BATCH LCS/LCSD ANALYSIS

Laboratory Job Number: L0413850

Continued

Parameter	LCS %	LCSD %	RPD	RPD Limit	QC Limits
Volatile Organics by MCP 8260B for sample(s) 01-03 (WG189445-1, WG189445)					
Bromochloromethane	88	91	3	25	70-130
Tetrahydrofuran	91	91	0	25	70-130
2,2-Dichloropropane	86	90	5	25	70-130
1,2-Dibromoethane	90	94	4	25	70-130
1,3-Dichloropropane	91	96	5	25	70-130
1,1,1,2-Tetrachloroethane	94	100	6	25	70-130
Bromobenzene	83	93	11	25	70-130
n-Butylbenzene	89	95	7	25	70-130
sec-Butylbenzene	88	93	6	25	70-130
tert-Butylbenzene	86	92	7	25	70-130
o-Chlorotoluene	87	94	8	25	70-130
p-Chlorotoluene	86	93	8	25	70-130
1,2-Dibromo-3-chloropropane	88	100	13	50	70-130
Hexachlorobutadiene	84	92	9	25	70-130
Isopropylbenzene	93	97	4	25	70-130
p-Isopropyltoluene	88	94	7	25	70-130
Naphthalene	86	94	9	25	70-130
n-Propylbenzene	87	94	8	25	70-130
1,2,3-Trichlorobenzene	87	94	8	25	70-130
1,2,4-Trichlorobenzene	87	91	4	25	70-130
1,3,5-Trimethylbenzene	88	94	7	25	70-130
1,2,4-Trimethylbenzene	90	94	4	25	70-130
Ethyl ether	94	97	3	25	70-130
Isopropyl Ether	90	95	5	25	70-130
Ethyl-Tert-Butyl-Ether	86	92	7	25	70-130
Tertiary-Amyl Methyl Ether	85	90	6	25	70-130
1,4-Dioxane	92	92	0	50	70-130
Surrogate (s)					
1,2-Dichloroethane-d4	106	105	1		70-130
Toluene-d8	101	103	2		70-130
4-Bromofluorobenzene	97	100	3		70-130
Dibromofluoromethane	102	102	0		70-130

ALPHA ANALYTICAL LABORATORIES
 QUALITY ASSURANCE BATCH BLANK ANALYSIS

Laboratory Job Number: L0413850

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE		ID
					PREP	ANAL	
Blank Analysis for sample(s) 02 (WG189153-1)							
Chloride	ND	mg/l	1.0	1 9251		1211 16:01	ED
Blank Analysis for sample(s) 01-03 (WG189238-1)							
Dissolved Metals by MCP 6000/7000 series 60 6010B							
Arsenic, Dissolved	ND	mg/l	0.005	60 6010B	1213 18:00	1214 16:08	RW
Sodium, Dissolved	ND	mg/l	2.0	60 6010B	1213 18:00	1214 16:08	RW
Blank Analysis for sample(s) 01-03 (WG189445-3)							
Volatile Organics by MCP 8260B 60 8260B 1214 18:01 BT							
Methylene chloride	ND	ug/l	5.0				
1,1-Dichloroethane	ND	ug/l	0.75				
Chloroform	ND	ug/l	0.75				
Carbon tetrachloride	ND	ug/l	0.50				
1,2-Dichloropropane	ND	ug/l	1.8				
Dibromochloromethane	ND	ug/l	0.50				
1,1,2-Trichloroethane	ND	ug/l	0.75				
Tetrachloroethene	ND	ug/l	0.50				
Chlorobenzene	ND	ug/l	0.50				
Trichlorofluoromethane	ND	ug/l	2.5				
1,2-Dichloroethane	ND	ug/l	0.50				
1,1,1-Trichloroethane	ND	ug/l	0.50				
Bromodichloromethane	ND	ug/l	0.50				
trans-1,3-Dichloropropene	ND	ug/l	0.50				
cis-1,3-Dichloropropene	ND	ug/l	0.50				
1,1-Dichloropropene	ND	ug/l	2.5				
Bromoform	ND	ug/l	2.0				
1,1,2,2-Tetrachloroethane	ND	ug/l	0.50				
Benzene	ND	ug/l	0.50				
Toluene	ND	ug/l	0.75				
Ethylbenzene	ND	ug/l	0.50				
Chloromethane	ND	ug/l	2.5				
Bromomethane	ND	ug/l	1.0				
Vinyl chloride	ND	ug/l	1.0				
Chloroethane	ND	ug/l	1.0				
1,1-Dichloroethene	ND	ug/l	0.50				
trans-1,2-Dichloroethene	ND	ug/l	0.75				
Trichloroethene	ND	ug/l	0.50				
1,2-Dichlorobenzene	ND	ug/l	2.5				
1,3-Dichlorobenzene	ND	ug/l	2.5				
1,4-Dichlorobenzene	ND	ug/l	2.5				
Methyl tert butyl ether	ND	ug/l	1.0				
p/m-Xylene	ND	ug/l	0.50				
o-Xylene	ND	ug/l	0.50				
cis-1,2-Dichloroethene	ND	ug/l	0.50				
Dibromomethane	ND	ug/l	5.0				
1,2,3-Trichloropropane	ND	ug/l	5.0				

ALPHA ANALYTICAL LABORATORIES
 QUALITY ASSURANCE BATCH BLANK ANALYSIS

Laboratory Job Number: L0413850

Continued

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE		ID
					PREP	ANAL	
Blank Analysis for sample(s) 01-03 (WG189445-3)							
Volatile Organics by MCP 8260B continued							
				60 8260B		1214 18:01	BT
Styrene	ND	ug/l	0.50				
Dichlorodifluoromethane	ND	ug/l	5.0				
Acetone	ND	ug/l	5.0				
Carbon disulfide	ND	ug/l	5.0				
2-Butanone	ND	ug/l	5.0				
4-Methyl-2-pentanone	ND	ug/l	5.0				
2-Hexanone	ND	ug/l	5.0				
Bromochloromethane	ND	ug/l	2.5				
Tetrahydrofuran	ND	ug/l	10.				
2,2-Dichloropropane	ND	ug/l	2.5				
1,2-Dibromoethane	ND	ug/l	2.0				
1,3-Dichloropropane	ND	ug/l	2.5				
1,1,1,2-Tetrachloroethane	ND	ug/l	0.50				
Bromobenzene	ND	ug/l	2.5				
n-Butylbenzene	ND	ug/l	0.50				
sec-Butylbenzene	ND	ug/l	0.50				
tert-Butylbenzene	ND	ug/l	2.5				
o-Chlorotoluene	ND	ug/l	2.5				
p-Chlorotoluene	ND	ug/l	2.5				
1,2-Dibromo-3-chloropropane	ND	ug/l	2.5				
Hexachlorobutadiene	ND	ug/l	1.0				
Isopropylbenzene	ND	ug/l	0.50				
p-Isopropyltoluene	ND	ug/l	0.50				
Naphthalene	ND	ug/l	2.5				
n-Propylbenzene	ND	ug/l	0.50				
1,2,3-Trichlorobenzene	ND	ug/l	2.5				
1,2,4-Trichlorobenzene	ND	ug/l	2.5				
1,3,5-Trimethylbenzene	ND	ug/l	2.5				
1,2,4-Trimethylbenzene	ND	ug/l	2.5				
Ethyl ether	ND	ug/l	2.5				
Isopropyl Ether	ND	ug/l	2.0				
Ethyl-Tert-Butyl-Ether	ND	ug/l	2.0				
Tertiary-Amyl Methyl Ether	ND	ug/l	2.0				
1,4-Dioxane	ND	ug/l	250				
Surrogate(s)	Recovery			QC Criteria			
1,2-Dichloroethane-d4	107.	%		70-130			
Toluene-d8	102.	%		70-130			
4-Bromofluorobenzene	102.	%		70-130			
Dibromofluoromethane	99.0	%		70-130			

ALPHA ANALYTICAL LABORATORIES
ADDENDUM I

REFERENCES

1. Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - IIIA, 1997.
60. Quality Assurance and Quality Control Requirements and Performance Standards for SW-846 Methods. MADEP BWSC. WSC-CAM-IIA (Revision 4), WSC-CAM-V C (Revision 2), WSC-CAM-IIIA (Revision 5). May 2004.

GLOSSARY OF TERMS AND SYMBOLS

REF Reference number in which test method may be found.
METHOD Method number by which analysis was performed.
ID Initials of the analyst.
ND Not detected in comparison to the reported detection limit.

ug/cart Micrograms per Cartridge.

LIMITATION OF LIABILITIES

Alpha Analytical, Inc. 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, Inc., shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical, Inc. 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, Inc.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding times and splitting of samples in the field.

**ALPHA ANALYTICAL LABORATORIES
LOGIN SPECIFIC INFORMATION**

Laboratory Job Number: L0413850

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent
B	Absent
C	Absent

Container Information

Container ID	Container Type	Cooler	pH	Temp	Pres	Seal	Analysis
L0413850-01A	Vial HCl preserved	B	N/A	1.0 C	Y	Absent	MCP-8260-04
L0413850-01B	Vial HCl preserved	B	N/A	1.0 C	Y	Absent	MCP-8260-04
L0413850-01C	Plastic 250ml HNO3 preserved	B	<2	1.0 C	Y	Absent	MCP-AS-6010S
L0413850-02A	Vial HCl preserved	B	N/A	1.0 C	Y	Absent	MCP-8260-04
L0413850-02B	Vial HCl preserved	B	N/A	1.0 C	Y	Absent	MCP-8260-04
L0413850-02C	Plastic 250ml HNO3 preserved	B	<2	1.0 C	Y	Absent	MCP-NA-6010S
L0413850-02D	Plastic 250ml unpreserved	B	=7	1.0 C	Y	Absent	CL-9251
L0413850-03A	Vial HCl preserved	B	N/A	1.0 C	Y	Absent	MCP-8260-04
L0413850-03B	Vial HCl preserved	B	N/A	1.0 C	Y	Absent	MCP-8260-04
L0413850-03C	Plastic 250ml HNO3 preserved	B	<2	1.0 C	Y	Absent	MCP-AS-6010S

Container Comments

Container ID	Comments
--------------	----------

