

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: L0408109  
Address: 399 Boylston Street  
6th Floor  
Boston, MA 02116 Date Received: 23-JUL-2004  
Attn: Jeremy Picard Date Reported: 30-JUL-2004  
Project Number: 13606.03 Delivery Method: Alpha  
Site: RAYTHEON

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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? NO
- 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.

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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.

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Authorized by: Scott McLean  
This document electronically signed

ALPHA ANALYTICAL LABORATORIES

Laboratory Job Number: L0408109  
Date Reported: 30-JUL-2004

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ALPHA SAMPLE NUMBER	CLIENT IDENTIFICATION	SAMPLE LOCATION
L0408109-01	MW-41	WAYLAND, MA
L0408109-02	FD-10	WAYLAND, MA
L0408109-03	MW-307	WAYLAND, MA
L0408109-04	HA-101	WAYLAND, MA
L0408109-05	FD-09	WAYLAND, MA

ALPHA ANALYTICAL LABORATORIES  
NARRATIVE REPORT

Laboratory Job Number: L0408109

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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.

Volatile Organics

In reference to question E:

The LCS/LCSD % recoveries for Chloromethane, associated with L0408109-02, -03 and -05, are above the acceptance criteria for the method.

The LCS/LCSD % recoveries for Dichlorodifluoromethane and Hexachlorobutadiene, associated with L0408109-01, are above the acceptance criteria for the method.

The MS/MSD % recoveries for Dichlorodifluoromethane and Hexachlorobutadiene, as well as the MSD % recoveries for Vinyl Chloride and Chloroethane, are above the acceptance criteria for the method.

**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

<b>Laboratory Sample Number:</b> L0408109-01	<b>Date Collected:</b> 22-JUL-2004 11:30
MW-41	<b>Date Received :</b> 23-JUL-2004
<b>Sample Matrix:</b> WATER	<b>Date Reported :</b> 30-JUL-2004
<b>Condition of Sample:</b> Satisfactory	<b>Field Prep:</b> Field Filtered
<b>Number &amp; Type of Containers:</b> 3-Plastic,3-Vial	

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE PREP ANAL	ID
Dissolved Metals by MCP 6000/7000 series						
Arsenic, Dissolved	0.0018	mg/l	0.0010	54 6020A	0726 10:40 0727 16:05	RW
Volatile Organics by MCP 8260B						
Methylene chloride	ND	ug/l	5.0	60 8260B	0730 14:41	RY
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	0.53	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			
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	3.6	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			
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: L0408109-01  
 MW-41

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE		ID
					PREP	ANAL	
Volatile Organics by MCP 8260B continued				60 8260B	0730 14:41		RY
Surrogate(s)	Recovery			QC Criteria			
1,2-Dichloroethane-d4	111.	%		70-130			
Toluene-d8	99.0	%		70-130			
4-Bromofluorobenzene	108.	%		70-130			
Dibromofluoromethane	106.	%		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:	L0408109-02	Date Collected:	22-JUL-2004 00:00
	FD-10	Date Received :	23-JUL-2004
Sample Matrix:	WATER	Date Reported :	30-JUL-2004
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	0729 22:46	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			
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			
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	3.6	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			
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: L0408109-02  
 FD-10

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE		ID
					PREP	ANAL	
Volatile Organics by MCP 8260B continued				60 8260B	0729 22:46		BT
Surrogate(s)	Recovery			QC Criteria			
1,2-Dichloroethane-d4	102.	%		70-130			
Toluene-d8	101.	%		70-130			
4-Bromofluorobenzene	108.	%		70-130			
Dibromofluoromethane	100.	%		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

<b>Laboratory Sample Number:</b> L0408109-03	<b>Date Collected:</b> 22-JUL-2004 13:30
MW-307	<b>Date Received :</b> 23-JUL-2004
<b>Sample Matrix:</b> WATER	<b>Date Reported :</b> 30-JUL-2004
<b>Condition of Sample:</b> Satisfactory	<b>Field Prep:</b> Field Filtered
<b>Number &amp; Type of Containers:</b> 1-Plastic,2-Vial	

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE PREP ANAL	ID
Dissolved Metals by MCP 6000/7000 series						
Arsenic, Dissolved	0.0356	mg/l	0.0010	54 6020A	0726 10:40 0727 16:33	RW
Volatile Organics by MCP 8260B						
Methylene chloride	ND	ug/l	5.0	60 8260B	0729 23:26	BT
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			
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			
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: L0408109-03  
 MW-307

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE		ID
					PREP	ANAL	
Volatile Organics by MCP 8260B continued				60 8260B	0729 23:26		BT
Surrogate(s)	Recovery			QC Criteria			
1,2-Dichloroethane-d4	102.	%		70-130			
Toluene-d8	101.	%		70-130			
4-Bromofluorobenzene	108.	%		70-130			
Dibromofluoromethane	99.0	%		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

<b>Laboratory Sample Number:</b> L0408109-04 HA-101 <b>Sample Matrix:</b> WATER  <b>Condition of Sample:</b> Satisfactory  <b>Number &amp; Type of Containers:</b> 2-Plastic	<b>Date Collected:</b> 22-JUL-2004 15:10 <b>Date Received :</b> 23-JUL-2004 <b>Date Reported :</b> 30-JUL-2004  <b>Field Prep:</b> Field Filtered
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PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE PREP      ANAL	ID
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Dissolved Metals by MCP 6000/7000 series

Arsenic, Dissolved	0.0094	mg/l	0.0010	54 6020A	0726 10:40 0727 16:39 RW	
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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

<b>Laboratory Sample Number:</b> L0408109-05	<b>Date Collected:</b> 22-JUL-2004 00:00
FD-09	<b>Date Received :</b> 23-JUL-2004
<b>Sample Matrix:</b> WATER	<b>Date Reported :</b> 30-JUL-2004
<b>Condition of Sample:</b> Satisfactory	<b>Field Prep:</b> None

**Number & Type of Containers:** 2-Vial

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE PREP ANAL	ID
Volatile Organics by MCP 8260B				60 8260B	0730 00:05 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			
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			
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			
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: L0408109-05  
 FD-09

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE		ID
					PREP	ANAL	
Volatile Organics by MCP 8260B continued				60 8260B	0730 00:05		BT
Surrogate(s)	Recovery			QC Criteria			
1,2-Dichloroethane-d4	105.	%		70-130			
Toluene-d8	102.	%		70-130			
4-Bromofluorobenzene	108.	%		70-130			
Dibromofluoromethane	98.0	%		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: L0408109

Parameter	LCS %	LCSD %	RPD	RPD Limit	QC Limits
Dissolved Metals by MCP 6000/7000 series for sample(s) 01,03-04 (WG176677-2, WG176677)					
Arsenic, Dissolved	89	89	0		75-125
Volatile Organics by MCP 8260B for sample(s) 02-03,05 (WG177146-1, WG177146)					
Methylene chloride	94	93	1	25	70-130
1,1-Dichloroethane	94	92	2	25	70-130
Chloroform	94	91	3	25	70-130
Carbon tetrachloride	92	90	2	25	70-130
1,2-Dichloropropane	94	93	1	25	70-130
Dibromochloromethane	81	83	2	25	70-130
1,1,2-Trichloroethane	95	100	5	25	70-130
Tetrachloroethene	86	81	6	25	70-130
Chlorobenzene	93	92	1	25	70-130
Trichlorofluoromethane	95	93	2	25	70-130
1,2-Dichloroethane	91	93	2	25	70-130
1,1,1-Trichloroethane	94	90	4	25	70-130
Bromodichloromethane	84	84	0	25	70-130
trans-1,3-Dichloropropene	90	92	2	25	70-130
cis-1,3-Dichloropropene	91	92	1	25	70-130
1,1-Dichloropropene	89	85	5	25	70-130
Bromoform	76	76	0	50	70-130
1,1,2,2-Tetrachloroethane	93	96	3	25	70-130
Benzene	96	92	4	25	70-130
Toluene	96	95	1	25	70-130
Ethylbenzene	98	95	3	25	70-130
Chloromethane	152	139	9	50	70-130
Bromomethane	110	113	3	50	70-130
Vinyl chloride	97	94	3	25	70-130
Chloroethane	95	91	4	25	70-130
1,1-Dichloroethene	89	84	6	25	70-130
trans-1,2-Dichloroethene	90	87	3	25	70-130
Trichloroethene	90	86	5	25	70-130
1,2-Dichlorobenzene	92	89	3	25	70-130
1,3-Dichlorobenzene	92	89	3	25	70-130
1,4-Dichlorobenzene	93	89	4	25	70-130
Methyl tert butyl ether	107	112	5	25	70-130
p/m-Xylene	98	95	3	25	70-130
o-Xylene	97	95	2	25	70-130
cis-1,2-Dichloroethene	94	92	2	25	70-130
Dibromomethane	90	93	3	25	70-130
1,2,3-Trichloropropane	94	96	2	25	70-130
Styrene	98	98	0	25	70-130
Dichlorodifluoromethane	124	116	7	50	70-130
Acetone	96	97	1	50	70-130
Carbon disulfide	85	82	4	25	70-130
2-Butanone	97	104	7	50	70-130
4-Methyl-2-pentanone	94	92	2	50	70-130
2-Hexanone	96	100	4	50	70-130
Bromochloromethane	90	91	1	25	70-130

ALPHA ANALYTICAL LABORATORIES  
QUALITY ASSURANCE BATCH LCS/LCSD ANALYSIS

Laboratory Job Number: L0408109

Continued

Parameter	LCS %	LCSD %	RPD	RPD Limit	QC Limits
Volatile Organics by MCP 8260B for sample(s) 02-03,05 (WG177146-1, WG177146)					
Tetrahydrofuran	99	102	3	25	70-130
2,2-Dichloropropane	101	96	5	25	70-130
1,2-Dibromoethane	90	96	6	25	70-130
1,3-Dichloropropane	93	95	2	25	70-130
1,1,1,2-Tetrachloroethane	92	94	2	25	70-130
Bromobenzene	96	94	2	25	70-130
n-Butylbenzene	98	90	9	25	70-130
sec-Butylbenzene	97	90	7	25	70-130
tert-Butylbenzene	98	92	6	25	70-130
o-Chlorotoluene	100	93	7	25	70-130
p-Chlorotoluene	100	93	7	25	70-130
1,2-Dibromo-3-chloropropane	83	88	6	50	70-130
Hexachlorobutadiene	97	88	10	25	70-130
Isopropylbenzene	97	90	7	25	70-130
p-Isopropyltoluene	98	93	5	25	70-130
Naphthalene	74	80	8	25	70-130
n-Propylbenzene	99	93	6	25	70-130
1,2,3-Trichlorobenzene	78	84	7	25	70-130
1,2,4-Trichlorobenzene	81	82	1	25	70-130
1,3,5-Trimethylbenzene	99	92	7	25	70-130
1,2,4-Trimethylbenzene	99	92	7	25	70-130
Ethyl ether	92	98	6	25	70-130
Isopropyl Ether	102	103	1	25	70-130
Ethyl-Tert-Butyl-Ether	96	100	4	25	70-130
Tertiary-Amyl Methyl Ether	99	103	4	25	70-130
1,4-Dioxane	93	106	13	50	70-130
Surrogate(s)					
1,2-Dichloroethane-d4	98	101	3		70-130
Toluene-d8	104	102	2		70-130
4-Bromofluorobenzene	108	107	1		70-130
Dibromofluoromethane	98	98	0		70-130
Volatile Organics by MCP 8260B for sample(s) 01 (WG177184-1, WG177184)					
Methylene chloride	105	102	3	25	70-130
1,1-Dichloroethane	104	111	7	25	70-130
Chloroform	109	112	3	25	70-130
Carbon tetrachloride	106	116	9	25	70-130
1,2-Dichloropropane	101	103	2	25	70-130
Dibromochloromethane	104	105	1	25	70-130
1,1,2-Trichloroethane	105	104	1	25	70-130
Tetrachloroethene	119	119	0	25	70-130
Chlorobenzene	103	108	5	25	70-130
1,2-Dichloroethane	116	113	3	25	70-130
1,1,1-Trichloroethane	111	117	5	25	70-130
Bromodichloromethane	113	116	3	25	70-130
trans-1,3-Dichloropropene	95	96	1	25	70-130

ALPHA ANALYTICAL LABORATORIES  
 QUALITY ASSURANCE BATCH LCS/LCSD ANALYSIS

Laboratory Job Number: L0408109

Continued

Parameter	LCS %	LCSD %	RPD	RPD Limit	QC Limits
Volatile Organics by MCP 8260B for sample(s) 01 (WG177184-1, WG177184)					
cis-1,3-Dichloropropene	101	104	3	25	70-130
Bromoform	111	112	1	50	70-130
1,1,2,2-Tetrachloroethane	102	100	2	25	70-130
Chloromethane	119	116	3	50	70-130
Vinyl chloride	118	117	1	25	70-130
Chloroethane	119	117	2	25	70-130
1,1-Dichloroethene	90	99	10	25	70-130
trans-1,2-Dichloroethene	95	101	6	25	70-130
Trichloroethene	104	108	4	25	70-130
1,2-Dichlorobenzene	106	108	2	25	70-130
1,3-Dichlorobenzene	105	109	4	25	70-130
1,4-Dichlorobenzene	105	107	2	25	70-130
cis-1,2-Dichloroethene	102	103	1	25	70-130
Dichlorodifluoromethane	138	145	5	50	70-130
1,2-Dibromoethane	104	105	1	25	70-130
1,3-Dichloropropane	102	102	0	25	70-130
1,1,1,2-Tetrachloroethane	109	111	2	25	70-130
o-Chlorotoluene	108	112	4	25	70-130
p-Chlorotoluene	103	108	5	25	70-130
Hexachlorobutadiene	153	164	7	25	70-130
1,2,4-Trichlorobenzene	98	100	2	25	70-130
Surrogate(s)					
1,2-Dichloroethane-d4	109	106	3		70-130
Toluene-d8	98	97	1		70-130
4-Bromofluorobenzene	98	96	2		70-130
Dibromofluoromethane	109	106	3		70-130

**ALPHA ANALYTICAL LABORATORIES**  
**QUALITY ASSURANCE BATCH MS/MSD ANALYSIS**

Laboratory Job Number: L0408109

Parameter	MS %	MSD %	RPD	RPD Limit	MS/MSD Limits
Dissolved Metals by MCP 6000/7000 series for sample(s) 01,03-04 (L0408109-01, WG176677)					
Arsenic, Dissolved	100	96	4	20	75-125
Volatile Organics by MCP 8260B for sample(s) 01 (L0408109-01, WG177184)					
Methylene chloride	94	103	9	30	70-130
1,1-Dichloroethane	106	110	4	30	70-130
Chloroform	104	112	7	30	70-130
Carbon tetrachloride	113	122	8	30	70-130
1,2-Dichloropropane	99	105	6	30	70-130
Dibromochloromethane	102	111	8	30	70-130
1,1,2-Trichloroethane	101	108	7	30	70-130
Tetrachloroethene	111	119	7	30	70-130
Chlorobenzene	105	113	7	30	70-130
1,2-Dichloroethane	106	114	7	30	70-130
1,1,1-Trichloroethane	115	121	5	30	70-130
Bromodichloromethane	107	116	8	30	70-130
trans-1,3-Dichloropropene	92	99	7	30	70-130
cis-1,3-Dichloropropene	97	107	10	30	70-130
Bromoform	103	117	13	30	70-130
1,1,2,2-Tetrachloroethane	96	107	11	30	70-130
Chloromethane	100	112	11	30	70-130
Vinyl chloride	126	136	8	30	70-130
Chloroethane	130	139	7	30	70-130
1,1-Dichloroethene	93	100	7	30	70-130
trans-1,2-Dichloroethene	96	105	9	30	70-130
Trichloroethene	107	115	7	30	70-130
1,2-Dichlorobenzene	102	109	7	30	70-130
1,3-Dichlorobenzene	106	114	7	30	70-130
1,4-Dichlorobenzene	102	110	8	30	70-130
cis-1,2-Dichloroethene	104	111	7	30	70-130
Dichlorodifluoromethane	134	150	11	30	70-130
1,2-Dibromoethane	99	106	7	30	70-130
1,3-Dichloropropane	98	106	8	30	70-130
1,1,1,2-Tetrachloroethane	109	118	8	30	70-130
o-Chlorotoluene	107	114	6	30	70-130
p-Chlorotoluene	103	111	7	30	70-130
Hexachlorobutadiene	150	158	5	30	70-130
1,2,4-Trichlorobenzene	92	95	3	30	70-130
Surrogate(s)					
1,2-Dichloroethane-d4	107	106	1		70-130
Toluene-d8	97	97	0		70-130
4-Bromofluorobenzene	95	97	2		70-130
Dibromofluoromethane	101	105	4		70-130



**ALPHA ANALYTICAL LABORATORIES**  
**QUALITY ASSURANCE BATCH BLANK ANALYSIS**

Laboratory Job Number: L0408109

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE		ID
					PREP	ANAL	
Blank Analysis for sample(s) 01,03-04 (WG176677-1)							
Dissolved Metals by MCP 6000/7000 series							
Arsenic, Dissolved	ND	mg/l	0.0010	54 6020A	0726 10:40	0727 15:21	RW
Blank Analysis for sample(s) 02-03,05 (WG177146-3)							
Volatile Organics by MCP 8260B							
				60 8260B		0729 17:27	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				
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				

ALPHA ANALYTICAL LABORATORIES  
QUALITY ASSURANCE BATCH BLANK ANALYSIS

Laboratory Job Number: L0408109

Continued

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE		ID
					PREP	ANAL	
Blank Analysis for sample(s) 02-03,05 (WG177146-3)							
Volatile Organics by MCP 8260B continued				60 8260B		0729 17:27 BT	
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	102.	%		70-130			
Toluene-d8	101.	%		70-130			
4-Bromofluorobenzene	109.	%		70-130			
Dibromofluoromethane	98.0	%		70-130			
Blank Analysis for sample(s) 01 (WG177184-3)							
Volatile Organics by MCP 8260B				60 8260B		0730 10:02 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				

ALPHA ANALYTICAL LABORATORIES  
 QUALITY ASSURANCE BATCH BLANK ANALYSIS

Laboratory Job Number: L0408109

Continued

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE		ID
					PREP	ANAL	
Blank Analysis for sample(s) 01 (WG177184-3)							
Volatile Organics by MCP 8260B continued				60 8260B		0730 10:02	RY
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				
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				
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	111.	%		70-130			
Toluene-d8	98.0	%		70-130			
4-Bromofluorobenzene	104.	%		70-130			
Dibromofluoromethane	108.	%		70-130			

**ALPHA ANALYTICAL LABORATORIES  
ADDENDUM I**

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**REFERENCES**

54. Compendium of Quality Assurance and Quality Control Requirements and Performance Standards for Selected Analytical Methods. MADEP BWSC. Final Methods. May 2003.
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.

Please note that all solid samples are reported on dry weight basis unless noted otherwise.

**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: L0408109**

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Were project specific reporting limits specified? YES

**Cooler Information**

Cooler	Custody Seal
A	Absent

---

**Container Information**

Container ID	Container Type	Cooler	pH	Temp	Pres	Seal	Analysis
L0408109-01A	Vial HCl preserved	A	N/A	1.6C	Y	Absent	MCP-8260-04
L0408109-01B	Vial HCl preserved	A	N/A	1.6C	Y	Absent	MCP-8260-04
L0408109-01C	Plastic 250ml HNO3 preserved	A	<2	1.6C	Y	Absent	MCP-8260-04
L0408109-01D	Vial HCl preserved	A	N/A	1.6C	Y	Absent	MCP-8260-04
L0408109-01E	Plastic 250ml HNO3 preserved	A	<2	1.6C	Y	Absent	MCP-AS-6020S
L0408109-01F	Plastic 250ml HNO3 preserved	A	<2	1.6C	Y	Absent	MCP-AS-6020S
L0408109-02A	Vial HCl preserved	A	N/A	1.6C	Y	Absent	MCP-8260-04
L0408109-02B	Vial HCl preserved	A	N/A	1.6C	Y	Absent	MCP-8260-04
L0408109-03A	Vial HCl preserved	A	N/A	1.6C	Y	Absent	MCP-8260-04
L0408109-03B	Vial HCl preserved	A	N/A	1.6C	Y	Absent	MCP-8260-04
L0408109-03C	Plastic 250ml HNO3 preserved	A	<2	1.6C	Y	Absent	MCP-AS-6020S
L0408109-04A	Plastic 250ml HNO3 preserved	A	<2	1.6C	Y	Absent	MCP-AS-6020S
L0408109-04C	Plastic 250ml HNO3 preserved	A	<2	1.6C	Y	Absent	MCP-AS-6020S
L0408109-05A	Vial HCl preserved	A	N/A	1.6C	Y	Absent	MCP-8260-04
L0408109-05B	Vial HCl preserved	A	N/A	1.6C	Y	Absent	MCP-8260-04

**Container Comments**

Container ID	Comments
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# CHAIN OF CUSTODY

PAGE 1 OF 1

Date Rec'd in Lab: 7-23-04

ALPHA Job #: 26408109

Eight Walkup Drive Westborough, MA 01581  
TEL: 508-898-9220 FAX: 508-898-9193

### Client Information

Client: ERM

Address: 379 Bayshore St Flk Boston MA 02116

Phone: 617 646 7800

Fax: 617 267 6447

Email:

### Project Information

Project Name: Rutherford

Project Location: Weymouth, MA

Project #: 13666 JCS

Project Manager: J Ricard

ALPHA Quote #:

### Turn-Around Time

Standard

RUSH (only confirmed if pre-approved)

Date Due: 7-30-04 Time:

These samples have been previously analyzed by Alpha  
Other Project Specific Requirements/Comments/Detection Limits:

\* Field Filtered using 0.45 micron filter

### Report Information - Data Deliverables

FAX

EMAIL

ADDEX  Add'l Deliverables

### Regulatory Requirements/Report Limits

State/Fed Program

Criteria

### Billing Information

Same as Client Info

PO #:

### MCP PRESUMPTIVE CERTAINTY - THESE QUESTIONS MUST BE ANSWERED

- Yes  No Are MCP Analytical Methods Required?
- Yes  No Are Drinking Water Samples Submitted?
- Yes  No Have you met minimum field QC requirements?

ANALYSIS  
802i Chlorinated  
diss Arsenic \*

### SAMPLE HANDLING

- Filtration  Done
  - Not needed
  - Lab to do
  - Preservation
  - Lab to do
- (Please specify below)

### Sample Specific Comments

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection		Sample Matrix	Sampler's Initials	Date	Time	Analysis	Sample Specific Comments
		Date	Time						
8109	MUS-41	7/22/04	1130	GW	VZ	2	1		
17	MS/DMW-41	7/22/04	1130	GW	VZ	2	1		
12	FD-10	7/22/04	2400	GW	VZ	2	2		
13	MUS-307	7/22/04	1330	GW	VZ	2	1		(No Arsenic Analysis)
14	HA-101	7/22/04	1510	GW	VZ	2	1		
15	FD-09	7/22/04	2400	GW	VZ	2	2		

### QUESTIONS ABOVE MUST BE ANSWERED FOR PRESUMPTIVE CERTAINTY

IS YOUR PROJECT MCP?

Relinquished By: [Signature] 7/23/04  
Date/Time: 1:10  
Received By: [Signature] 7-23-04  
Date/Time: 7:35 AM '04

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 Alphas Payment Terms. See reverse side.