

ALPHA ANALYTICAL LABORATORIES

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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: L0504089  
Address: 399 Boylston Street  
6th Floor  
Boston, MA 02116 Date Received: 15-APR-2005  
Attn: Jeremy Picard Date Reported: 21-APR-2005  
Project Number: 28047 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: L0504089  
Date Reported: 21-APR-2005

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ALPHA SAMPLE NUMBER	CLIENT IDENTIFICATION	SAMPLE LOCATION
L0504089-01	NW-208D-20050414-01	WAYLAND, MA
L0504089-02	HA-101-20050414-01	WAYLAND, MA

ALPHA ANALYTICAL LABORATORIES  
NARRATIVE REPORT

Laboratory Job Number: L0504089

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Report Submission

In reference to question F, the samples were analyzed only for the compounds specified on the chain of custody.

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: L0504089-01 Date Collected: 14-APR-2005 19:05  
 NW-208D-20050414-01 Date Received : 15-APR-2005  
 Sample Matrix: WATER Date Reported : 21-APR-2005  
 Condition of Sample: Satisfactory Field Prep: None  
 Number & Type of Containers: 2-Vial

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE PREP ANAL	ID
Volatile Organics by MCP 8260B				60-8260B	0420 15:10	RY
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			
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			
Bromoform	ND	ug/l	2.0			
1,1,2,2-Tetrachloroethane	ND	ug/l	0.50			
Benzene	ND	ug/l	0.50			
Chloromethane	ND	ug/l	2.5			
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	1.9	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			
cis-1,2-Dichloroethene	ND	ug/l	0.50			
Dichlorodifluoromethane	ND	ug/l	5.0			
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			
o-Chlorotoluene	ND	ug/l	2.5			
p-Chlorotoluene	ND	ug/l	2.5			
Hexachlorobutadiene	ND	ug/l	1.0			
1,2,4-Trichlorobenzene	ND	ug/l	2.5			

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

ALPHA ANALYTICAL LABORATORIES  
 CERTIFICATE OF ANALYSIS

Laboratory Sample Number: L0504089-01  
 NW-208D-20050414-01

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE		ID
					PREP	ANAL	
Volatile Organics by MCP 8260B continued				60 8260B	0420 15:10		RY
Surrogate(s)	Recovery			QC Criteria			
1,2-Dichloroethane-d4	108.	%		70-130			
Toluene-d8	97.0	%		70-130			
4-Bromofluorobenzene	108.	%		70-130			
Dibromofluoromethane	103.	%		70-130			

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



ALPHA ANALYTICAL LABORATORIES  
 QUALITY ASSURANCE BATCH LCS/LCSD ANALYSIS

Laboratory Job Number: L0504089

Parameter	LCS %	LCSD %	RPD	RPD Limit	QC Limits
Dissolved Metals by MCP 6000/7000 series for sample(s) 02 (WG199780-2, WG199780-3)					
Arsenic, Dissolved	100	100	0	20	75-125
Volatile Organics by MCP 8260B for sample(s) 01 (WG199592-9, WG199592-10)					
Methylene chloride	94	99	5	25	70-130
1,1-Dichloroethane	86	101	16	25	70-130
Chloroform	100	109	9	25	70-130
Carbon tetrachloride	108	111	3	25	70-130
1,2-Dichloropropane	92	102	10	25	70-130
Dibromochloromethane	86	90	5	25	70-130
1,1,2-Trichloroethane	81	86	6	25	70-130
Tetrachloroethene	100	99	1	25	70-130
Chlorobenzene	93	93	0	25	70-130
1,2-Dichloroethane	99	104	5	25	70-130
1,1,1-Trichloroethane	103	112	8	25	70-130
Bromodichloromethane	92	97	5	25	70-130
trans-1,3-Dichloropropene	80	86	7	25	70-130
cis-1,3-Dichloropropene	88	95	8	25	70-130
Bromoform	90	94	4	50	70-130
1,1,2,2-Tetrachloroethane	84	90	7	25	70-130
Benzene	99	104	5	25	70-130
Chloromethane	85	90	6	50	70-130
Vinyl chloride	95	101	6	25	70-130
Chloroethane	90	98	9	25	70-130
1,1-Dichloroethene	98	107	9	25	70-130
trans-1,2-Dichloroethene	99	106	7	25	70-130
Trichloroethene	102	103	1	25	70-130
1,2-Dichlorobenzene	92	98	6	25	70-130
1,3-Dichlorobenzene	93	96	3	25	70-130
1,4-Dichlorobenzene	92	92	0	25	70-130
Methyl tert butyl ether	78	92	16	25	70-130
cis-1,2-Dichloroethene	92	103	11	25	70-130
Dichlorodifluoromethane	78	82	5	50	70-130
1,2-Dibromoethane	86	90	5	25	70-130
1,3-Dichloropropane	82	89	8	25	70-130
1,1,1,2-Tetrachloroethane	91	92	1	25	70-130
o-Chlorotoluene	91	94	3	25	70-130
p-Chlorotoluene	90	92	2	25	70-130
Hexachlorobutadiene	97	99	2	25	70-130
1,2,4-Trichlorobenzene	101	105	4	25	70-130
Surrogate (s)					
1,2-Dichloroethane-d4	100	106	6		70-130
Toluene-d8	98	99	1		70-130
4-Bromofluorobenzene	101	101	0		70-130
Dibromofluoromethane	98	105	7		70-130

ALPHA ANALYTICAL LABORATORIES  
 QUALITY ASSURANCE BATCH MS/MSD ANALYSIS

Laboratory Job Number: L0504089

Parameter	MS %	MSD %	RPD	RPD Limit	MS/MSD Limits
Volatile Organics by MCP 8260B for sample(s) 01 (L0504025-04, WG199592-2)					
Methylene chloride	105	96	9	30	70-130
1,1-Dichloroethane	94	91	3	30	70-130
Chloroform	111	103	7	30	70-130
Carbon tetrachloride	118	107	10	30	70-130
1,2-Dichloropropane	105	97	8	30	70-130
Dibromochloromethane	103	93	10	30	70-130
1,1,2-Trichloroethane	104	92	12	30	70-130
Tetrachloroethene	110	95	15	30	70-130
Chlorobenzene	104	94	10	30	70-130
1,2-Dichloroethane	115	105	9	30	70-130
1,1,1-Trichloroethane	115	105	9	30	70-130
Bromodichloromethane	105	97	8	30	70-130
trans-1,3-Dichloropropene	102	89	14	30	70-130
cis-1,3-Dichloropropene	100	95	5	30	70-130
Bromoform	107	97	10	30	70-130
1,1,2,2-Tetrachloroethane	102	97	5	30	70-130
Benzene	108	97	11	30	70-130
Chloromethane	83	77	8	30	70-130
Vinyl chloride	104	92	12	30	70-130
Chloroethane	98	86	13	30	70-130
1,1-Dichloroethene	113	104	8	30	70-130
trans-1,2-Dichloroethene	112	101	10	30	70-130
Trichloroethene	111	98	12	30	70-130
1,2-Dichlorobenzene	103	96	7	30	70-130
1,3-Dichlorobenzene	102	97	5	30	70-130
1,4-Dichlorobenzene	103	94	9	30	70-130
Methyl tert butyl ether	88	90	2	30	70-130
cis-1,2-Dichloroethene	108	100	8	30	70-130
Dichlorodifluoromethane	88	81	8	30	70-130
1,2-Dibromoethane	104	94	10	30	70-130
1,3-Dichloropropane	102	92	10	30	70-130
1,1,1,2-Tetrachloroethane	108	95	13	30	70-130
o-Chlorotoluene	103	94	9	30	70-130
p-Chlorotoluene	99	92	7	30	70-130
Hexachlorobutadiene	99	92	7	30	70-130
1,2,4-Trichlorobenzene	104	102	2	30	70-130
Surrogate (s)					
1,2-Dichloroethane-d4	113	108	5		70-130
Toluene-d8	100	96	4		70-130
4-Bromofluorobenzene	101	101	0		70-130
Dibromofluoromethane	112	106	6		70-130



ALPHA ANALYTICAL LABORATORIES  
 QUALITY ASSURANCE BATCH BLANK ANALYSIS

Laboratory Job Number: L0504089

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE PREP      ANAL	ID
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Blank Analysis for sample(s) 02 (WG199780-1)						
Dissolved Metals by MCP 6000/7000 series						
				60 6010B		

Arsenic, Dissolved	ND	mg/l	0.005	60 6010B	0420 18:00	0421 12:07 MG
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Blank Analysis for sample(s) 01 (WG199592-11)						
Volatile Organics by MCP 8260B						
				60 8260B	0420 10:40 RY	

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			
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			
Bromoform	ND	ug/l	2.0			
1,1,2,2-Tetrachloroethane	ND	ug/l	0.50			
Benzene	ND	ug/l	0.50			
Chloromethane	ND	ug/l	2.5			
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			
cis-1,2-Dichloroethene	ND	ug/l	0.50			
Dichlorodifluoromethane	ND	ug/l	5.0			
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			
o-Chlorotoluene	ND	ug/l	2.5			
p-Chlorotoluene	ND	ug/l	2.5			
Hexachlorobutadiene	ND	ug/l	1.0			
1,2,4-Trichlorobenzene	ND	ug/l	2.5			

Surrogate (s)	Recovery		QC Criteria			
1,2-Dichloroethane-d4	110.	%	70-130			
Toluene-d8	95.0	%	70-130			
4-Bromofluorobenzene	102.	%	70-130			

ALPHA ANALYTICAL LABORATORIES  
QUALITY ASSURANCE BATCH BLANK ANALYSIS

Laboratory Job Number: L0504089

Continued

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE PREP	ID ANAL
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Blank Analysis for sample(s) 01 (WG199592-11)

Volatile Organics by MCP 8260B continued				60 8260B		0420 10:40 RY
Dibromofluoromethane	108.	%	70-130			

**ALPHA ANALYTICAL LABORATORIES  
ADDENDUM I**

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**REFERENCES**

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.  
NI Not Ignitable.  
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: L0504089

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Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent

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Container Information

Container ID	Container Type	Cooler	pH	Temp	Pres	Seal	Analysis
L0504089-01A	Vial HCl preserved	A	N/A	3.6 C	Y	Absent	MCP-8260-04
L0504089-01B	Vial HCl preserved	A	N/A	3.6 C	Y	Absent	MCP-8260-04
L0504089-02A	Plastic 250ml HNO3 preserved	A	<2	3.6 C	Y	Absent	MCP-AS-6010S

Container Comments

Container ID	Comments
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