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

Address: 399 Boylston Street
6th Floor
Boston, MA 02116

Attn: Jeremy Picard

Project Number: 0028046

Site: FORMER RAYTHEON FACILITY

Laboratory Job Number: L0513062

Date Received: 28-OCT-2005

Date Reported: 04-NOV-2005

Delivery Method: Alpha

ALPHA SAMPLE NUMBER	CLIENT IDENTIFICATION	SAMPLE LOCATION
L0513062-01	MW-554D-20051028-01	WAYLAND, MA
L0513062-02	MW-554MA-20051028-01	WAYLAND, MA
L0513062-03	MW-554S-20051028-01	WAYLAND, MA
L0513062-04	MW-554MB-20051028-01	WAYLAND, MA
L0513062-05	MW-555S-20051028-01	WAYLAND, MA
L0513062-06	MW-555MA-20051028-01	WAYLAND, MA
L0513062-07	MW-555MB-20051028-01	WAYLAND, MA
L0513062-08	MW-555D-20051028-01	WAYLAND, MA
L0513062-09	MW-556S-20051028-01	WAYLAND, MA
L0513062-10	MW-556M-20051028-01	WAYLAND, MA
L0513062-11	MW-556D-20051028-01	WAYLAND, MA
L0513062-12	DUP-001-20051028-01	WAYLAND, MA

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: _____
Technical Director

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: L0513062-01
MW-554D-20051028-01
Sample Matrix: WATER

Date Collected: 28-OCT-2005 11:35
Date Received : 28-OCT-2005
Date Reported : 04-NOV-2005

Condition of Sample: Satisfactory

Field Prep: None

Number & Type of Containers: 2-Vial

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE PREP	DATE ANAL	ID
Dissolved Gases by GC				53 -		1103 12:03	PS
Methane	430.	ug/l	0.300				
Ethene	0.539	ug/l	0.500				
Ethane	2.88	ug/l	0.500				

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: L0513062-02
MW-554MA-20051028-01
Sample Matrix: WATER

Date Collected: 28-OCT-2005 09:55
Date Received : 28-OCT-2005
Date Reported : 04-NOV-2005

Condition of Sample: Satisfactory

Field Prep: None

Number & Type of Containers: 2-Vial

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE PREP	DATE ANAL	ID
Dissolved Gases by GC				53 -		1103 12:18	PS
Methane	1.79	ug/l	0.300				
Ethene	ND	ug/l	0.500				
Ethane	ND	ug/l	0.500				

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: L0513062-03
MW-554S-20051028-01
Sample Matrix: WATER

Date Collected: 28-OCT-2005 11:45
Date Received : 28-OCT-2005
Date Reported : 04-NOV-2005

Condition of Sample: Satisfactory

Field Prep: None

Number & Type of Containers: 2-Vial

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE PREP	DATE ANAL	ID
Dissolved Gases by GC				53 -		1103 12:34	PS
Methane	8.56	ug/l	0.300				
Ethene	1.27	ug/l	0.500				
Ethane	0.546	ug/l	0.500				

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: L0513062-04
MW-554MB-20051028-01
Sample Matrix: WATER

Date Collected: 28-OCT-2005 10:45
Date Received : 28-OCT-2005
Date Reported : 04-NOV-2005

Condition of Sample: Satisfactory

Field Prep: None

Number & Type of Containers: 2-Vial

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE PREP	DATE ANAL	ID
Dissolved Gases by GC				53 -		1103 12:48	PS
Methane	16.8	ug/l	0.300				
Ethene	1.07	ug/l	0.500				
Ethane	0.890	ug/l	0.500				

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: L0513062-05
MW-555S-20051028-01
Sample Matrix: WATER

Date Collected: 28-OCT-2005 11:10
Date Received : 28-OCT-2005
Date Reported : 04-NOV-2005

Condition of Sample: Satisfactory

Field Prep: None

Number & Type of Containers: 2-Vial

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE PREP	DATE ANAL	ID
Dissolved Gases by GC				53 -		1103 13:05	PS
Methane	7.06	ug/l	0.300				
Ethene	1.19	ug/l	0.500				
Ethane	1.42	ug/l	0.500				

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: L0513062-06
MW-555MA-20051028-01
Sample Matrix: WATER

Date Collected: 28-OCT-2005 09:35
Date Received : 28-OCT-2005
Date Reported : 04-NOV-2005

Condition of Sample: Satisfactory

Field Prep: None

Number & Type of Containers: 2-Vial

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE PREP	DATE ANAL	ID
Dissolved Gases by GC				53 -		1103 13:43	PS
Methane	3.54	ug/l	0.300				
Ethene	ND	ug/l	0.500				
Ethane	0.523	ug/l	0.500				

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: L0513062-07
MW-555MB-20051028-01
Sample Matrix: WATER

Date Collected: 28-OCT-2005 09:50
Date Received : 28-OCT-2005
Date Reported : 04-NOV-2005

Condition of Sample: Satisfactory

Field Prep: None

Number & Type of Containers: 2-Vial

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE PREP	DATE ANAL	ID
Dissolved Gases by GC				53 -		1103 13:58	PS
Methane	30.8	ug/l	0.300				
Ethene	1.23	ug/l	0.500				
Ethane	2.15	ug/l	0.500				

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: L0513062-08
MW-555D-20051028-01
Sample Matrix: WATER

Date Collected: 28-OCT-2005 11:55
Date Received : 28-OCT-2005
Date Reported : 04-NOV-2005

Condition of Sample: Satisfactory

Field Prep: None

Number & Type of Containers: 2-Vial

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE PREP	DATE ANAL	ID
Dissolved Gases by GC				53 -		1103 14:13	PS
Methane	245.	ug/l	0.300				
Ethene	0.978	ug/l	0.500				
Ethane	2.35	ug/l	0.500				

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: L0513062-09
MW-556S-20051028-01
Sample Matrix: WATER

Date Collected: 28-OCT-2005 14:40
Date Received : 28-OCT-2005
Date Reported : 04-NOV-2005

Condition of Sample: Satisfactory

Field Prep: None

Number & Type of Containers: 2-Vial

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE PREP	DATE ANAL	ID
Dissolved Gases by GC				53 -		1103 14:28	PS
Methane	48.5	ug/l	0.300				
Ethene	1.59	ug/l	0.500				
Ethane	1.82	ug/l	0.500				

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: L0513062-10
MW-556M-20051028-01
Sample Matrix: WATER

Date Collected: 28-OCT-2005 14:35
Date Received : 28-OCT-2005
Date Reported : 04-NOV-2005

Condition of Sample: Satisfactory

Field Prep: None

Number & Type of Containers: 2-Vial

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE PREP	DATE ANAL	ID
Dissolved Gases by GC				53 -		1103 14:46	PS
Methane	2.42	ug/l	0.300				
Ethene	ND	ug/l	0.500				
Ethane	ND	ug/l	0.500				

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: L0513062-11
MW-556D-20051028-01
Sample Matrix: WATER

Date Collected: 28-OCT-2005 15:15
Date Received : 28-OCT-2005
Date Reported : 04-NOV-2005

Condition of Sample: Satisfactory

Field Prep: None

Number & Type of Containers: 2-Vial

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE PREP	DATE ANAL	ID
Dissolved Gases by GC				53 -		1103 15:02	PS
Methane	93.5	ug/l	0.300				
Ethene	ND	ug/l	0.500				
Ethane	0.506	ug/l	0.500				

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: L0513062-12
DUP-001-20051028-01
Sample Matrix: WATER

Date Collected: 28-OCT-2005 00:00
Date Received : 28-OCT-2005
Date Reported : 04-NOV-2005

Condition of Sample: Satisfactory

Field Prep: None

Number & Type of Containers: 2-Vial

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE PREP	DATE ANAL	ID
Dissolved Gases by GC				53 -		1103 15:20	PS
Methane	91.7	ug/l	0.300				
Ethene	ND	ug/l	0.500				
Ethane	0.600	ug/l	0.500				

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

ALPHA ANALYTICAL LABORATORIES
QUALITY ASSURANCE BATCH DUPLICATE ANALYSIS

Laboratory Job Number: L0513062

Parameter	Value 1	Value 2	Units	RPD	RPD Limits
Dissolved Gases by GC for sample(s) 01-12 (L0513062-09, WG219569-1)					
Methane	48.5	45.7	ug/l	6	25
Ethene	1.59	1.56	ug/l	2	25
Ethane	1.82	1.65	ug/l	10	25

ALPHA ANALYTICAL LABORATORIES
QUALITY ASSURANCE BATCH SPIKE ANALYSES

Laboratory Job Number: L0513062

Parameter	% Recovery	QC Criteria
Dissolved Gases by GC LCS for sample(s) 01-12 (WG219569-2)		
Methane	81	80-120
Ethene	89	80-120
Ethane	86	80-120
Dissolved Gases by GC SPIKE for sample(s) 01-12 (L0513062-05, WG219569-4)		
Methane	81	80-120
Ethene	93	80-120
Ethane	89	80-120

ALPHA ANALYTICAL LABORATORIES
QUALITY ASSURANCE BATCH BLANK ANALYSIS

Laboratory Job Number: L0513062

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE PREP	DATE ANAL	ID
Blank Analysis for sample(s) 01-12 (WG219569-3)							
Dissolved Gases by GC				53 -		1103 11:39	PS
Methane	ND	ug/l	0.300				
Ethene	ND	ug/l	0.500				
Ethane	ND	ug/l	0.500				

REFERENCES

53. Analysis of Dissolved Methane, Ethane & Ethylene in Groundwater by a Standard Gas Chromatographic Technique, Kampbell & Vandegrift, EPA-OK, Journal of Chrom, Vol 36, May 1998 & Technical Guidance for the Natural Attenuation Indicators, EPA-NE, July 2001.

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.

CHAIN OF CUSTODY

PAGE 1 OF 2

Date Rec'd in Lab: 10/28

ALPHA Job #: L0513062

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

Client Information

Client: ERM
Address: 399 Boylston St
Boston MA 02116
Phone: 617-646-7800
Fax:
Email:
☐ These samples have been previously analyzed by Alpha

Project Information

Project Name: Raytheon Wayland
Project Location: Wayland MA
Project #: 0028046
Project Manager: J. Picard
ALPHA Quote #:

Turn-Around Time

☑ Standard ☐ RUSH (only confirmed if pre-approved!)
Date Due: 11/4 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

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?

Other Project Specific Requirements/Comments/Detection Limits:
* field filtered

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	8260 VOCs	NO3, SO4, Alkalinity	Diss Fe & Mn *	TOC	Methane, Ethane, Ethene	TKN, T-Phosphorus						Sample Specific Comments	Total # Bottles
3062-1	MW-554D-20051028-01	10/28/05	11:35	GW	CR	✓	✓	✓	✓	✓	✓							9
2	MW-554Ma-20051028-01	10/28/05	9:55	GW	CR	✓	✓	✓	✓	✓	✓							9
3	MW-554S-20051028-01	10/28/05	11:45	GW	EB	✓	✓	✓	✓	✓	✓							9
4	MW-554Mb-20051028-01	10/28/05	10:45	GW	EB	✓	✓	✓	✓	✓	✓							9
	MW-555S-20051028-01	10/28/05	11:10	GW	CR	✓	✓	✓	✓	✓	✓							9
6	MW-555Ma-20051028-01	10/28/05	9:35	GW	CR	✓	✓	✓	✓	✓	✓							9
7	MW-555Mb-20051028-01	10/28/05	9:50	GW	JN	✓	✓	✓	✓	✓	✓							9
8	MW-555D-20051028-01	10/28/05	11:55	GW	JN	✓	✓	✓	✓	✓	✓							9
9	MW-556S-20051028-01	10/28/05	14:40	GW	EB	✓	✓	✓	✓	✓	✓							9
10	MW-556M-20051028-01	10/28/05	14:35	GW	JN	✓	✓	✓	✓	✓	✓							9

SAMPLE HANDLING
Filtration
☐ Done
☐ Not needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

Container Type	V	P	P	V	V	P
Preservative	B	A	G	D	B	D

QUESTIONS ABOVE MUST BE ANSWERED FOR PRESUMPTIVE CERTAINTY

IS YOUR PROJECT MCP ?

Relinquished By:	Date/Time	Received By:	Date/Time
[signature]	10/28/05 1650	[signature]	10/28/05 1650
[signature]	10/28 1970	[signature]	10/28 1970

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 Payment Terms. See reverse side.

FORM NO: 01-01(rev. 14-May-04)

CHAIN OF CUSTODY

PAGE 2 OF 2

Date Rec'd in Lab: 10/28

ALPHA Job #: L0513062

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

Client Information

Client: ERM
Address: 399 Boylston St
Boston MA 02116
Phone: 617 646-7800
Fax:
Email:
☐ These samples have been previously analyzed by Alpha

Project Information

Project Name: Raytheon Wayland
Project Location: Wayland MA
Project #: 0028046
Project Manager: J. Picard
ALPHA Quote #:

Turn-Around Time

☑ Standard ☐ RUSH (only confirmed if pre-approved!)
Date Due: 11/4 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

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?

Other Project Specific Requirements/Comments/Detection Limits:

SAMPLE HANDLING
Filtration
☐ Done
☐ Not needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	8260 VOCs	NO3, SO4, Alk.	DSS, Fe & Mn	TOC	Methane, Ethane, Ethene	TKN - T-Phosphorus	Sample Specific Comments	TOTAL # BOTTLES
3062 11	MW-556D-20051028-01	10/28/05	15:15	GW	CR	✓	✓	✓	✓	✓	✓		9
12	DUP-001-20051028-01	10/28/05	24:00	GW	CR	✓	✓	✓	✓	✓	✓		9
	MW-556M-20051028-01-MS	10/28/05	14:35	GW	JN	✓							2
	MW-556M-20051028-01-MSD	10/28/05	14:35	GW	JN	✓							2

QUESTIONS ABOVE MUST BE ANSWERED FOR PRESUMPTIVE CERTAINTY

IS YOUR PROJECT MCP ?

Container Type	V	P	P	V	V	P
Preservative	B	A	C	D	B	D

Relinquished By:	Date/Time	Received By:	Date/Time
[illegible]	10/28/05 1030	[illegible]	10/28/05
[illegible]	10/28/05 1930	[illegible]	10/28/05 1930

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 Payment Terms. See reverse side.

FORM NO: 01-01 (rev. 14-May-04)