GROUNDWATER ANALYTICAL

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September 14, 2005

Mr. Kevin Trainer
GeoInsight, Inc.
5 Lan Drive
Second Floor
Westford, MA 01886

LABORATORY REPORT

Project: **Buzzards Bay/3871-002**
Lab ID: **86975**
Received: **08-30-05**

Dear Kevin:

Enclosed are the analytical results for the above referenced project. The project was processed for Standard turnaround.

This letter authorizes the release of the analytical results, and should be considered a part of this report. This report contains a sample receipt report detailing the samples received, a project narrative indicating project changes and non-conformances, a quality control report, and a statement of our state certifications.

The analytical results contained in this report meet all applicable NELAC standards, except as may be specifically noted, or described in the project narrative. This report may only be used or reproduced in its entirety.

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.

Should you have any questions concerning this report, please do not hesitate to contact me.

Sincerely,

Eric H. Jensen
Operations Manager

EHJ/smd
Enclosures

GROUNDWATER ANALYTICAL

Sample Receipt Report

Project: **Buzzards Bay/3871-002**
Client: **GeoInsight, Inc.**
Lab ID: **86975**

Delivery: **Hand**
Airbill: **n/a**
Lab Receipt: **08-30-05**

Temperature: **4.8'C**
Chain of Custody: **Present**
Custody Seal(s): **n/a**

Lab ID	Field ID		Matrix	Sampled	Method				Notes
86975-1	W2A02-P2-M-01		Soil	8/29/05 0:00	MA DEP EPH with PAHs by 8270C-Mod SIM				
Con ID	Container	Vendor	QC Lot	Preserv	QC Lot	Prep	Ship		
C668655	120 mL Amber Glass	Industrial	BX17921	None	n/a	n/a	n/a		

Lab ID	Field ID		Matrix	Sampled	Method				Notes
86975-2	W2A02-P2-M-02		Soil	8/29/05 0:00	MA DEP EPH with PAHs by 8270C-Mod SIM				
Con ID	Container	Vendor	QC Lot	Preserv	QC Lot	Prep	Ship		
C668622	120 mL Amber Glass	Industrial	BX17916	None	n/a	n/a	n/a		

Lab ID	Field ID		Matrix	Sampled	Method				Notes
86975-3	W2A02-P2-M-03		Soil	8/29/05 0:00	MA DEP EPH with PAHs by 8270C-Mod SIM				
Con ID	Container	Vendor	QC Lot	Preserv	QC Lot	Prep	Ship		
C668637	120 mL Amber Glass	Industrial	BX17916	None	n/a	n/a	n/a		

Lab ID	Field ID		Matrix	Sampled	Method				Notes
86975-4	W2A02-P2-M-04		Soil	8/29/05 0:00	MA DEP EPH with PAHs by 8270C-Mod SIM				
Con ID	Container	Vendor	QC Lot	Preserv	QC Lot	Prep	Ship		
C668614	120 mL Amber Glass	Industrial	BX17916	None	n/a	n/a	n/a		

Lab ID	Field ID		Matrix	Sampled	Method				Notes
86975-5	W2A10-P2-M-01		Soil	8/29/05 0:00	MA DEP EPH with PAHs by 8270C-Mod SIM				
Con ID	Container	Vendor	QC Lot	Preserv	QC Lot	Prep	Ship		
C668684	120 mL Amber Glass	Industrial	BX17917	None	n/a	n/a	n/a		

Lab ID	Field ID		Matrix	Sampled	Method				Notes
86975-6	W2A10-P2-M-02		Soil	8/29/05 0:00	MA DEP EPH with PAHs by 8270C-Mod SIM				
Con ID	Container	Vendor	QC Lot	Preserv	QC Lot	Prep	Ship		
C668671	120 mL Amber Glass	Industrial	BX17917	None	n/a	n/a	n/a		

Lab ID	Field ID		Matrix	Sampled	Method				Notes
86975-7	W2A10-P2-M-03		Soil	8/29/05 0:00	MA DEP EPH with PAHs by 8270C-Mod SIM				
Con ID	Container	Vendor	QC Lot	Preserv	QC Lot	Prep	Ship		
C668625	120 mL Amber Glass	Industrial	BX17916	None	n/a	n/a	n/a		

Lab ID	Field ID		Matrix	Sampled	Method				Notes
86975-8	W2A10-P2-M-04		Soil	8/29/05 0:00	MA DEP EPH with PAHs by 8270C-Mod SIM				
Con ID	Container	Vendor	QC Lot	Preserv	QC Lot	Prep	Ship		
C668627	120 mL Amber Glass	Industrial	BX17916	None	n/a	n/a	n/a		

Lab ID	Field ID		Matrix	Sampled	Method				Notes
86975-9	W2A11-P2-LIT-01		Soil	8/29/05 0:00	MA DEP EPH with PAHs by 8270C-Mod SIM				
Con ID	Container	Vendor	QC Lot	Preserv	QC Lot	Prep	Ship		
C668642	120 mL Amber Glass	Industrial	BX17921	None	n/a	n/a	n/a		

Lab ID	Field ID		Matrix	Sampled	Method				Notes
86975-10	W2A11-P2-LIT-02		Soil	8/29/05 0:00	MA DEP EPH with PAHs by 8270C-Mod SIM				
Con ID	Container	Vendor	QC Lot	Preserv	QC Lot	Prep	Ship		
C668647	120 mL Amber Glass	Industrial	BX17921	None	n/a	n/a	n/a		

GROUNDWATER ANALYTICAL

Sample Receipt Report (Continued)

Project: **Buzzards Bay/3871-002**
Client: **GeoInsight, Inc.**
Lab ID: **86975**

Delivery: **Hand**
Airbill: **n/a**
Lab Receipt: **08-30-05**

Temperature: **4.8'C**
Chain of Custody: **Present**
Custody Seal(s): **n/a**

Lab ID	Field ID		Matrix	Sampled	Method				Notes
86975-11	W2A11-P2-UIT-01		Soil	8/29/05 0:00	MA DEP EPH with PAHs by 8270C-Mod SIM				
Con ID	**Container**	**Vendor**	**QC Lot**	**Preserv**	**QC Lot**	**Prep**	**Ship**		
C668661	120 mL Amber Glass	Industrial	BX17921	None	n/a	n/a	n/a		

Lab ID	Field ID		Matrix	Sampled	Method				Notes
86975-12	W2A11-P2-UIT-02		Soil	8/29/05 0:00	MA DEP EPH with PAHs by 8270C-Mod SIM				
Con ID	**Container**	**Vendor**	**QC Lot**	**Preserv**	**QC Lot**	**Prep**	**Ship**		
C668644	120 mL Amber Glass	Industrial	BX17921	None	n/a	n/a	n/a		

Lab ID	Field ID		Matrix	Sampled	Method				Notes
86975-13	DDD-P2-01		Soil	8/29/05 0:00	MA DEP EPH with PAHs by 8270C-Mod SIM				
Con ID	**Container**	**Vendor**	**QC Lot**	**Preserv**	**QC Lot**	**Prep**	**Ship**		
C668685	120 mL Amber Glass	Industrial	BX17917	None	n/a	n/a	n/a		

Lab ID	Field ID		Matrix	Sampled	Method				Notes
86975-14	DDD-P2-02		Soil	8/29/05 0:00	MA DEP EPH with PAHs by 8270C-Mod SIM				
Con ID	**Container**	**Vendor**	**QC Lot**	**Preserv**	**QC Lot**	**Prep**	**Ship**		
C668674	120 mL Amber Glass	Industrial	BX17917	None	n/a	n/a	n/a		

GROUNDWATER ANALYTICAL

Massachusetts DEP EPH Method
Extractable Petroleum Hydrocarbons by GC/FID

Field ID:	**W2A02-P2-M-01**	Matrix:	**Soil**
Project:	**Buzzards Bay/3871-002**	Container:	**120 mL Amber Glass**
Client:	**GeoInsight, Inc.**	Preservation:	**Cool**
Laboratory ID:	**86975-01**	QC Batch ID:	**EP-2138-M**
Sampled:	**08-29-05 00:00**	Instrument ID:	**GC-7 HP 5890**
Received:	**08-30-05 20:21**	Sample Weight:	**15 g**
Extracted:	**09-08-05 11:00**	Final Volume:	**1 mL**
Analyzed (AL):	**09-12-05 22:20**	% Solids:	**63**
Analyzed (AR):	**09-12-05 23:04**	Aliphatic Dilution Factor:	**1**
Analyst:	**MM**	Aromatic Dilution Factor:	**1**

EPH Ranges	Concentration	Notes	Units	Reporting Limit
n-C9 to n-C18 Aliphatic Hydrocarbons †	BRL		mg/Kg	47
n-C19 to n-C36 Aliphatic Hydrocarbons †	BRL		mg/Kg	47
n-C11 to n-C22 Aromatic Hydrocarbons †◊	**52**		mg/Kg	47
Unadjusted n-C11 to n-C22 Aromatic Hydrocarbons †	54		mg/Kg	47

QC Surrogate Compound		Spiked	Measured	Recovery	QC Limits
Fractionation:	2-Fluorobiphenyl	4.2	3.4	**82 %**	40 - 140 %
	2-Bromonaphthalene	4.2	3.5	**84 %**	40 - 140 %
Extraction:	Chloro-octadecane	4.2	2.6	**61 %**	40 - 140 %
	ortho-Terphenyl	4.2	3.9	**92 %**	40 - 140 %

QA/QC Certification

1. Were all QA/QC procedures required by the method followed?	Yes
2. Were all performance/acceptance standards for the required QA/QC procedures achieved?	Yes
3. Were any significant modifications made to the method, as specified in Section 11.3.1.1?	No

Method non-conformances indicated above are detailed below on this data report, or in the accompanying project narrative and project quality control report. Release of this data is authorized by the accompanying signed project cover letter. The accompanying cover letter, project narrative and quality control report are considered part of this data report.

Method Reference: Method for the Determination of Extractable Petroleum Hydrocarbons, MA DEP (Revision 1.1, 2004).
Sample extraction performed by microwave accelerated solvent extraction technique. Results are reported on a dry weight basis.

Report Notations:

BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample size and dilution.

† Hydrocarbon range data excludes concentrations of any surrogate(s) and/or internal standards eluting in that range.

◊ n-C11 to n-C22 Aromatic Hydrocarbons range data excludes the method target analyte concentrations.

GROUNDWATER ANALYTICAL

EPA Method 8270C (Modified)
MA DEP EPH Polynuclear Aromatic Hydrocarbons by GC/MS-SIM

Field ID:	W2A02-P2-M-01	Matrix:	Soil
Project:	Buzzards Bay/3871-002	Container:	120 mL Amber Glass
Client:	GeoInsight, Inc.	Preservation:	Cool
Laboratory ID:	86975-01	QC Batch ID:	EP-2138-M
Sampled:	08-29-05 00:00	Instrument ID:	MS-6 HP 6890
Received:	08-30-05 20:21	Sample Volume:	15 g
Extracted:	09-08-05 11:00	Final Volume:	1 mL
Analyzed:	09-13-05 23:55	Percent Solids:	63
Analyst:	JJT	Dilution Factor:	1

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
91-20-3	Naphthalene	15	j	ug/Kg	16
91-57-6	2-Methylnaphthalene	BRL		ug/Kg	16
208-96-8	Acenaphthylene	8	j	ug/Kg	16
83-32-9	Acenaphthene	15	j	ug/Kg	16
86-73-7	Fluorene	26		ug/Kg	16
85-01-8	Phenanthrene	290		ug/Kg	16
120-12-7	Anthracene	36		ug/Kg	16
206-44-0	Fluoranthene	350		ug/Kg	16
129-00-0	Pyrene	350		ug/Kg	16
56-55-3	Benzo[a]anthracene	140		ug/Kg	16
218-01-9	Chrysene	190		ug/Kg	16
205-99-2	Benzo[b]fluoranthene	170		ug/Kg	16
207-08-9	Benzo[k]fluoranthene	64		ug/Kg	16
50-32-8	Benzo[a]pyrene	130		ug/Kg	16
193-39-5	Indeno[1,2,3-c,d]pyrene	90		ug/Kg	16
53-70-3	Dibenzo[a,h]anthracene	31		ug/Kg	16
191-24-2	Benzo[g,h,i]perylene	77		ug/Kg	16

QC Surrogate Compound	Spiked	Measured	Recovery	QC Limits
ortho-Terphenyl	4,200	3,500	82 %	40 - 140 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).
Method modified by use of selected ion monitoring (SIM) in accordance with Section 7.5.5 of the method.
Method protocol modified to include acidification and the surrogate compound in accordance with the MA DEP Method for the Determination of Extractable Petroleum Hydrocarbons.
Sample extraction performed by EPA Method 3546. Results are reported on a dry weight basis.

Report Notations:
BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample size and dilution.
j Indicates an estimated value detected below the reporting limit for the analyte.

GROUNDWATER ANALYTICAL

Massachusetts DEP EPH Method
Extractable Petroleum Hydrocarbons by GC/FID

Field ID:	W2A02-P2-M-02	Matrix:	Soil
Project:	Buzzards Bay/3871-002	Container:	120 mL Amber Glass
Client:	GeoInsight, Inc.	Preservation:	Cool
Laboratory ID:	86975-02	QC Batch ID:	EP-2138-M
Sampled:	08-29-05 00:00	Instrument ID:	GC-7 HP 5890
Received:	08-30-05 20:21	Sample Weight:	15 g
Extracted:	09-08-05 11:00	Final Volume:	1 mL
Analyzed (AL):	09-12-05 23:48	% Solids:	47
Analyzed (AR):	09-13-05 00:33	Aliphatic Dilution Factor:	1
Analyst:	MM	Aromatic Dilution Factor:	1

EPH Ranges	Concentration	Notes	Units	Reporting Limit
n-C9 to n-C18 Aliphatic Hydrocarbons †	BRL		mg/Kg	62
n-C19 to n-C36 Aliphatic Hydrocarbons †	BRL		mg/Kg	62
n-C11 to n-C22 Aromatic Hydrocarbons †◊	BRL		mg/Kg	62
Unadjusted n-C11 to n-C22 Aromatic Hydrocarbons †	BRL		mg/Kg	62

QC Surrogate Compound		Spiked	Measured	Recovery	QC Limits
Fractionation:	2-Fluorobiphenyl	5.5	4.6	82 %	40 - 140 %
	2-Bromonaphthalene	5.5	4.7	84 %	40 - 140 %
Extraction:	Chloro-octadecane	5.5	3.5	64 %	40 - 140 %
	ortho-Terphenyl	5.5	3.6	66 %	40 - 140 %

QA/QC Certification

1. Were all QA/QC procedures required by the method followed?	Yes
2. Were all performance/acceptance standards for the required QA/QC procedures achieved?	Yes
3. Were any significant modifications made to the method, as specified in Section 11.3.1.1?	No

Method non-conformances indicated above are detailed below on this data report, or in the accompanying project narrative and project quality control report. Release of this data is authorized by the accompanying signed project cover letter. The accompanying cover letter, project narrative and quality control report are considered part of this data report.

Method Reference: Method for the Determination of Extractable Petroleum Hydrocarbons, MA DEP (Revision 1.1, 2004). Sample extraction performed by microwave accelerated solvent extraction technique. Results are reported on a dry weight basis.

Report Notations:

BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample size and dilution.

† Hydrocarbon range data excludes concentrations of any surrogate(s) and/or internal standards eluting in that range.

◊ n-C11 to n-C22 Aromatic Hydrocarbons range data excludes the method target analyte concentrations.

GROUNDWATER ANALYTICAL

EPA Method 8270C (Modified)
MA DEP EPH Polynuclear Aromatic Hydrocarbons by GC/MS-SIM

Field ID:	W2A02-P2-M-02	Matrix:	Soil
Project:	Buzzards Bay/3871-002	Container:	120 mL Amber Glass
Client:	GeoInsight, Inc.	Preservation:	Cool
Laboratory ID:	86975-02	QC Batch ID:	EP-2138-M
Sampled:	08-29-05 00:00	Instrument ID:	MS-6 HP 6890
Received:	08-30-05 20:21	Sample Volume:	15 g
Extracted:	09-08-05 11:00	Final Volume:	1 mL
Analyzed:	09-14-05 00:34	Percent Solids:	47
Analyst:	JJT	Dilution Factor:	1

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
91-20-3	Naphthalene	46		ug/Kg	21
91-57-6	2-Methylnaphthalene	24		ug/Kg	21
208-96-8	Acenaphthylene	35		ug/Kg	21
83-32-9	Acenaphthene	48		ug/Kg	21
86-73-7	Fluorene	58		ug/Kg	21
85-01-8	Phenanthrene	630		ug/Kg	21
120-12-7	Anthracene	130		ug/Kg	21
206-44-0	Fluoranthene	1,000		ug/Kg	21
129-00-0	Pyrene	980		ug/Kg	21
56-55-3	Benzo[a]anthracene	470		ug/Kg	21
218-01-9	Chrysene	510		ug/Kg	21
205-99-2	Benzo[b]fluoranthene	550		ug/Kg	21
207-08-9	Benzo[k]fluoranthene	210		ug/Kg	21
50-32-8	Benzo[a]pyrene	540		ug/Kg	21
193-39-5	Indeno[1,2,3-c,d]pyrene	370		ug/Kg	21
53-70-3	Dibenzo[a,h]anthracene	82		ug/Kg	21
191-24-2	Benzo[g,h,i]perylene	380		ug/Kg	21

QC Surrogate Compound	Spiked	Measured	Recovery	QC Limits
ortho-Terphenyl	5,500	3,800	69 %	40 - 140 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).
Method modified by use of selected ion monitoring (SIM) in accordance with Section 7.5.5 of the method.
Method protocol modified to include acidification and the surrogate compound in accordance with the MA DEP Method for the Determination of Extractable Petroleum Hydrocarbons.
Sample extraction performed by EPA Method 3546. Results are reported on a dry weight basis.

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample size and dilution.

GROUNDWATER ANALYTICAL

Massachusetts DEP EPH Method
Extractable Petroleum Hydrocarbons by GC/FID

Field ID:	W2A02-P2-M-03	Matrix:	Soil
Project:	Buzzards Bay/3871-002	Container:	120 mL Amber Glass
Client:	GeoInsight, Inc.	Preservation:	Cool
Laboratory ID:	86975-03	QC Batch ID:	EP-2138-M
Sampled:	08-29-05 00:00	Instrument ID:	GC-7 HP 5890
Received:	08-30-05 20:21	Sample Weight:	16 g
Extracted:	09-08-05 11:00	Final Volume:	1 mL
Analyzed (AL):	09-13-05 01:17	% Solids:	82
Analyzed (AR):	09-13-05 02:01	Aliphatic Dilution Factor:	1
Analyst:	MM	Aromatic Dilution Factor:	1

EPH Ranges	Concentration	Notes	Units	Reporting Limit
n-C9 to n-C18 Aliphatic Hydrocarbons †	BRL		mg/Kg	35
n-C19 to n-C36 Aliphatic Hydrocarbons †	BRL		mg/Kg	35
n-C11 to n-C22 Aromatic Hydrocarbons †◊	BRL		mg/Kg	35
Unadjusted n-C11 to n-C22 Aromatic Hydrocarbons †	BRL		mg/Kg	35

QC Surrogate Compound		Spiked	Measured	Recovery	QC Limits
Fractionation:	2-Fluorobiphenyl	3.2	2.4	75 %	40 - 140 %
	2-Bromonaphthalene	3.2	2.4	76 %	40 - 140 %
Extraction:	Chloro-octadecane	3.2	1.7	53 %	40 - 140 %
	ortho-Terphenyl	3.2	1.7	53 %	40 - 140 %

QA/QC Certification

1. Were all QA/QC procedures required by the method followed?	Yes
2. Were all performance/acceptance standards for the required QA/QC procedures achieved?	Yes
3. Were any significant modifications made to the method, as specified in Section 11.3.1.1?	No

Method non-conformances indicated above are detailed below on this data report, or in the accompanying project narrative and project quality control report. Release of this data is authorized by the accompanying signed project cover letter. The accompanying cover letter, project narrative and quality control report are considered part of this data report.

Method Reference: Method for the Determination of Extractable Petroleum Hydrocarbons, MA DEP (Revision 1.1, 2004). Sample extraction performed by microwave accelerated solvent extraction technique. Results are reported on a dry weight basis.

Report Notations:

BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample size and dilution.

† Hydrocarbon range data excludes concentrations of any surrogate(s) and/or internal standards eluting in that range.

◊ n-C11 to n-C22 Aromatic Hydrocarbons range data excludes the method target analyte concentrations.

GROUNDWATER ANALYTICAL

EPA Method 8270C (Modified)
MA DEP EPH Polynuclear Aromatic Hydrocarbons by GC/MS-SIM

Field ID:	W2A02-P2-M-03	Matrix:	Soil
Project:	Buzzards Bay/3871-002	Container:	120 mL Amber Glass
Client:	GeoInsight, Inc.	Preservation:	Cool
Laboratory ID:	86975-03	QC Batch ID:	EP-2138-M
Sampled:	08-29-05 00:00	Instrument ID:	MS-6 HP 6890
Received:	08-30-05 20:21	Sample Volume:	16 g
Extracted:	09-08-05 11:00	Final Volume:	1 mL
Analyzed:	09-14-05 01:13	Percent Solids:	82
Analyst:	JJT	Dilution Factor:	1

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
91-20-3	Naphthalene	14		ug/Kg	12
91-57-6	2-Methylnaphthalene	7	j	ug/Kg	12
208-96-8	Acenaphthylene	14		ug/Kg	12
83-32-9	Acenaphthene	13		ug/Kg	12
86-73-7	Fluorene	24		ug/Kg	12
85-01-8	Phenanthrene	260		ug/Kg	12
120-12-7	Anthracene	56		ug/Kg	12
206-44-0	Fluoranthene	400		ug/Kg	12
129-00-0	Pyrene	430		ug/Kg	12
56-55-3	Benzo[a]anthracene	220		ug/Kg	12
218-01-9	Chrysene	220		ug/Kg	12
205-99-2	Benzo[b]fluoranthene	200		ug/Kg	12
207-08-9	Benzo[k]fluoranthene	72		ug/Kg	12
50-32-8	Benzo[a]pyrene	200		ug/Kg	12
193-39-5	Indeno[1,2,3-c,d]pyrene	120		ug/Kg	12
53-70-3	Dibenzo[a,h]anthracene	35		ug/Kg	12
191-24-2	Benzo[g,h,i]perylene	120		ug/Kg	12

QC Surrogate Compound	Spiked	Measured	Recovery	QC Limits
ortho-Terphenyl	3,200	1,800	57 %	40 - 140 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).
Method modified by use of selected ion monitoring (SIM) in accordance with Section 7.5.5 of the method.
Method protocol modified to include acidification and the surrogate compound in accordance with the MA DEP Method for the Determination of Extractable Petroleum Hydrocarbons.
Sample extraction performed by EPA Method 3546. Results are reported on a dry weight basis.

Report Notations:
BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample size and dilution.
j Indicates an estimated value detected below the reporting limit for the analyte.

GROUNDWATER ANALYTICAL

Massachusetts DEP EPH Method
Extractable Petroleum Hydrocarbons by GC/FID

Field ID:	W2A02-P2-M-04	Matrix:	Soil
Project:	Buzzards Bay/3871-002	Container:	120 mL Amber Glass
Client:	GeoInsight, Inc.	Preservation:	Cool
Laboratory ID:	86975-04	QC Batch ID:	EP-2138-M
Sampled:	08-29-05 00:00	Instrument ID:	GC-7 HP 5890
Received:	08-30-05 20:21	Sample Weight:	16 g
Extracted:	09-08-05 11:00	Final Volume:	1 mL
Analyzed (AL):	09-13-05 02:45	% Solids:	82
Analyzed (AR):	09-13-05 03:29	Aliphatic Dilution Factor:	1
Analyst:	MM	Aromatic Dilution Factor:	1

EPH Ranges	Concentration	Notes	Units	Reporting Limit
n-C9 to n-C18 Aliphatic Hydrocarbons †	BRL		mg/Kg	35
n-C19 to n-C36 Aliphatic Hydrocarbons †	BRL		mg/Kg	35
n-C11 to n-C22 Aromatic Hydrocarbons †◊	BRL		mg/Kg	35
Unadjusted n-C11 to n-C22 Aromatic Hydrocarbons †	BRL		mg/Kg	35

QC Surrogate Compound		Spiked	Measured	Recovery	QC Limits
Fractionation:	2-Fluorobiphenyl	3.1	2.5	80 %	40 - 140 %
	2-Bromonaphthalene	3.1	2.7	87 %	40 - 140 %
Extraction:	Chloro-octadecane	3.1	2.3	73 %	40 - 140 %
	ortho-Terphenyl	3.1	2.5	80 %	40 - 140 %

QA/QC Certification

1. Were all QA/QC procedures required by the method followed?	Yes
2. Were all performance/acceptance standards for the required QA/QC procedures achieved?	Yes
3. Were any significant modifications made to the method, as specified in Section 11.3.1.1?	No

Method non-conformances indicated above are detailed below on this data report, or in the accompanying project narrative and project quality control report. Release of this data is authorized by the accompanying signed project cover letter. The accompanying cover letter, project narrative and quality control report are considered part of this data report.

Method Reference: Method for the Determination of Extractable Petroleum Hydrocarbons, MA DEP (Revision 1.1, 2004).
Sample extraction performed by microwave accelerated solvent extraction technique. Results are reported on a dry weight basis.

Report Notations:

BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample size and dilution.

† Hydrocarbon range data excludes concentrations of any surrogate(s) and/or internal standards eluting in that range.

◊ n-C11 to n-C22 Aromatic Hydrocarbons range data excludes the method target analyte concentrations.

GROUNDWATER ANALYTICAL

EPA Method 8270C (Modified)
MA DEP EPH Polynuclear Aromatic Hydrocarbons by GC/MS-SIM

Field ID:	**W2A02-P2-M-04**	Matrix:	**Soil**
Project:	**Buzzards Bay/3871-002**	Container:	**120 mL Amber Glass**
Client:	**GeoInsight, Inc.**	Preservation:	**Cool**
Laboratory ID:	**86975-04**	QC Batch ID:	**EP-2138-M**
Sampled:	**08-29-05 00:00**	Instrument ID:	**MS-6 HP 6890**
Received:	**08-30-05 20:21**	Sample Volume:	**16 g**
Extracted:	**09-08-05 11:00**	Final Volume:	**1 mL**
Analyzed:	**09-14-05 01:52**	Percent Solids:	**82**
Analyst:	**JJT**	Dilution Factor:	**1**

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
91-20-3	Naphthalene	7	j	ug/Kg	12
91-57-6	2-Methylnaphthalene	BRL		ug/Kg	12
208-96-8	Acenaphthylene	BRL		ug/Kg	12
83-32-9	Acenaphthene	BRL		ug/Kg	12
86-73-7	Fluorene	BRL		ug/Kg	12
85-01-8	Phenanthrene	10	j	ug/Kg	12
120-12-7	Anthracene	BRL		ug/Kg	12
206-44-0	Fluoranthene	28		ug/Kg	12
129-00-0	Pyrene	29		ug/Kg	12
56-55-3	Benzo[a]anthracene	12		ug/Kg	12
218-01-9	Chrysene	12		ug/Kg	12
205-99-2	Benzo[b]fluoranthene	6	j	ug/Kg	12
207-08-9	Benzo[k]fluoranthene	BRL		ug/Kg	12
50-32-8	Benzo[a]pyrene	BRL		ug/Kg	12
193-39-5	Indeno[1,2,3-c,d]pyrene	13		ug/Kg	12
53-70-3	Dibenzo[a,h]anthracene	13		ug/Kg	12
191-24-2	Benzo[g,h,i]perylene	8	j	ug/Kg	12

QC Surrogate Compound	Spiked	Measured	Recovery	QC Limits
ortho-Terphenyl	3,100	2,400	77 %	40 - 140 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).
Method modified by use of selected ion monitoring (SIM) in accordance with Section 7.5.5 of the method.
Method protocol modified to include acidification and the surrogate compound in accordance with the MA DEP Method for the Determination of Extractable Petroleum Hydrocarbons.
Sample extraction performed by EPA Method 3546. Results are reported on a dry weight basis.

Report Notations:
BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample size and dilution.

j Indicates an estimated value detected below the reporting limit for the analyte.

GROUNDWATER ANALYTICAL

Massachusetts DEP EPH Method
Extractable Petroleum Hydrocarbons by GC/FID

Field ID:	W2A10-P2-M-01	Matrix:	Soil
Project:	Buzzards Bay/3871-002	Container:	120 mL Amber Glass
Client:	GeoInsight, Inc.	Preservation:	Cool
Laboratory ID:	86975-05	QC Batch ID:	EP-2138-M
Sampled:	08-29-05 00:00	Instrument ID:	GC-7 HP 5890
Received:	08-30-05 20:21	Sample Weight:	16 g
Extracted:	09-08-05 11:00	Final Volume:	1 mL
Analyzed (AL):	09-12-05 14:09	% Solids:	59
Analyzed (AR):	09-12-05 14:49	Aliphatic Dilution Factor:	1
Analyst:	MM	Aromatic Dilution Factor:	1

EPH Ranges	Concentration	Notes	Units	Reporting Limit
n-C9 to n-C18 Aliphatic Hydrocarbons †	BRL		mg/Kg	49
n-C19 to n-C36 Aliphatic Hydrocarbons †	BRL		mg/Kg	49
n-C11 to n-C22 Aromatic Hydrocarbons †◊	62		mg/Kg	49
Unadjusted n-C11 to n-C22 Aromatic Hydrocarbons †	63		mg/Kg	49

QC Surrogate Compound		Spiked	Measured	Recovery	QC Limits
Fractionation:	2-Fluorobiphenyl	4.4	3.5	80 %	40 - 140 %
	2-Bromonaphthalene	4.4	3.8	86 %	40 - 140 %
Extraction:	Chloro-octadecane	4.4	3.1	71 %	40 - 140 %
	ortho-Terphenyl	4.4	4.4	100 %	40 - 140 %

QA/QC Certification

1. Were all QA/QC procedures required by the method followed?	Yes
2. Were all performance/acceptance standards for the required QA/QC procedures achieved?	Yes
3. Were any significant modifications made to the method, as specified in Section 11.3.1.1?	No

Method non-conformances indicated above are detailed below on this data report, or in the accompanying project narrative and project quality control report. Release of this data is authorized by the accompanying signed project cover letter. The accompanying cover letter, project narrative and quality control report are considered part of this data report.

Method Reference: Method for the Determination of Extractable Petroleum Hydrocarbons, MA DEP (Revision 1.1, 2004).
Sample extraction performed by microwave accelerated solvent extraction technique. Results are reported on a dry weight basis.

Report Notations:

BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample size and dilution.

† Hydrocarbon range data excludes concentrations of any surrogate(s) and/or internal standards eluting in that range.

◊ n-C11 to n-C22 Aromatic Hydrocarbons range data excludes the method target analyte concentrations.

GROUNDWATER ANALYTICAL

EPA Method 8270C (Modified)
MA DEP EPH Polynuclear Aromatic Hydrocarbons by GC/MS-SIM

Field ID:	**W2A10-P2-M-01**	Matrix:	**Soil**
Project:	**Buzzards Bay/3871-002**	Container:	**120 mL Amber Glass**
Client:	**GeoInsight, Inc.**	Preservation:	**Cool**
Laboratory ID:	**86975-05**	QC Batch ID:	**EP-2138-M**
Sampled:	**08-29-05 00:00**	Instrument ID:	**MS-6 HP 6890**
Received:	**08-30-05 20:21**	Sample Volume:	**16 g**
Extracted:	**09-08-05 11:00**	Final Volume:	**1 mL**
Analyzed:	**09-14-05 02:32**	Percent Solids:	**59**
Analyst:	**JJT**	Dilution Factor:	**1**

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
91-20-3	Naphthalene	**10**	j	ug/Kg	16
91-57-6	2-Methylnaphthalene	BRL		ug/Kg	16
208-96-8	Acenaphthylene	BRL		ug/Kg	16
83-32-9	Acenaphthene	BRL		ug/Kg	16
86-73-7	Fluorene	BRL		ug/Kg	16
85-01-8	Phenanthrene	**12**	j	ug/Kg	16
120-12-7	Anthracene	BRL		ug/Kg	16
206-44-0	Fluoranthene	**31**		ug/Kg	16
129-00-0	Pyrene	**33**		ug/Kg	16
56-55-3	Benzo[a]anthracene	**16**		ug/Kg	16
218-01-9	Chrysene	**90**		ug/Kg	16
205-99-2	Benzo[b]fluoranthene	**49**		ug/Kg	16
207-08-9	Benzo[k]fluoranthene	**9**	j	ug/Kg	16
50-32-8	Benzo[a]pyrene	**66**		ug/Kg	16
193-39-5	Indeno[1,2,3-c,d]pyrene	**34**		ug/Kg	16
53-70-3	Dibenzo[a,h]anthracene	**31**		ug/Kg	16
191-24-2	Benzo[g,h,i]perylene	**42**		ug/Kg	16

QC Surrogate Compound	Spiked	Measured	Recovery	QC Limits
ortho-Terphenyl	4,400	3,200	73 %	40 - 140 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).
Method modified by use of selected ion monitoring (SIM) in accordance with Section 7.5.5 of the method.
Method protocol modified to include acidification and the surrogate compound in accordance with the MA DEP Method for the Determination of Extractable Petroleum Hydrocarbons.
Sample extraction performed by EPA Method 3546. Results are reported on a dry weight basis.

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample size and dilution.

j Indicates an estimated value detected below the reporting limit for the analyte.

GROUNDWATER ANALYTICAL

Massachusetts DEP EPH Method
Extractable Petroleum Hydrocarbons by GC/FID

Field ID:	**W2A10-P2-M-02**	Matrix:	**Soil**
Project:	**Buzzards Bay/3871-002**	Container:	**120 mL Amber Glass**
Client:	**GeoInsight, Inc.**	Preservation:	**Cool**
Laboratory ID:	**86975-06**	QC Batch ID:	**EP-2138-M**
Sampled:	**08-29-05 00:00**	Instrument ID:	**GC-7 HP 5890**
Received:	**08-30-05 20:21**	Sample Weight:	**15 g**
Extracted:	**09-08-05 11:00**	Final Volume:	**1 mL**
Analyzed (AL):	**09-12-05 15:33**	% Solids:	**77**
Analyzed (AR):	**09-12-05 16:18**	Aliphatic Dilution Factor:	**1**
Analyst:	**MM**	Aromatic Dilution Factor:	**1**

EPH Ranges	Concentration	Notes	Units	Reporting Limit
n-C9 to n-C18 Aliphatic Hydrocarbons †	BRL		mg/Kg	38
n-C19 to n-C36 Aliphatic Hydrocarbons †	BRL		mg/Kg	38
n-C11 to n-C22 Aromatic Hydrocarbons †◊	BRL		mg/Kg	38
Unadjusted n-C11 to n-C22 Aromatic Hydrocarbons †	BRL		mg/Kg	38

QC Surrogate Compound		Spiked	Measured	Recovery	QC Limits
Fractionation:	2-Fluorobiphenyl	3.4	2.6	**78 %**	40 - 140 %
	2-Bromonaphthalene	3.4	2.8	**82 %**	40 - 140 %
Extraction:	Chloro-octadecane	3.4	2.7	**80 %**	40 - 140 %
	ortho-Terphenyl	3.4	2.8	**82 %**	40 - 140 %

QA/QC Certification

1. Were all QA/QC procedures required by the method followed?	Yes
2. Were all performance/acceptance standards for the required QA/QC procedures achieved?	Yes
3. Were any significant modifications made to the method, as specified in Section 11.3.1.1?	No

Method non-conformances indicated above are detailed below on this data report, or in the accompanying project narrative and project quality control report. Release of this data is authorized by the accompanying signed project cover letter. The accompanying cover letter, project narrative and quality control report are considered part of this data report.

Method Reference: Method for the Determination of Extractable Petroleum Hydrocarbons, MA DEP (Revision 1.1, 2004).
Sample extraction performed by microwave accelerated solvent extraction technique. Results are reported on a dry weight basis.

Report Notations:

BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample size and dilution.

† Hydrocarbon range data excludes concentrations of any surrogate(s) and/or internal standards eluting in that range.

◊ n-C11 to n-C22 Aromatic Hydrocarbons range data excludes the method target analyte concentrations.

GROUNDWATER ANALYTICAL

EPA Method 8270C (Modified)
MA DEP EPH Polynuclear Aromatic Hydrocarbons by GC/MS-SIM

Field ID:	**W2A10-P2-M-02**	Matrix:	**Soil**
Project:	**Buzzards Bay/3871-002**	Container:	**120 mL Amber Glass**
Client:	**GeoInsight, Inc.**	Preservation:	**Cool**
Laboratory ID:	**86975-06**	QC Batch ID:	**EP-2138-M**
Sampled:	**08-29-05 00:00**	Instrument ID:	**MS-6 HP 6890**
Received:	**08-30-05 20:21**	Sample Volume:	**15 g**
Extracted:	**09-08-05 11:00**	Final Volume:	**1 mL**
Analyzed:	**09-14-05 03:11**	Percent Solids:	**77**
Analyst:	**JJT**	Dilution Factor:	**1**

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
91-20-3	Naphthalene	BRL		ug/Kg	18
91-57-6	2-Methylnaphthalene	BRL		ug/Kg	18
208-96-8	Acenaphthylene	BRL		ug/Kg	18
83-32-9	Acenaphthene	BRL		ug/Kg	18
86-73-7	Fluorene	BRL		ug/Kg	18
85-01-8	Phenanthrene	BRL		ug/Kg	18
120-12-7	Anthracene	BRL		ug/Kg	18
206-44-0	Fluoranthene	BRL		ug/Kg	18
129-00-0	Pyrene	BRL		ug/Kg	18
56-55-3	Benzo[a]anthracene	BRL		ug/Kg	18
218-01-9	Chrysene	BRL		ug/Kg	18
205-99-2	Benzo[b]fluoranthene	BRL		ug/Kg	18
207-08-9	Benzo[k]fluoranthene	BRL		ug/Kg	18
50-32-8	Benzo[a]pyrene	BRL		ug/Kg	18
193-39-5	Indeno[1,2,3-c,d]pyrene	BRL		ug/Kg	18
53-70-3	Dibenzo[a,h]anthracene	BRL		ug/Kg	18
191-24-2	Benzo[g,h,i]perylene	BRL		ug/Kg	18

QC Surrogate Compound	Spiked	Measured	Recovery	QC Limits
ortho-Terphenyl	3,400	2,700	**81 %**	40 - 140 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).
Method modified by use of selected ion monitoring (SIM) in accordance with Section 7.5.5 of the method.
Method protocol modified to include acidification and the surrogate compound in accordance with the MA DEP Method for the Determination of Extractable Petroleum Hydrocarbons.
Sample extraction performed by EPA Method 3546. Results are reported on a dry weight basis.

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample size and dilution.

GROUNDWATER ANALYTICAL

Massachusetts DEP EPH Method
Extractable Petroleum Hydrocarbons by GC/FID

Field ID:	W2A10-P2-M-03	Matrix:	Soil
Project:	Buzzards Bay/3871-002	Container:	120 mL Amber Glass
Client:	GeoInsight, Inc.	Preservation:	Cool
Laboratory ID:	86975-07	QC Batch ID:	EP-2138-M
Sampled:	08-29-05 00:00	Instrument ID:	GC-7 HP 5890
Received:	08-30-05 20:21	Sample Weight:	15 g
Extracted:	09-08-05 11:00	Final Volume:	1 mL
Analyzed (AL):	09-12-05 17:02	% Solids:	52
Analyzed (AR):	09-12-05 17:47	Aliphatic Dilution Factor:	1
Analyst:	MM	Aromatic Dilution Factor:	1

EPH Ranges	Concentration	Notes	Units	Reporting Limit
n-C9 to n-C18 Aliphatic Hydrocarbons †	BRL		mg/Kg	56
n-C19 to n-C36 Aliphatic Hydrocarbons †	BRL		mg/Kg	56
n-C11 to n-C22 Aromatic Hydrocarbons †◊	BRL		mg/Kg	56
Unadjusted n-C11 to n-C22 Aromatic Hydrocarbons †	BRL		mg/Kg	56

QC Surrogate Compound		Spiked	Measured	Recovery	QC Limits
Fractionation:	2-Fluorobiphenyl	5.0	4.0	80 %	40 - 140 %
	2-Bromonaphthalene	5.0	4.0	80 %	40 - 140 %
Extraction:	Chloro-octadecane	5.0	3.7	75 %	40 - 140 %
	ortho-Terphenyl	5.0	4.5	90 %	40 - 140 %

QA/QC Certification

1. Were all QA/QC procedures required by the method followed?	Yes
2. Were all performance/acceptance standards for the required QA/QC procedures achieved?	Yes
3. Were any significant modifications made to the method, as specified in Section 11.3.1.1?	No

Method non-conformances indicated above are detailed below on this data report, or in the accompanying project narrative and project quality control report. Release of this data is authorized by the accompanying signed project cover letter. The accompanying cover letter, project narrative and quality control report are considered part of this data report.

Method Reference: Method for the Determination of Extractable Petroleum Hydrocarbons, MA DEP (Revision 1.1, 2004).
Sample extraction performed by microwave accelerated solvent extraction technique. Results are reported on a dry weight basis.

Report Notations:

BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample size and dilution.

† Hydrocarbon range data excludes concentrations of any surrogate(s) and/or internal standards eluting in that range.

◊ n-C11 to n-C22 Aromatic Hydrocarbons range data excludes the method target analyte concentrations.

GROUNDWATER ANALYTICAL

EPA Method 8270C (Modified)
MA DEP EPH Polynuclear Aromatic Hydrocarbons by GC/MS-SIM

Field ID:	W2A10-P2-M-03	Matrix:	Soil
Project:	Buzzards Bay/3871-002	Container:	120 mL Amber Glass
Client:	GeoInsight, Inc.	Preservation:	Cool
Laboratory ID:	86975-07	QC Batch ID:	EP-2138-M
Sampled:	08-29-05 00:00	Instrument ID:	MS-6 HP 6890
Received:	08-30-05 20:21	Sample Volume:	15 g
Extracted:	09-08-05 11:00	Final Volume:	1 mL
Analyzed:	09-14-05 03:50	Percent Solids:	52
Analyst:	JJT	Dilution Factor:	1

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
91-20-3	Naphthalene	10	j	ug/Kg	19
91-57-6	2-Methylnaphthalene	BRL		ug/Kg	19
208-96-8	Acenaphthylene	BRL		ug/Kg	19
83-32-9	Acenaphthene	BRL		ug/Kg	19
86-73-7	Fluorene	BRL		ug/Kg	19
85-01-8	Phenanthrene	BRL		ug/Kg	19
120-12-7	Anthracene	BRL		ug/Kg	19
206-44-0	Fluoranthene	15	j	ug/Kg	19
129-00-0	Pyrene	17	j	ug/Kg	19
56-55-3	Benzo[a]anthracene	BRL		ug/Kg	19
218-01-9	Chrysene	BRL		ug/Kg	19
205-99-2	Benzo[b]fluoranthene	BRL		ug/Kg	19
207-08-9	Benzo[k]fluoranthene	BRL		ug/Kg	19
50-32-8	Benzo[a]pyrene	BRL		ug/Kg	19
193-39-5	Indeno[1,2,3-c,d]pyrene	16	j	ug/Kg	19
53-70-3	Dibenzo[a,h]anthracene	21		ug/Kg	19
191-24-2	Benzo[g,h,i]perylene	BRL		ug/Kg	19

QC Surrogate Compound	Spiked	Measured	Recovery	QC Limits
ortho-Terphenyl	5,000	4,000	81 %	40 - 140 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).
Method modified by use of selected ion monitoring (SIM) in accordance with Section 7.5.5 of the method.
Method protocol modified to include acidification and the surrogate compound in accordance with the MA DEP Method for the Determination of Extractable Petroleum Hydrocarbons.
Sample extraction performed by EPA Method 3546. Results are reported on a dry weight basis.

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample size and dilution.

j Indicates an estimated value detected below the reporting limit for the analyte.

GROUNDWATER ANALYTICAL

Massachusetts DEP EPH Method
Extractable Petroleum Hydrocarbons by GC/FID

Field ID:	W2A10-P2-M-04	Matrix:	Soil
Project:	Buzzards Bay/3871-002	Container:	120 mL Amber Glass
Client:	GeoInsight, Inc.	Preservation:	Cool
Laboratory ID:	86975-08	QC Batch ID:	EP-2138-M
Sampled:	08-29-05 00:00	Instrument ID:	GC-7 HP 5890
Received:	08-30-05 20:21	Sample Weight:	16 g
Extracted:	09-08-05 11:00	Final Volume:	1 mL
Analyzed (AL):	09-12-05 18:31	% Solids:	77
Analyzed (AR):	09-12-05 19:16	Aliphatic Dilution Factor:	1
Analyst:	MM	Aromatic Dilution Factor:	1

EPH Ranges	Concentration	Notes	Units	Reporting Limit
n-C9 to n-C18 Aliphatic Hydrocarbons †	BRL		mg/Kg	38
n-C19 to n-C36 Aliphatic Hydrocarbons †	BRL		mg/Kg	38
n-C11 to n-C22 Aromatic Hydrocarbons †◊	BRL		mg/Kg	38
Unadjusted n-C11 to n-C22 Aromatic Hydrocarbons †	BRL		mg/Kg	38

QC Surrogate Compound		Spiked	Measured	Recovery	QC Limits
Fractionation:	2-Fluorobiphenyl	3.3	2.6	79 %	40 - 140 %
	2-Bromonaphthalene	3.3	2.8	85 %	40 - 140 %
Extraction:	Chloro-octadecane	3.3	2.7	80 %	40 - 140 %
	ortho-Terphenyl	3.3	2.7	80 %	40 - 140 %

QA/QC Certification

1. Were all QA/QC procedures required by the method followed?	Yes
2. Were all performance/acceptance standards for the required QA/QC procedures achieved?	Yes
3. Were any significant modifications made to the method, as specified in Section 11.3.1.1?	No

Method non-conformances indicated above are detailed below on this data report, or in the accompanying project narrative and project quality control report. Release of this data is authorized by the accompanying signed project cover letter. The accompanying cover letter, project narrative and quality control report are considered part of this data report.

Method Reference: Method for the Determination of Extractable Petroleum Hydrocarbons, MA DEP (Revision 1.1, 2004).
Sample extraction performed by microwave accelerated solvent extraction technique. Results are reported on a dry weight basis.

Report Notations:

BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample size and dilution.

† Hydrocarbon range data excludes concentrations of any surrogate(s) and/or internal standards eluting in that range.

◊ n-C11 to n-C22 Aromatic Hydrocarbons range data excludes the method target analyte concentrations.

GROUNDWATER ANALYTICAL

EPA Method 8270C (Modified)
MA DEP EPH Polynuclear Aromatic Hydrocarbons by GC/MS-SIM

Field ID:	**W2A10-P2-M-04**	Matrix:	**Soil**
Project:	**Buzzards Bay/3871-002**	Container:	**120 mL Amber Glass**
Client:	**GeoInsight, Inc.**	Preservation:	**Cool**
Laboratory ID:	**86975-08**	QC Batch ID:	**EP-2138-M**
Sampled:	**08-29-05 00:00**	Instrument ID:	**MS-6 HP 6890**
Received:	**08-30-05 20:21**	Sample Volume:	**16 g**
Extracted:	**09-08-05 11:00**	Final Volume:	**1 mL**
Analyzed:	**09-14-05 04:29**	Percent Solids:	**77**
Analyst:	**JJT**	Dilution Factor:	**1**

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
91-20-3	Naphthalene	BRL		ug/Kg	14
91-57-6	2-Methylnaphthalene	BRL		ug/Kg	14
208-96-8	Acenaphthylene	BRL		ug/Kg	14
83-32-9	Acenaphthene	BRL		ug/Kg	14
86-73-7	Fluorene	BRL		ug/Kg	14
85-01-8	Phenanthrene	BRL		ug/Kg	14
120-12-7	Anthracene	BRL		ug/Kg	14
206-44-0	Fluoranthene	BRL		ug/Kg	14
129-00-0	Pyrene	BRL		ug/Kg	14
56-55-3	Benzo[a]anthracene	BRL		ug/Kg	14
218-01-9	Chrysene	BRL		ug/Kg	14
205-99-2	Benzo[b]fluoranthene	BRL		ug/Kg	14
207-08-9	Benzo[k]fluoranthene	BRL		ug/Kg	14
50-32-8	Benzo[a]pyrene	BRL		ug/Kg	14
193-39-5	Indeno[1,2,3-c,d]pyrene	BRL		ug/Kg	14
53-70-3	Dibenzo[a,h]anthracene	BRL		ug/Kg	14
191-24-2	Benzo[g,h,i]perylene	BRL		ug/Kg	14

QC Surrogate Compound	Spiked	Measured	Recovery	QC Limits
ortho- Terphenyl	3,300	2,500	**74 %**	40 - 140 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).
Method modified by use of selected ion monitoring (SIM) in accordance with Section 7.5.5 of the method.
Method protocol modified to include acidification and the surrogate compound in accordance with the MA DEP Method for the Determination of Extractable Petroleum Hydrocarbons.
Sample extraction performed by EPA Method 3546. Results are reported on a dry weight basis.

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample size and dilution.

GROUNDWATER ANALYTICAL

Massachusetts DEP EPH Method
Extractable Petroleum Hydrocarbons by GC/FID

Field ID:	W2A11-P2-LIT-01	Matrix:	Soil
Project:	Buzzards Bay/3871-002	Container:	120 mL Amber Glass
Client:	GeoInsight, Inc.	Preservation:	Cool
Laboratory ID:	86975-09	QC Batch ID:	EP-2138-M
Sampled:	08-29-05 00:00	Instrument ID:	GC-7 HP 5890
Received:	08-30-05 20:21	Sample Weight:	15 g
Extracted:	09-08-05 11:00	Final Volume:	1 mL
Analyzed (AL):	09-12-05 20:00	% Solids:	83
Analyzed (AR):	09-12-05 20:45	Aliphatic Dilution Factor:	1
Analyst:	MM	Aromatic Dilution Factor:	1

EPH Ranges	Concentration	Notes	Units	Reporting Limit
n-C9 to n-C18 Aliphatic Hydrocarbons †	BRL		mg/Kg	36
n-C19 to n-C36 Aliphatic Hydrocarbons †	BRL		mg/Kg	36
n-C11 to n-C22 Aromatic Hydrocarbons †◊	BRL		mg/Kg	36
Unadjusted n-C11 to n-C22 Aromatic Hydrocarbons †	BRL		mg/Kg	36

QC Surrogate Compound		Spiked	Measured	Recovery	QC Limits
Fractionation:	2-Fluorobiphenyl	3.2	2.5	79 %	40 - 140 %
	2-Bromonaphthalene	3.2	2.6	83 %	40 - 140 %
Extraction:	Chloro-octadecane	3.2	2.4	76 %	40 - 140 %
	ortho-Terphenyl	3.2	2.4	76 %	40 - 140 %

QA/QC Certification

1. Were all QA/QC procedures required by the method followed?	Yes
2. Were all performance/acceptance standards for the required QA/QC procedures achieved?	Yes
3. Were any significant modifications made to the method, as specified in Section 11.3.1.1?	No

Method non-conformances indicated above are detailed below on this data report, or in the accompanying project narrative and project quality control report. Release of this data is authorized by the accompanying signed project cover letter. The accompanying cover letter, project narrative and quality control report are considered part of this data report.

Method Reference: Method for the Determination of Extractable Petroleum Hydrocarbons, MA DEP (Revision 1.1, 2004).
Sample extraction performed by microwave accelerated solvent extraction technique. Results are reported on a dry weight basis.

Report Notations:

BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample size and dilution.

† Hydrocarbon range data excludes concentrations of any surrogate(s) and/or internal standards eluting in that range.

◊ n-C11 to n-C22 Aromatic Hydrocarbons range data excludes the method target analyte concentrations.

GROUNDWATER ANALYTICAL

EPA Method 8270C (Modified)
MA DEP EPH Polynuclear Aromatic Hydrocarbons by GC/MS-SIM

Field ID:	W2A11-P2-LIT-01	Matrix:	Soil
Project:	Buzzards Bay/3871-002	Container:	120 mL Amber Glass
Client:	GeoInsight, Inc.	Preservation:	Cool
Laboratory ID:	86975-09	QC Batch ID:	EP-2138-M
Sampled:	08-29-05 00:00	Instrument ID:	MS-6 HP 6890
Received:	08-30-05 20:21	Sample Volume:	15 g
Extracted:	09-08-05 11:00	Final Volume:	1 mL
Analyzed:	09-14-05 05:08	Percent Solids:	83
Analyst:	JJT	Dilution Factor:	1

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
91-20-3	Naphthalene	BRL		ug/Kg	12
91-57-6	2-Methylnaphthalene	BRL		ug/Kg	12
208-96-8	Acenaphthylene	BRL		ug/Kg	12
83-32-9	Acenaphthene	BRL		ug/Kg	12
86-73-7	Fluorene	BRL		ug/Kg	12
85-01-8	Phenanthrene	BRL		ug/Kg	12
120-12-7	Anthracene	BRL		ug/Kg	12
206-44-0	Fluoranthene	BRL		ug/Kg	12
129-00-0	Pyrene	BRL		ug/Kg	12
56-55-3	Benzo[a]anthracene	BRL		ug/Kg	12
218-01-9	Chrysene	BRL		ug/Kg	12
205-99-2	Benzo[b]fluoranthene	BRL		ug/Kg	12
207-08-9	Benzo[k]fluoranthene	BRL		ug/Kg	12
50-32-8	Benzo[a]pyrene	BRL		ug/Kg	12
193-39-5	Indeno[1,2,3-c,d]pyrene	BRL		ug/Kg	12
53-70-3	Dibenzo[a,h]anthracene	BRL		ug/Kg	12
191-24-2	Benzo[g,h,i]perylene	BRL		ug/Kg	12

QC Surrogate Compound	Spiked	Measured	Recovery	QC Limits
ortho-Terphenyl	3,200	2,400	77 %	40 - 140 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).
Method modified by use of selected ion monitoring (SIM) in accordance with Section 7.5.5 of the method.
Method protocol modified to include acidification and the surrogate compound in accordance with the MA DEP Method for the Determination of Extractable Petroleum Hydrocarbons.
Sample extraction performed by EPA Method 3546. Results are reported on a dry weight basis.

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample size and dilution.

GROUNDWATER ANALYTICAL

Massachusetts DEP EPH Method
Extractable Petroleum Hydrocarbons by GC/FID

Field ID:	**W2A11-P2-LIT-02**	Matrix:	**Soil**
Project:	**Buzzards Bay/3871-002**	Container:	**120 mL Amber Glass**
Client:	**GeoInsight, Inc.**	Preservation:	**Cool**
Laboratory ID:	**86975-10**	QC Batch ID:	**EP-2138-M**
Sampled:	**08-29-05 00:00**	Instrument ID:	**GC-7 HP 5890**
Received:	**08-30-05 20:21**	Sample Weight:	**15 g**
Extracted:	**09-08-05 11:00**	Final Volume:	**1 mL**
Analyzed (AL):	**09-12-05 22:13**	% Solids:	**97**
Analyzed (AR):	**09-12-05 22:57**	Aliphatic Dilution Factor:	**1**
Analyst:	**MM**	Aromatic Dilution Factor:	**1**

EPH Ranges	Concentration	Notes	Units	Reporting Limit
n-C9 to n-C18 Aliphatic Hydrocarbons †	BRL		mg/Kg	30
n-C19 to n-C36 Aliphatic Hydrocarbons †	BRL		mg/Kg	30
n-C11 to n-C22 Aromatic Hydrocarbons †◊	BRL		mg/Kg	30
Unadjusted n-C11 to n-C22 Aromatic Hydrocarbons †	BRL		mg/Kg	30

QC Surrogate Compound		Spiked	Measured	Recovery	QC Limits
Fractionation:	2-Fluorobiphenyl	2.7	2.5	**93 %**	40 - 140 %
	2-Bromonaphthalene	2.7	2.6	**96 %**	40 - 140 %
Extraction:	Chloro-octadecane	2.7	2.1	**79 %**	40 - 140 %
	ortho -Terphenyl	2.7	2.3	**86 %**	40 - 140 %

QA/QC Certification

1. Were all QA/QC procedures required by the method followed?	Yes
2. Were all performance/acceptance standards for the required QA/QC procedures achieved?	Yes
3. Were any significant modifications made to the method, as specified in Section 11.3.1.1?	No

Method non-conformances indicated above are detailed below on this data report, or in the accompanying project narrative and project quality control report. Release of this data is authorized by the accompanying signed project cover letter. The accompanying cover letter, project narrative and quality control report are considered part of this data report.

Method Reference: Method for the Determination of Extractable Petroleum Hydrocarbons, MA DEP (Revision 1.1, 2004).
Sample extraction performed by microwave accelerated solvent extraction technique. Results are reported on a dry weight basis.

Report Notations:

BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample size and dilution.

† Hydrocarbon range data excludes concentrations of any surrogate(s) and/or internal standards eluting in that range.

◊ n-C11 to n-C22 Aromatic Hydrocarbons range data excludes the method target analyte concentrations.

GROUNDWATER ANALYTICAL

EPA Method 8270C (Modified)
MA DEP EPH Polynuclear Aromatic Hydrocarbons by GC/MS-SIM

Field ID:	**W2A11-P2-LIT-02**	Matrix:	**Soil**
Project:	**Buzzards Bay/3871-002**	Container:	**120 mL Amber Glass**
Client:	**GeoInsight, Inc.**	Preservation:	**Cool**
Laboratory ID:	**86975-10**	QC Batch ID:	**EP-2138-M**
Sampled:	**08-29-05 00:00**	Instrument ID:	**MS-6 HP 6890**
Received:	**08-30-05 20:21**	Sample Volume:	**15 g**
Extracted:	**09-08-05 11:00**	Final Volume:	**1 mL**
Analyzed:	**09-14-05 05:47**	Percent Solids:	**97**
Analyst:	**JJT**	Dilution Factor:	**1**

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
91-20-3	Naphthalene	BRL		ug/Kg	10
91-57-6	2-Methylnaphthalene	BRL		ug/Kg	10
208-96-8	Acenaphthylene	BRL		ug/Kg	10
83-32-9	Acenaphthene	BRL		ug/Kg	10
86-73-7	Fluorene	BRL		ug/Kg	10
85-01-8	Phenanthrene	BRL		ug/Kg	10
120-12-7	Anthracene	BRL		ug/Kg	10
206-44-0	Fluoranthene	BRL		ug/Kg	10
129-00-0	Pyrene	BRL		ug/Kg	10
56-55-3	Benzo[a]anthracene	BRL		ug/Kg	10
218-01-9	Chrysene	BRL		ug/Kg	10
205-99-2	Benzo[b]fluoranthene	BRL		ug/Kg	10
207-08-9	Benzo[k]fluoranthene	BRL		ug/Kg	10
50-32-8	Benzo[a]pyrene	BRL		ug/Kg	10
193-39-5	Indeno[1,2,3-c,d]pyrene	BRL		ug/Kg	10
53-70-3	Dibenzo[a,h]anthracene	BRL		ug/Kg	10
191-24-2	Benzo[g,h,i]perylene	BRL		ug/Kg	10

QC Surrogate Compound	Spiked	Measured	Recovery	QC Limits
ortho-Terphenyl	2,700	2,300	**85 %**	40 - 140 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).
Method modified by use of selected ion monitoring (SIM) in accordance with Section 7.5.5 of the method.
Method protocol modified to include acidification and the surrogate compound in accordance with the MA DEP Method for the Determination of Extractable Petroleum Hydrocarbons.
Sample extraction performed by EPA Method 3546. Results are reported on a dry weight basis.

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample size and dilution.

GROUNDWATER ANALYTICAL

Massachusetts DEP EPH Method
Extractable Petroleum Hydrocarbons by GC/FID

Field ID:	W2A11-P2-UIT-01	Matrix:	Soil
Project:	Buzzards Bay/3871-002	Container:	120 mL Amber Glass
Client:	GeoInsight, Inc.	Preservation:	Cool
Laboratory ID:	86975-11	QC Batch ID:	EP-2140-M
Sampled:	08-29-05 00:00	Instrument ID:	GC-7 HP 5890
Received:	08-30-05 20:21	Sample Weight:	16 g
Extracted:	09-09-05 15:00	Final Volume:	1 mL
Analyzed (AL):	09-12-05 23:42	% Solids:	95
Analyzed (AR):	09-13-05 00:26	Aliphatic Dilution Factor:	1
Analyst:	MM	Aromatic Dilution Factor:	1

EPH Ranges	Concentration	Notes	Units	Reporting Limit
n-C9 to n-C18 Aliphatic Hydrocarbons †	BRL		mg/Kg	30
n-C19 to n-C36 Aliphatic Hydrocarbons †	BRL		mg/Kg	30
n-C11 to n-C22 Aromatic Hydrocarbons †◊	BRL		mg/Kg	30
Unadjusted n-C11 to n-C22 Aromatic Hydrocarbons †	BRL		mg/Kg	30

QC Surrogate Compound		Spiked	Measured	Recovery	QC Limits
Fractionation:	2-Fluorobiphenyl	2.7	2.0	75 %	40 - 140 %
	2-Bromonaphthalene	2.7	2.1	79 %	40 - 140 %
Extraction:	Chloro-octadecane	2.7	2.0	76 %	40 - 140 %
	ortho-Terphenyl	2.7	1.9	71 %	40 - 140 %

QA/QC Certification

1. Were all QA/QC procedures required by the method followed?	Yes
2. Were all performance/acceptance standards for the required QA/QC procedures achieved?	Yes
3. Were any significant modifications made to the method, as specified in Section 11.3.1.1?	No

Method non-conformances indicated above are detailed below on this data report, or in the accompanying project narrative and project quality control report. Release of this data is authorized by the accompanying signed project cover letter. The accompanying cover letter, project narrative and quality control report are considered part of this data report.

Method Reference: Method for the Determination of Extractable Petroleum Hydrocarbons, MA DEP (Revision 1.1, 2004).
Sample extraction performed by microwave accelerated solvent extraction technique. Results are reported on a dry weight basis.

Report Notations:

BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample size and dilution.

† Hydrocarbon range data excludes concentrations of any surrogate(s) and/or internal standards eluting in that range.

◊ n-C11 to n-C22 Aromatic Hydrocarbons range data excludes the method target analyte concentrations.

GROUNDWATER ANALYTICAL

EPA Method 8270C (Modified)
MA DEP EPH Polynuclear Aromatic Hydrocarbons by GC/MS-SIM

Field ID:	**W2A11-P2-UIT-01**	Matrix:	**Soil**
Project:	**Buzzards Bay/3871-002**	Container:	**120 mL Amber Glass**
Client:	**GeoInsight, Inc.**	Preservation:	**Cool**
Laboratory ID:	**86975-11**	QC Batch ID:	**EP-2140-M**
Sampled:	**08-29-05 00:00**	Instrument ID:	**MS-6 HP 6890**
Received:	**08-30-05 20:21**	Sample Volume:	**16 g**
Extracted:	**09-09-05 15:00**	Final Volume:	**1 mL**
Analyzed:	**09-14-05 06:26**	Percent Solids:	**95**
Analyst:	**JJT**	Dilution Factor:	**1**

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
91-20-3	Naphthalene	BRL		ug/Kg	10
91-57-6	2-Methylnaphthalene	BRL		ug/Kg	10
208-96-8	Acenaphthylene	BRL		ug/Kg	10
83-32-9	Acenaphthene	BRL		ug/Kg	10
86-73-7	Fluorene	BRL		ug/Kg	10
85-01-8	Phenanthrene	BRL		ug/Kg	10
120-12-7	Anthracene	BRL		ug/Kg	10
206-44-0	Fluoranthene	BRL		ug/Kg	10
129-00-0	Pyrene	6	j	ug/Kg	10
56-55-3	Benzo[a]anthracene	BRL		ug/Kg	10
218-01-9	Chrysene	BRL		ug/Kg	10
205-99-2	Benzo[b]fluoranthene	BRL		ug/Kg	10
207-08-9	Benzo[k]fluoranthene	BRL		ug/Kg	10
50-32-8	Benzo[a]pyrene	BRL		ug/Kg	10
193-39-5	Indeno[1,2,3-c,d]pyrene	7	j	ug/Kg	10
53-70-3	Dibenzo[a,h]anthracene	11		ug/Kg	10
191-24-2	Benzo[g,h,i]perylene	BRL		ug/Kg	10

QC Surrogate Compound	Spiked	Measured	Recovery	QC Limits
ortho-Terphenyl	2,700	1,900	72 %	40 - 140 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).
Method modified by use of selected ion monitoring (SIM) in accordance with Section 7.5.5 of the method.
Method protocol modified to include acidification and the surrogate compound in accordance with the MA DEP Method for the Determination of Extractable Petroleum Hydrocarbons.
Sample extraction performed by EPA Method 3546. Results are reported on a dry weight basis.

Report Notations:
BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample size and dilution.

j Indicates an estimated value detected below the reporting limit for the analyte.

GROUNDWATER ANALYTICAL

Massachusetts DEP EPH Method
Extractable Petroleum Hydrocarbons by GC/FID

Field ID:	**W2A11-P2-UIT-02**	Matrix:	**Soil**
Project:	**Buzzards Bay/3871-002**	Container:	**120 mL Amber Glass**
Client:	**GeoInsight, Inc.**	Preservation:	**Cool**
Laboratory ID:	**86975-12**	QC Batch ID:	**EP-2140-M**
Sampled:	**08-29-05 00:00**	Instrument ID:	**GC-7 HP 5890**
Received:	**08-30-05 20:21**	Sample Weight:	**15 g**
Extracted:	**09-09-05 15:00**	Final Volume:	**1 mL**
Analyzed (AL):	**09-13-05 01:10**	% Solids:	**94**
Analyzed (AR):	**09-13-05 01:54**	Aliphatic Dilution Factor:	**1**
Analyst:	**MM**	Aromatic Dilution Factor:	**1**

EPH Ranges	Concentration	Notes	Units	Reporting Limit
n-C9 to n-C18 Aliphatic Hydrocarbons †	BRL		mg/Kg	31
n-C19 to n-C36 Aliphatic Hydrocarbons †	BRL		mg/Kg	31
n-C11 to n-C22 Aromatic Hydrocarbons †◊	BRL		mg/Kg	31
Unadjusted n-C11 to n-C22 Aromatic Hydrocarbons †	BRL		mg/Kg	31

QC Surrogate Compound		Spiked	Measured	Recovery	QC Limits
Fractionation:	2-Fluorobiphenyl	2.8	2.4	**88 %**	40 - 140 %
	2-Bromonaphthalene	2.8	2.6	**95 %**	40 - 140 %
Extraction:	Chloro-octadecane	2.8	2.1	**75 %**	40 - 140 %
	ortho-Terphenyl	2.8	2.3	**84 %**	40 - 140 %

QA/QC Certification

1. Were all QA/QC procedures required by the method followed?	Yes
2. Were all performance/acceptance standards for the required QA/QC procedures achieved?	Yes
3. Were any significant modifications made to the method, as specified in Section 11.3.1.1?	No

Method non-conformances indicated above are detailed below on this data report, or in the accompanying project narrative and project quality control report. Release of this data is authorized by the accompanying signed project cover letter. The accompanying cover letter, project narrative and quality control report are considered part of this data report.

Method Reference: Method for the Determination of Extractable Petroleum Hydrocarbons, MA DEP (Revision 1.1, 2004). Sample extraction performed by microwave accelerated solvent extraction technique. Results are reported on a dry weight basis.

Report Notations:

BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample size and dilution.

† Hydrocarbon range data excludes concentrations of any surrogate(s) and/or internal standards eluting in that range.

◊ n-C11 to n-C22 Aromatic Hydrocarbons range data excludes the method target analyte concentrations.

GROUNDWATER ANALYTICAL

EPA Method 8270C (Modified)
MA DEP EPH Polynuclear Aromatic Hydrocarbons by GC/MS-SIM

Field ID:	W2A11-P2-UIT-02	Matrix:	Soil
Project:	Buzzards Bay/3871-002	Container:	120 mL Amber Glass
Client:	GeoInsight, Inc.	Preservation:	Cool
Laboratory ID:	86975-12	QC Batch ID:	EP-2140-M
Sampled:	08-29-05 00:00	Instrument ID:	MS-6 HP 6890
Received:	08-30-05 20:21	Sample Volume:	15 g
Extracted:	09-09-05 15:00	Final Volume:	1 mL
Analyzed:	09-14-05 07:05	Percent Solids:	94
Analyst:	JJT	Dilution Factor:	1

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
91-20-3	Naphthalene	BRL		ug/Kg	12
91-57-6	2-Methylnaphthalene	BRL		ug/Kg	12
208-96-8	Acenaphthylene	BRL		ug/Kg	12
83-32-9	Acenaphthene	BRL		ug/Kg	12
86-73-7	Fluorene	BRL		ug/Kg	12
85-01-8	Phenanthrene	BRL		ug/Kg	12
120-12-7	Anthracene	BRL		ug/Kg	12
206-44-0	Fluoranthene	BRL		ug/Kg	12
129-00-0	Pyrene	BRL		ug/Kg	12
56-55-3	Benzo[a]anthracene	BRL		ug/Kg	12
218-01-9	Chrysene	BRL		ug/Kg	12
205-99-2	Benzo[b]fluoranthene	BRL		ug/Kg	12
207-08-9	Benzo[k]fluoranthene	BRL		ug/Kg	12
50-32-8	Benzo[a]pyrene	BRL		ug/Kg	12
193-39-5	Indeno[1,2,3-c,d]pyrene	BRL		ug/Kg	12
53-70-3	Dibenzo[a,h]anthracene	BRL		ug/Kg	12
191-24-2	Benzo[g,h,i]perylene	BRL		ug/Kg	12

QC Surrogate Compound	Spiked	Measured	Recovery	QC Limits
ortho- Terphenyl	2,800	2,200	79 %	40 - 140 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).
Method modified by use of selected ion monitoring (SIM) in accordance with Section 7.5.5 of the method.
Method protocol modified to include acidification and the surrogate compound in accordance with the MA DEP Method for the Determination of Extractable Petroleum Hydrocarbons.
Sample extraction performed by EPA Method 3546. Results are reported on a dry weight basis.

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample size and dilution.

GROUNDWATER ANALYTICAL

Massachusetts DEP EPH Method
Extractable Petroleum Hydrocarbons by GC/FID

Field ID:	**DDD-P2-01**	Matrix:	**Soil**
Project:	**Buzzards Bay/3871-002**	Container:	**120 mL Amber Glass**
Client:	**GeoInsight, Inc.**	Preservation:	**Cool**
Laboratory ID:	**86975-13**	QC Batch ID:	**EP-2140-M**
Sampled:	**08-29-05 00:00**	Instrument ID:	**GC-7 HP 5890**
Received:	**08-30-05 20:21**	Sample Weight:	**16 g**
Extracted:	**09-09-05 15:00**	Final Volume:	**1 mL**
Analyzed (AL):	**09-13-05 02:38**	% Solids:	**86**
Analyzed (AR):	**09-13-05 03:22**	Aliphatic Dilution Factor:	**1**
Analyst:	**MM**	Aromatic Dilution Factor:	**1**

EPH Ranges	Concentration	Notes	Units	Reporting Limit
n-C9 to n-C18 Aliphatic Hydrocarbons †	BRL		mg/Kg	33
n-C19 to n-C36 Aliphatic Hydrocarbons †	BRL		mg/Kg	33
n-C11 to n-C22 Aromatic Hydrocarbons †◊	BRL		mg/Kg	33
Unadjusted n-C11 to n-C22 Aromatic Hydrocarbons †	BRL		mg/Kg	33

QC Surrogate Compound		Spiked	Measured	Recovery	QC Limits
Fractionation:	2-Fluorobiphenyl	3.0	2.4	**80 %**	40 - 140 %
	2-Bromonaphthalene	3.0	2.5	**84 %**	40 - 140 %
Extraction:	Chloro-octadecane	3.0	2.3	**77 %**	40 - 140 %
	ortho-Terphenyl	3.0	2.3	**76 %**	40 - 140 %

QA/QC Certification

1. Were all QA/QC procedures required by the method followed?	Yes
2. Were all performance/acceptance standards for the required QA/QC procedures achieved?	Yes
3. Were any significant modifications made to the method, as specified in Section 11.3.1.1?	No

Method non-conformances indicated above are detailed below on this data report, or in the accompanying project narrative and project quality control report. Release of this data is authorized by the accompanying signed project cover letter. The accompanying cover letter, project narrative and quality control report are considered part of this data report.

Method Reference: Method for the Determination of Extractable Petroleum Hydrocarbons, MA DEP (Revision 1.1, 2004).
Sample extraction performed by microwave accelerated solvent extraction technique. Results are reported on a dry weight basis.

Report Notations:

BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample size and dilution.

† Hydrocarbon range data excludes concentrations of any surrogate(s) and/or internal standards eluting in that range.

◊ n-C11 to n-C22 Aromatic Hydrocarbons range data excludes the method target analyte concentrations.

GROUNDWATER ANALYTICAL

EPA Method 8270C (Modified)
MA DEP EPH Polynuclear Aromatic Hydrocarbons by GC/MS-SIM

Field ID:	**DDD-P2-01**	Matrix:	**Soil**
Project:	**Buzzards Bay/3871-002**	Container:	**120 mL Amber Glass**
Client:	**GeoInsight, Inc.**	Preservation:	**Cool**
Laboratory ID:	**86975-13**	QC Batch ID:	**EP-2140-M**
Sampled:	**08-29-05 00:00**	Instrument ID:	**MS-6 HP 6890**
Received:	**08-30-05 20:21**	Sample Volume:	**16 g**
Extracted:	**09-09-05 15:00**	Final Volume:	**1 mL**
Analyzed:	**09-14-05 07:44**	Percent Solids:	**86**
Analyst:	**JJT**	Dilution Factor:	**1**

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
91-20-3	Naphthalene	BRL		ug/Kg	14
91-57-6	2-Methylnaphthalene	BRL		ug/Kg	14
208-96-8	Acenaphthylene	BRL		ug/Kg	14
83-32-9	Acenaphthene	BRL		ug/Kg	14
86-73-7	Fluorene	BRL		ug/Kg	14
85-01-8	Phenanthrene	BRL		ug/Kg	14
120-12-7	Anthracene	BRL		ug/Kg	14
206-44-0	Fluoranthene	BRL		ug/Kg	14
129-00-0	Pyrene	BRL		ug/Kg	14
56-55-3	Benzo[a]anthracene	BRL		ug/Kg	14
218-01-9	Chrysene	BRL		ug/Kg	14
205-99-2	Benzo[b]fluoranthene	BRL		ug/Kg	14
207-08-9	Benzo[k]fluoranthene	BRL		ug/Kg	14
50-32-8	Benzo[a]pyrene	BRL		ug/Kg	14
193-39-5	Indeno[1,2,3-c,d]pyrene	BRL		ug/Kg	14
53-70-3	Dibenzo[a,h]anthracene	BRL		ug/Kg	14
191-24-2	Benzo[g,h,i]perylene	BRL		ug/Kg	14

QC Surrogate Compound	Spiked	Measured	Recovery	QC Limits
ortho-Terphenyl	3,000	2,400	**80 %**	40 - 140 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).
Method modified by use of selected ion monitoring (SIM) in accordance with Section 7.5.5 of the method.
Method protocol modified to include acidification and the surrogate compound in accordance with the MA DEP Method for the Determination of Extractable Petroleum Hydrocarbons.
Sample extraction performed by EPA Method 3546. Results are reported on a dry weight basis.

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample size and dilution.

GROUNDWATER ANALYTICAL

Massachusetts DEP EPH Method
Extractable Petroleum Hydrocarbons by GC/FID

Field ID:	DDD-P2-02	Matrix:	Soil
Project:	Buzzards Bay/3871-002	Container:	120 mL Amber Glass
Client:	GeoInsight, Inc.	Preservation:	Cool
Laboratory ID:	86975-14	QC Batch ID:	EP-2140-M
Sampled:	08-29-05 00:00	Instrument ID:	GC-7 HP 5890
Received:	08-30-05 20:21	Sample Weight:	15 g
Extracted:	09-09-05 15:00	Final Volume:	1 mL
Analyzed (AL):	09-13-05 04:07	% Solids:	93
Analyzed (AR):	09-13-05 04:51	Aliphatic Dilution Factor:	1
Analyst:	MM	Aromatic Dilution Factor:	1

EPH Ranges	Concentration	Notes	Units	Reporting Limit
n-C9 to n-C18 Aliphatic Hydrocarbons †	BRL		mg/Kg	32
n-C19 to n-C36 Aliphatic Hydrocarbons †	BRL		mg/Kg	32
n-C11 to n-C22 Aromatic Hydrocarbons †◊	BRL		mg/Kg	32
Unadjusted n-C11 to n-C22 Aromatic Hydrocarbons †	BRL		mg/Kg	32

QC Surrogate Compound		Spiked	Measured	Recovery	QC Limits
Fractionation:	2-Fluorobiphenyl	2.8	2.3	83 %	40 - 140 %
	2-Bromonaphthalene	2.8	2.2	77 %	40 - 140 %
Extraction:	Chloro-octadecane	2.8	2.0	69 %	40 - 140 %
	ortho-Terphenyl	2.8	2.3	81 %	40 - 140 %

QA/QC Certification

1. Were all QA/QC procedures required by the method followed?	Yes
2. Were all performance/acceptance standards for the required QA/QC procedures achieved?	Yes
3. Were any significant modifications made to the method, as specified in Section 11.3.1.1?	No

Method non-conformances indicated above are detailed below on this data report, or in the accompanying project narrative and project quality control report. Release of this data is authorized by the accompanying signed project cover letter. The accompanying cover letter, project narrative and quality control report are considered part of this data report.

Method Reference: Method for the Determination of Extractable Petroleum Hydrocarbons, MA DEP (Revision 1.1, 2004).
Sample extraction performed by microwave accelerated solvent extraction technique. Results are reported on a dry weight basis.

Report Notations:

BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample size and dilution.

† Hydrocarbon range data excludes concentrations of any surrogate(s) and/or internal standards eluting in that range.

◊ n-C11 to n-C22 Aromatic Hydrocarbons range data excludes the method target analyte concentrations.

GROUNDWATER ANALYTICAL

EPA Method 8270C (Modified)
MA DEP EPH Polynuclear Aromatic Hydrocarbons by GC/MS-SIM

Field ID:	**DDD-P2-02**	Matrix:	**Soil**
Project:	**Buzzards Bay/3871-002**	Container:	**120 mL Amber Glass**
Client:	**GeoInsight, Inc.**	Preservation:	**Cool**
Laboratory ID:	**86975-14**	QC Batch ID:	**EP-2140-M**
Sampled:	**08-29-05 00:00**	Instrument ID:	**MS-6 HP 6890**
Received:	**08-30-05 20:21**	Sample Volume:	**15 g**
Extracted:	**09-09-05 15:00**	Final Volume:	**1 mL**
Analyzed:	**09-14-05 08:23**	Percent Solids:	**93**
Analyst:	**JJT**	Dilution Factor:	**1**

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
91-20-3	Naphthalene	BRL		ug/Kg	12
91-57-6	2-Methylnaphthalene	BRL		ug/Kg	12
208-96-8	Acenaphthylene	BRL		ug/Kg	12
83-32-9	Acenaphthene	BRL		ug/Kg	12
86-73-7	Fluorene	BRL		ug/Kg	12
85-01-8	Phenanthrene	BRL		ug/Kg	12
120-12-7	Anthracene	BRL		ug/Kg	12
206-44-0	Fluoranthene	BRL		ug/Kg	12
129-00-0	Pyrene	BRL		ug/Kg	12
56-55-3	Benzo[a]anthracene	BRL		ug/Kg	12
218-01-9	Chrysene	BRL		ug/Kg	12
205-99-2	Benzo[b]fluoranthene	BRL		ug/Kg	12
207-08-9	Benzo[k]fluoranthene	BRL		ug/Kg	12
50-32-8	Benzo[a]pyrene	BRL		ug/Kg	12
193-39-5	Indeno[1,2,3-c,d]pyrene	BRL		ug/Kg	12
53-70-3	Dibenzo[a,h]anthracene	BRL		ug/Kg	12
191-24-2	Benzo[g,h,i]perylene	BRL		ug/Kg	12

QC Surrogate Compound	Spiked	Measured	Recovery	QC Limits
ortho-Terphenyl	2,800	2,300	**83 %**	40 - 140 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).
Method modified by use of selected ion monitoring (SIM) in accordance with Section 7.5.5 of the method.
Method protocol modified to include acidification and the surrogate compound in accordance with the MA DEP Method for the Determination of Extractable Petroleum Hydrocarbons.
Sample extraction performed by EPA Method 3546. Results are reported on a dry weight basis.

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample size and dilution.

GROUNDWATER ANALYTICAL

Project Narrative

Project:	**Buzzards Bay/3871-002**	Lab ID:	**86975**
Client:	**GeoInsight, Inc.**	Received:	**08-30-05 20:21**

A. Documentation and Client Communication

The following documentation discrepancies, and client changes or amendments were noted for this project:

1. No documentation discrepancies, changes, or amendments were noted.

B. Method Modifications, Non-Conformances and Observations

The sample(s) in this project were analyzed by the references analytical method(s), and no method modifications, non-conformances or analytical issues were noted, except as indicated below:

1. No method modifications, non-conformances or analytical issues were noted.

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CHAIN-OF-CUSTODY RECORD AND WORK ORDER

№ 200705

Project Name: Buzzards Bay	Firm: GeoInsight
Project Number: 3871-002	Address: 5 Lan Drive
Sampler Name: AW/LC	City / State / Zip: Westford, MA 01886
Project Manager: Kevin Trainer	Telephone: 978-692-1114

INSTRUCTIONS: Use separate line for each container (except replicates).

TURNAROUND

- [X] STANDARD (10 Business Days)
- [ ] PRIORITY (5 Business Days)
- [ ] RUSH (RAN- _____)
  (Rush requires Rush Authorization Number)
- [X] Please Email to: kdtrainer@geoinc.com pdf to
- [ ] Please FAX to: _____

BILLING

- [ ] Purchase Order No.: _____
- [ ] Third Party Billing: _____
- [ ] GWA Quote: _____

ANALYSIS REQUEST

OPTIONS: Volatiles: [ ] TIC Search; Semivolatiles: [ ] Acid Only [ ] B/N Only [ ] TIC Search

SDWA: Volatiles: [ ] 524.2+MTBE; Semivolatiles: [ ] 525.2; Pest/Herb/PCBs Extractable: [ ] 505 [ ] 508; Pest/Herb/PCBs Vol.: [ ] 531.1; [ ] 504.1 EDB/DBCP; Metals: [ ] Lead and Copper

NPDES: Volatiles: [ ] 624; [ ] 602+MTBE; [ ] 601; [ ] 601/602+MTBE; Semivolatiles: [ ] 625; [ ] 625 PAHs only; Pest/Herb/PCBs Extractable: [ ] 608 Pesticides; [ ] 608 PCBs; [ ] 615; Metals: [ ] 13 Priority Pollutant

RCRA/TE: Volatiles: [ ] 8260B TCL+MTBE; [ ] 8260B NH PETROLEUM; [ ] 8260B; [ ] 8021B Aromatics; [ ] 8021B Haloarkanes; [ ] 8021B; [ ] 8270C; Semivolatiles: [X] 8270C PAHs only SIM; Pest/Herb/PCBs Extractable: [ ] 8081A Pesticides; [ ] 8082 PCBs; [ ] 8151A Herbicides; [ ] 8011 EDB/DBCP; Metals: [ ] 8 RCRA; [ ] 5 RCRA; [ ] 23 TAL; [ ] Specify:

Petroleum Hydrocarbon Ext. TPH: [ ] TPH-HR; [ ] Diesel Range Organics (DRO); [ ] ME DRO; [ ] CT ETPH; [ ] MA DEP EPH w/all targets; [X] EPH Carbon Ranges only; [ ] EPH w/4 PAHs; [ ] Hydrocarbon Fingerprint (GC/FID by ASTM D3328-00-Mod.); [ ] TPH by GC/FID (8015B Mod) Quantitative Only; [ ] Gasoline Range Organics (GRO); [ ] ME GRO; Petroleum Hydrocarbon Vol. TPH: [ ] MA DEP VPH w/all targets; [ ] VPH Carbon ranges only

Haz. Waste: [ ] TCLP+; [ ] SPLP; [ ] 8 Metals; [ ] Pb only; [ ] VOA; [ ] Semi VOA; [ ] Pesticides; [ ] Herbicides; [ ] Corrosivity (as pH); [ ] Reactivity; [ ] Ignitability (as Flashpoint); [ ] Paint Filter; [ ] MA Basic Disposal Criteria: 8260B, TPH by GC, PCBs, 5 Metals, Corrosivity, Ignitability, Reactivity

General Chemistry: [ ] Nitrate; [ ] Nitrite; [ ] Chloride; [ ] Fluoride; [ ] Sulfate; [ ] Dissolved Phosphorus; [ ] Total Phosphorus; [ ] Ammonia; [ ] TKN; [ ] Total P (as NO2/NO3/TKN); [ ] Oil & Grease; [ ] COD; [ ] TOC; [ ] BOD; [ ] TDS; [ ] TSS; [ ] Alkalinity; [ ] Cyanide, Total; [ ] Cyanide, Physiologically Available; [ ] pH; [ ] Dissolved Oxygen; [ ] Turbidity; [ ] Total Coliform; [ ] Fecal Coliform; [ ] HPC

Other

Sampling DATE	Sampling TIME	SAMPLE IDENTIFICATION	Matrix	Type	Container(s)	Preservation	Filtered	LABORATORY NUMBER (Lab Use Only)
8/30/05	1210	WBA02-P2-M01A	SOIL/Sediment	COMPOSITE	1 NUMBER	ICE	NO	1
	1212	WBA02-P2-M-01B	SOIL/Sediment	COMPOSITE	1	ICE	NO	1
	1214	WBA02-P2-M-01C	SOIL/Sediment	COMPOSITE	1	ICE	NO	1
	1110	WBA02-P2-M-02A	SOIL/Sediment	COMPOSITE	1	ICE	NO	2
	1112	WBA02-P2-M-02B	SOIL/Sediment	COMPOSITE	1	ICE	NO	2
	1114	WBA02-P2-M-02C	SOIL/Sediment	COMPOSITE	1	ICE	NO	2
	1315	WBA02-P2-M-03A	SOIL/Sediment	COMPOSITE	1	ICE	NO	3
	1317	WBA02-P2-M-03B	SOIL/Sediment	COMPOSITE	1	ICE	NO	3
	1319	WBA02-P2-M-03C	SOIL/Sediment	COMPOSITE	1	ICE	NO	3
	1334	WBA02-P2-M-04A	SOIL/Sediment	COMPOSITE	1	ICE	NO	4
	1336	WBA02-P2-M-04B	SOIL/Sediment	COMPOSITE	1	ICE	NO	4
	1338	WBA02-P2-M-04C	SOIL/Sediment	COMPOSITE	1	ICE	NO	4

REMARKS / SPECIAL INSTRUCTIONS

MA DEP MCP Data Enhancement Affirmation

- [ ] YES [ ] NO MCP Data Certification required.
- [ ] YES [ ] NO MCP Drinking Water Sample included.
  (Require collection of contingent duplicate sample. Trip blanks are also required, if VOA sample collected).

Signature: _____

- Composite the A,B,+C sample aliquots after compositing, freeze the A,B,+C aliquots remaining, and send to B&B Labs for archiving on dry ice
- PAH analyzed by 8270 W/SIM Selected Ion Monitoring

DATA QUALITY OBJECTIVES

Regulatory Program

State	Standard	Deliverables
[ ] CT	[X] MCP GW-1/S-1	[ ] PWS Form
[ ] ME	[X] MCP GW-2/S-2	[ ] MWRA
[X] MA	[ ] NY STARS	[ ] _____
[ ] NH	[ ] Drinking Water	
[ ] NY	[ ] Wastewater	
[ ] RI	[ ] Waste Disposal	
[ ] VT	[ ] Dredge Material	
[ ] ___	[ ] _____	

Project Specific QC

Many regulatory programs and EPA methods require project specific QC. Project specific QC includes Sample Duplicates, Matrix Spikes, and/or Matrix Spike Duplicates. Laboratory QC is not project specific unless prearranged. Project specific QC samples are charged on a per sample basis. **Each MS, MSD and Sample Duplicate requires an additional sample aliquot.**

Project Specific QC Required

- [ ] Sample Duplicate
- [ ] Matrix Spike
- [ ] Matrix Spike Duplicate

Selection of QC Sample

- [ ] Please use sample: _____

CHAIN-OF-CUSTODY RECORD

NOTE: All samples submitted subject to Standard Terms and Conditions on reverse hereof.

Relinquished by Sampler:	Date 8/30/05 Time 2021	Received by:	Receipt Temperature: [ ] Ice [ ] Refrigerated 2-6°C Recommended 4/8
Relinquished by:	Date Time	Received by:	Container Count:
Relinquished by:	Date Time	Received by Laboratory:	Shipping/Airbill Number:
Method of Shipment: [ ] GWA Courier [ ] Express Mail [ ] Federal Express [ ] UPS [ ] Hand [ ] _____			Custody Seal Number:

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CHAIN-OF-CUSTODY RECORD AND WORK ORDER

No. 201614

Project Name: BUZZARDS BAY	Firm: GEOINSIGHT
Project Number: 3871-002	Address: 5 LAN DRIVE
Sampler Name: KZ, AW, LC, AP	City / State / Zip: WESTFORD, MA 01886
Project Manager: KEVIN TRAINER	Telephone: 978-692-1114

INSTRUCTIONS: Use separate line for each container (except replicates).

TURNAROUND

- [X] STANDARD (10 Business Days)
- [ ] PRIORITY (5 Business Days)
- [ ] RUSH (RAN- _____)
  (Rush requires Rush Authorization Number)
- [X] Please Email to: PDF to ktrainer@geoinsight.com
- [ ] Please FAX to: _____

BILLING

- [ ] Purchase Order No.: _____
- [ ] Third Party Billing: _____
- [ ] GWA Quote: _____

ANALYSIS REQUEST

OPTIONS: Volatiles: [ ] TIC Search; Semivolatiles: [ ] Acid Only [ ] BN Only [ ] TIC Search
SDWA: Volatiles: [ ] 524.2-MTBE; Semivolatiles: [ ] 525.2; Pest/Herb/PCBs Extractable: [ ] 505 [ ] 508; Vol.: [ ] 531.1; [ ] 515.1; [ ] 504.1 EDB/DBCP; Metals: [ ] Specify For Water Samples [ ] Total [ ] Dissolved: [ ] Lead and Copper
NPDES: Volatiles: [ ] 624; [ ] 602+MTBE; [ ] 601; [ ] 601/602+MTBE; Semivolatiles: [ ] 625; [ ] 625 PAHs only; Pest/Herb/PCBs Extractable: [ ] 608 Pesticides; [ ] 608 PCBs; Vol.: [ ] 615; Metals: [ ] 13 Priority Pollutant
RCRA/21E: Volatiles: [ ] 8260B TCL+MTBE; [ ] 8260B NH PETROLEUM; [ ] 8260B; [ ] 8021B Aromatics; [ ] 8021B Halocarbons; [ ] 8021B; Semivolatiles: [X] 8270C PAHs only; [ ] 8270C; [ ] 8081A Pesticides; [ ] 8082 PCBs; [ ] 8151A Herbicides; [ ] 8011 EDB/DBCP; Metals: [ ] 8 RCRA; [ ] 5 RCRA; [ ] MA List Metals; [ ] 23 TAL; [ ] Specify:

Petroleum Hydrocarbon: Ext. TPH: [ ] TPH-HR; [ ] Diesel Range Organics (DRO); [ ] ME DRO; [ ] CT ETPH; [X] MA DEP EPH w/all targets; [X] EPH Carbon Ranges only; [ ] TPH w/ PAHs; [ ] Hydrocarbon Fingerprint (GC/FID by ASTM D3328-00-Mod.); [ ] TPH by GC/FID (8015B Mod) Quantitative Only; Vol. TPH: [ ] Gasoline Range Organics (GRO); [ ] ME GRO; [ ] MA DEP VPH w/all targets; [ ] VPH Carbon ranges only
Haz. Waste: [ ] TCLP; [ ] SPLP; [ ] 8 Metals; [ ] PO only; [ ] VOA; [ ] Semi VOA; [ ] Pesticides; [ ] Herbicides; [ ] Corrosivity (as pH); [ ] Reactivity; [ ] Ignitability (as Flashpoint); [ ] Paint Filter; [ ] MA Basic Disposal Criteria: 8260B, TPH by GC, PCBs, 5 Metals, Corrosivity, Ignitability, Reactivity
General Chemistry: [ ] Nitrate; [ ] Nitrite; [ ] Chloride; [ ] Fluoride; [ ] Sulfate; [ ] Dissolved Phosphorus; [ ] Ammonia; [ ] TKN; [ ] Total Phosphorus; [ ] Total N (as NO2/NO3/TKN); [ ] Oil & Grease; [ ] COD; [ ] TOC; [ ] BOD; [ ] TDS; [ ] TSS; [ ] TS; [ ] Alkalinity; [ ] Cyanide, Total; [ ] Cyanide, Physiologically Available; [ ] pH; [ ] Dissolved Oxygen; [ ] Turbidity; [ ] Total Coliform; [ ] Fecal Coliform; [ ] HPC
Other

Sampling DATE	Sampling TIME	SAMPLE IDENTIFICATION	Matrix	Type	Container(s)	Preservation	Filtered	LABORATORY NUMBER (Lab Use Only)
8/31/05	23:00	DDD-P2-01-A	SOIL/Sediment	COMPOSITE	8 oz. glass	ICE	YES	>13
	23:02	DDD-P2-01-B						
	23:04	DDD-P2-01-C						
	23:30	DDD-P2-02-A						>14
	23:32	DDD-P2-02-B						
	23:34	DDD-P2-02-C						
	13:09	W2AID-P2-M-01-A						>5
	13:12	W2AID-P2-M-01-B						
	13:15	W2AID-P2-M-01-C						
	13:22	W2AID-P2-M-02-A						>6
	13:25	W2AID-P2-M-02-B						
	13:28	W2AID-P2-M-02-C						

REMARKS / SPECIAL INSTRUCTIONS

MA DEP MCP Data Enhancement Affirmation

- [ ] YES [ ] NO MCP Data Certification required.
- [ ] YES [ ] NO MCP Drinking Water Sample included.
  (Require collection of contingent duplicate sample. Trip blanks are also required, if VOA sample collected).

Signature: _____

1) Composite the A, B, + C sample aliquots
2) After compositing, freeze the A, B, + C aliquots remaining soil - and send to B + B Labs for archiving on dry ice.
3) PAH analyzed by 8270 w/(SIM) Selected Ion Monitoring

DATA QUALITY OBJECTIVES

Regulatory Program

State	Standard	Deliverables
[ ] CT	[X] MCP GW-1/S-1	[ ] PWS Form
[ ] ME	[X] MCP GW-2/S-2	[ ] MWRA
[X] MA	[ ] NY STARS	[ ] _____
[ ] NH	[ ] Drinking Water	
[ ] NY	[ ] Wastewater	
[ ] RI	[ ] Waste Disposal	
[ ] VT	[ ] Dredge Material	
[ ] ___	[ ] _____	

Project Specific QC

Many regulatory programs and EPA methods require project specific QC. Project specific QC includes Sample Duplicates, Matrix Spikes, and/or Matrix Spike Duplicates. Laboratory QC is not project specific unless prearranged. Project specific QC samples are charged on a per sample basis. **Each MS, MSD and Sample Duplicate requires an additional sample aliquot.**

Project Specific QC Required	Selection of QC Sample
[ ] Sample Duplicate	[ ] Please use sample:
[ ] Matrix Spike	_____
[ ] Matrix Spike Duplicate	

CHAIN-OF-CUSTODY RECORD

NOTE: All samples submitted subject to Standard Terms and Conditions on reverse hereof.

	Date	Time		
Relinquished by Sampler:	8/31/05	2021	Received by:	Receipt Temperature: [ ] Ice [ ] Refrigerated 2-6°C Recommended 4.8
Relinquished by:			Received by:	Container Count:
Relinquished by:			Received by Laboratory:	Shipping/Airbill Number:

Method of Shipment: [ ] GWA Courier [ ] Express Mail [ ] Federal Express [ ] UPS [ ] Hand [ ] _____

Custody Seal Number:

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www.groundwateranalytical.com

CHAIN-OF-CUSTODY RECORD AND WORK ORDER

№ 201615

Project Name: BUZZARD BAY	Firm: GEOINSIGHT
Project Number: 3871-002	Address: 5 LAN DRIVE
Sampler Name: KZ, LC, AW, AP	City / State / Zip: WESTFORD, MA 01886
Project Manager: KEVIN TRAINER	Telephone: 978-692-1114

INSTRUCTIONS: Use separate line for each container (except replicates).

TURNAROUND

- [X] STANDARD (10 Business Days)
- ☐ PRIORITY (5 Business Days)
- ☐ RUSH (RAN-________) (Rush requires Rush Authorization Number)
- [X] Please Email to: PDF to ktrainer@geoinc.com
- ☐ Please FAX to:

BILLING

- ☐ Purchase Order No.:
- ☐ Third Party Billing:
- ☐ GWA Quote:

Samples

Date	Time	Sample Identification	Matrix	Type	Number	Container	Preservation	Filtered	Laboratory Number (Lab Use Only)	Analysis Request
8/29/05	13:53	W2A10-P2-M-03-A	Soil / Sediment	Grab	1	250mL/8 oz Glass	Ice	No	7	8270C PAHs only SIM; MA DEP EPH w/all targets, EPH Carbon Ranges only
↓	13:56	W2A10-P2-M-03-B	↓	↓	1	↓	↓	↓	7	↓
↓	13:59	W2A10-P2-M-03-C	↓	↓	1	↓	↓	↓	7	↓
↓	14:05	W2A10-P2-M-04-A	↓	↓	1	↓	↓	↓	8	↓
↓	14:08	W2A10-P2-M-04-B	↓	↓	1	↓	↓	↓	8	↓
↓	14:11	W2A10-P2-M-04-C	↓	↓	1	↓	↓	↓	8	↓

Matrix options: Groundwater, Drinking Water, Wastewater, Soil, Other Solid, Oil/Organic Liquid. Type: Composite, Grab. Containers: 40mL VOA Vial, 60mL/2 oz Glass, 120mL/4 oz Amber Glass, 250mL/8 oz Glass, 500mL/16 oz Glass, 1L/32 oz Amber Glass, 250mL/8 oz Plastic, 500mL/16 oz Plastic, 1L/32 oz Plastic, 120mL Sterile. Preservation: HCl, HNO_3, H_2SO_4, NaOH, Methanol, Sodium Bisulfate, Ice. Filtered: Yes, No.

ANALYSIS REQUEST

- **Volatiles** — RCRA/21E: 8260B TCL+MTBE, 8260B NH PETROLEUM, 8260B, 8021B Aromatics, 8021B Halocarbons, 8021B; NPDES: 624, 602+MTBE, 601, 601/602+MTBE; SDWA: 524.2+MTBE; Options: TIC Search
- **Semivolatiles** — RCRA/21E: 8270C, [X] 8270C PAHs only SIM; NPDES: 625, 625 PAHs only; SDWA: 525.2; Options: Acid Only, B/N Only, TIC Search
- **Pest/Herb/PCBs** — 8081A Pesticides, 8082 PCBs, 8151A Herbicides, 8011 EDB/DBCP; 608 Pesticides, 608 PCBs, 615; 505, 508, 531.1, 515.1, 504.1 EDB/DBCP
- **Metals** — 8 RCRA, 15 RCRA, MA List Metals, 23 TAL, Specify:; 13 Priority Pollutant; Lead and Copper; Specify For Water Samples: Total, Dissolved
- **Petroleum Hydrocarbon** — TPH-IR; Diesel Range Organics (DRO), ME DRO; CT ETPH; [X] MA DEP EPH w/all targets, [X] EPH Carbon Ranges only, EPH w/4 PAHs; Hydrocarbon Fingerprint (GC/FID by ASTM D3328-00-Mod); TPH by GC/FID (8015B Mod) Quantitative Only; Gasoline Range Organics (GRO), ME GRO; MA DEP VPH w/all targets, VPH Carbon ranges only
- **Haz. Waste** — TCLP, SPLP, 8 Metals, Pb only, VOA, Semi VOA, Pesticides, Herbicides; Corrosivity (as pH), Reactivity, Ignitability (as Flashpoint), Paint Filter; MA Basic Disposal Criteria: 8260B, TPH by GC, PCBs, 5 Metals, Corrosivity, Ignitability, Reactivity
- **General Chemistry** — Nitrate, Nitrite, Chloride, Fluoride, Sulfate; Dissolved Phosphorus; Ammonia, TKN, Total Phosphorus, Total N (as NO2/NO3/TKN); Oil & Grease; COD, TOC; BOD, TDS, TSS, TS, Alkalinity; Cyanide, Total, Cyanide, Physiologically Available; pH, Dissolved Oxygen, Turbidity; Total Coliform, Fecal Coliform, HPC
- **Other**

REMARKS / SPECIAL INSTRUCTIONS

MA DEP MCP Data Enhancement Affirmation

☐ YES ☐ NO MCP Data Certification required.

☐ YES ☐ NO MCP Drinking Water Sample included.
(Require collection of contingent duplicate sample. Trip blanks are also required, if VOA sample collected).

Signature: ____________

1) Composite the A, B + C sample aliquots.
2) After compositing, freeze the A, B + C aliquots remaining soil and send to B+B labs for archiving on dry ice.
3) PAH analyzed by 8270 w/(SIM) Selected Ion Monitoring

DATA QUALITY OBJECTIVES

Regulatory Program

State	Standard	Deliverables
☐ CT	[X] MCP GW-1/S-1	☐ PWS Form
☐ ME	[X] MCP GW-2/S-2	☐ MWRA
[X] MA	☐ NY STARS	☐ ______
☐ NH	☐ Drinking Water	
☐ NY	☐ Wastewater	
☐ RI	☐ Waste Disposal	
☐ VT	☐ Dredge Material	
☐ ___	☐ ______	

Project Specific QC

Many regulatory programs and EPA methods require project specific QC. Project specific QC includes Sample Duplicates, Matrix Spikes, and/or Matrix Spike Duplicates. Laboratory QC is not project specific unless prearranged. Project specific QC samples are charged on a per sample basis. **Each MS, MSD and Sample Duplicate requires an additional sample aliquot.**

Project Specific QC Required
- ☐ Sample Duplicate
- ☐ Matrix Spike
- ☐ Matrix Spike Duplicate

Selection of QC Sample
- ☐ Please use sample: ____________

CHAIN-OF-CUSTODY RECORD

NOTE: All samples submitted subject to Standard Terms and Conditions on reverse hereof.

Relinquished by	Date	Time	Received by	
Relinquished by Sampler: [signature]	8/30/05	20:21	Received by:	Receipt Temperature: ☐ Ice ☐ Refrigerated 2-6 C Recommended 4.8
Relinquished by:	Date	Time	Received by:	Container Count:
Relinquished by:	Date	Time	Received by Laboratory: [signature]	Shipping/Airbill Number:

Method of Shipment: ☐ GWA Courier ☐ Express Mail ☐ Federal Express ☐ UPS ☐ Hand ☐ ________

Custody Seal Number:

GROUNDWATER ANALYTICAL

228 Main Street, P.O. Box 1200
Buzzards Bay, MA 02532
Telephone (508) 759-4441 • FAX (508) 759-4475
www.groundwateranalytical.com

CHAIN-OF-CUSTODY RECORD AND WORK ORDER

No. 201613

Project Name: BUZZARDS BAY	Firm: GEOINSIGHT
Project Number: 3871-002	Address: 5 LAN DRIVE
Sampler Name: KZ, AW, LC, AP	City / State / Zip: WESTFORD, MA 01886
Project Manager: KEVIN TRAINER	Telephone: 978-692-1114

INSTRUCTIONS: Use separate line for each container (except replicates).

TURNAROUND

- [X] STANDARD (10 Business Days)
- [ ] PRIORITY (5 Business Days)
- [ ] RUSH (RAN- _____)
  (Rush requires Rush Authorization Number)
- [X] Please Email to: PDF to KTrainer@geoinsight.com
- [ ] Please FAX to: _____

BILLING

- [ ] Purchase Order No.: _____
- [ ] Third Party Billing: _____
- [ ] GWA Quote: _____

ANALYSIS REQUEST

OPTIONS: ( ) TIC Search

Volatiles: SDWA ( ) 524.2+MTBE; NPDES ( ) 624; RCRA/21E ( ) 8260B TCL+MTBE, ( ) 8260B NH PETROLEUM, ( ) 8260B

Volatiles: NPDES ( ) 602+MTBE, ( ) 602 MTBE, ( ) 601, ( ) 601/602+MTBE; RCRA/21E ( ) 8021B Aromatics, ( ) 8021B Haloacarbons, ( ) 8021B

Semivolatiles: OPTIONS ( ) Acid Only, ( ) BN Only, ( ) TIC Search; SDWA ( ) 525.2; NPDES ( ) 625, ( ) 625 PAHs only; RCRA/21E ( ) 8270C, ( ) 8270C PAHs only [X]

Pest/Herb/PCBs Extractable: SDWA ( ) 505, ( ) 508; NPDES ( ) 608 Pesticides, ( ) 608 PCBs; RCRA/21E ( ) 8081A Pesticides, ( ) 8082 PCBs, ( ) 8151A Herbicides, ( ) 8011 EDB/DBCP

Pest/Herb/PCBs Vol.: SDWA ( ) 531.1, ( ) 515.1, ( ) 504.1 EDB/DBCP; NPDES ( ) 615

Metals: Specify for Water Samples ( ) Total ( ) Dissolved; SDWA ( ) Lead and Copper; NPDES ( ) 13 Priority Pollutant; RCRA/21E ( ) 8 RCRA, ( ) 5 RCRA, ( ) MA List Metals, ( ) 23 TAL, ( ) Specify

Petroleum Hydrocarbon Ext. TPH: ( ) TPH-HR, ( ) Diesel Range Organics (DRO), ( ) ME DRO, ( ) CT ETPH, [X] MA DEP EPH w/all targets, ( ) Hydrocarbon Fingerprint (GC/FID by ASTM D3328-00-Mod.), ( ) TPH by GC/FID (8015B Mod) Quantitative Only

Petroleum Hydrocarbon Vol. TPH: ( ) Gasoline Range Organics (GRO), ( ) ME GRO, ( ) MA DEP VPH w/all targets, ( ) VPH Carbon ranges only

Haz. Waste: ( ) TCLP, ( ) EPLP, ( ) 8 Metals, ( ) VOA, ( ) Semi VOA, ( ) Pesticides, ( ) Herbicides, ( ) Corrosivity (as pH), ( ) Reactivity, ( ) Ignitability (as Flashpoint), ( ) Paint Filter, ( ) MA Basic Disposal Criteria: B2600, TPH by GC, PCBs, 5 Metals, Corrosivity, Ignitability, Reactivity

General Chemistry: ( ) Nitrate, ( ) Nitrite, ( ) Chloride, ( ) Fluoride, ( ) Sulfate, ( ) Dissolved Phosphorus, ( ) Ammonia, ( ) TKN, ( ) Total Phosphorus, ( ) Total N (as N02/N03/TKN), ( ) Oil & Grease, ( ) COD, ( ) TOC, ( ) BOD, ( ) TDS, ( ) TSS, ( ) TS, ( ) Alkalinity, ( ) Cyanide, Total, ( ) Cyanide, Physiologically Available, ( ) pH, ( ) Dissolved Oxygen, ( ) Turbidity, ( ) Total Coliform, ( ) Fecal Coliform, ( ) HPC

Other

Sampling DATE	Sampling TIME	SAMPLE IDENTIFICATION	Matrix	Type	Container(s)	Preservation	Filtered	LABORATORY NUMBER (Lab Use Only)
7/20/05	09:38	W2A11-P2-UIT-01-A	SOIL/Sediment	GRAB	1 x 120mL/4 oz Amber Glass	ICE	YES	11
	09:41	W2A11-P2-UIT-01-B	SOIL/Sediment	GRAB	1 x 120mL/4 oz Amber Glass	ICE	YES	
	09:44	W2A11-P2-UIT-01-C	SOIL/Sediment	GRAB	1 x 120mL/4 oz Amber Glass	ICE	YES	
	09:48	W2A11-P2-UIT-01-A	SOIL/Sediment	GRAB	1 x 120mL/4 oz Amber Glass	ICE	YES	9
	09:55	W2A11-P2-UIT-01-B	SOIL/Sediment	GRAB	1 x 120mL/4 oz Amber Glass	ICE	YES	
	09:57	W2A11-P2-UIT-01-C	SOIL/Sediment	GRAB	1 x 120mL/4 oz Amber Glass	ICE	YES	
	11:21	W2A11-P2-UIT-02-A	SOIL/Sediment	GRAB	1 x 120mL/4 oz Amber Glass	ICE	YES	12
	11:25	W2A11-P2-UIT-02-B	SOIL/Sediment	GRAB	1 x 120mL/4 oz Amber Glass	ICE	YES	
	11:28	W2A11-P2-UIT-02-C	SOIL/Sediment	GRAB	1 x 120mL/4 oz Amber Glass	ICE	YES	
	11:31	W2A11-P2-UIT-02-A	SOIL/Sediment	GRAB	1 x 120mL/4 oz Amber Glass	ICE	YES	10
	11:34	W2A11-P2-UIT-02-B	SOIL/Sediment	GRAB	1 x 120mL/4 oz Amber Glass	ICE	YES	
	11:36	W2A11-P2-UIT-02-C	SOIL/Sediment	GRAB	1 x 120mL/4 oz Amber Glass	ICE	YES	

REMARKS / SPECIAL INSTRUCTIONS

MA DEP MCP Data Enhancement Affirmation

- [ ] YES [ ] NO MCP Data Certification required.
- [ ] YES [ ] NO MCP Drinking Water Sample included.
  (Require collection of contingent duplicate sample. Trip blanks are also required, if VOA sample collected).

Signature: _____

1) Composite the A, B, & C sample aliquots.
2) After compositing, freeze the A, B, & C aliquots remaining soil and send to BBB Lab for archiving on dry ice.
3) PAH analyzed by 8270 w/SIM\ selected Ion Monitoring

DATA QUALITY OBJECTIVES

Regulatory Program

State	Standard	Deliverables
[ ] CT	[X] MCP GW-1/S-1	[ ] PWS Form
[ ] ME	[X] MCP GW-2/S-2	[ ] MWRA
[X] MA	[ ] NY STARS	[ ] _____
[ ] NH	[ ] Drinking Water	
[ ] NY	[ ] Wastewater	
[ ] RI	[ ] Waste Disposal	
[ ] VT	[ ] Dredge Material	
[ ] ___	[ ] _____	

Project Specific QC

Many regulatory programs and EPA methods require project specific QC. Project specific QC includes Sample Duplicates, Matrix Spikes, and/or Matrix Spike Duplicates. Laboratory QC is not project specific unless prearranged. Project specific QC samples are charged on a per sample basis. **Each MS, MSD and Sample Duplicate requires an additional sample aliquot.**

Project Specific QC Required	Selection of QC Sample
[ ] Sample Duplicate	[ ] Please use sample:
[X] Matrix Spike	_____
[ ] Matrix Spike Duplicate	

CHAIN-OF-CUSTODY RECORD

NOTE: All samples submitted subject to Standard Terms and Conditions on reverse hereof.

	Date	Time		
Relinquished by Sampler: Allison Schueller	8/31/05	2021	Received by:	Receipt Temperature: [ ] Ice [ ] Refrigerated 2-6°C Recommended 4/8
Relinquished by:	Date	Time	Received by:	Container Count:
Relinquished by:	Date	Time	Received by Laboratory:	Shipping/Airbill Number:

Method of Shipment: [ ] GWA Courier [ ] Express Mail [ ] Federal Express [ ] UPS [ ] Hand [ ] _____

Custody Seal Number:

GROUNDWATER ANALYTICAL

Quality Assurance/Quality Control

A. Program Overview

Groundwater Analytical conducts an active Quality Assurance program to ensure the production of high quality, valid data. This program closely follows the guidance provided by *Interim Guidelines and Specifications for Preparing Quality Assurance Project Plans,* US EPA QAMS-005/80 (1980), and *Test Methods for Evaluating Solid Waste,* US EPA, SW-846, Update III (1996).

Quality Control protocols include written Standard Operating Procedures (SOPs) developed for each analytical method. SOPs are derived from US EPA methodologies and other established references. Standards are prepared from commercially obtained reference materials of certified purity, and documented for traceability.

Quality Assessment protocols for most organic analyses include a minimum of one laboratory control sample, one method blank, one matrix spike sample, and one sample duplicate for each sample preparation batch. All samples, standards, blanks, laboratory control samples, matrix spikes and sample duplicates are spiked with internal standards and surrogate compounds. All instrument sequences begin with an initial calibration verification standard and a blank; and excepting GC/MS sequences, all sequences close with a continuing calibration standard. GC/MS systems are tuned to appropriate ion abundance criteria daily, or for each 12 hour operating period, whichever is more frequent.

Quality Assessment protocols for most inorganic analyses include a minimum of one laboratory control sample, one method blank, one matrix spike sample, and one sample duplicate for each sample preparation batch. Standard curves are derived from one reagent blank and four concentration levels. Curve validity is verified by standard recoveries within plus or minus ten percent of the curve.

B. Definitions

Batches are used as the basic unit for Quality Assessment. A Batch is defined as twenty or fewer samples of the same matrix which are prepared together for the same analysis, using the same lots of reagents and the same techniques or manipulations, all within the same continuum of time, up to but not exceeding 24 hours.

Laboratory Control Samples are used to assess the accuracy of the analytical method. A Laboratory Control Sample consists of reagent water or sodium sulfate spiked with a group of target analytes representative of the method analytes. Accuracy is defined as the degree of agreement of the measured value with the true or expected value. Percent Recoveries for the Laboratory Control Samples are calculated to assess accuracy.

Method Blanks are used to assess the level of contamination present in the analytical system. Method Blanks consist of reagent water or an aliquot of sodium sulfate. Method Blanks are taken through all the appropriate steps of an analytical method. Sample data reported is not corrected for blank contamination.

Surrogate Compounds are used to assess the effectiveness of an analytical method in dealing with each sample matrix. Surrogate Compounds are organic compounds which are similar to the target analytes of interest in chemical behavior, but which are not normally found in environmental samples. Percent Recoveries are calculated for each Surrogate Compound.

GROUNDWATER ANALYTICAL

Quality Control Report
Laboratory Control Samples

		LCS		LCSD	
Category:	EPA 8270C Modified	Instrument ID:	MS-6 HP 6890	Instrument ID:	MS-6 HP 6890
QC Batch ID:	EP-2138-M	Extracted:	09-08-05 11:00	Extracted:	09-08-05 11:00
Matrix:	Soil	Analyzed:	09-14-05 15:29	Analyzed:	09-14-05 16:08
Units:	ug/Kg	Analyst:	JJT	Analyst:	JJT

CAS Number	Analyte	LCS			LCS Duplicate				QC Limits	
		Spiked	Measured	Recovery	Spiked	Measured	Recovery	RPD	Spike	RPD
91-20-3	Naphthalene	330	190	58 %	330	210	64 %	10 %	40 - 140 %	20%
91-57-6	2-Methylnaphthalene	330	210	64 %	330	250	76 %	17 %	40 - 140 %	20%
85-01-8	Phenanthrene	330	270	82 %	330	270	82 %	0 %	40 - 140 %	20%
83-32-9	Acenaphthene	330	270	82 %	330	290	88 %	7 %	40 - 140 %	20%
208-96-8	Acenaphthylene	330	250	76 %	330	270	82 %	8 %	40 - 140 %	20%
86-73-7	Fluorene	330	260	79 %	330	280	85 %	7 %	40 - 140 %	20%
120-12-7	Anthracene	330	270	82 %	330	280	85 %	4 %	40 - 140 %	20%
206-44-0	Fluoranthene	330	310	94 %	330	330	100 %	6 %	40 - 140 %	20%
129-00-0	Pyrene	330	310	94 %	330	320	97 %	3 %	40 - 140 %	20%
56-55-3	Benzo[a]anthracene	330	310	94 %	330	330	100 %	6 %	40 - 140 %	20%
218-01-9	Chrysene	330	310	94 %	330	330	100 %	6 %	40 - 140 %	20%
205-99-2	Benzo[b]fluoranthene	330	300	91 %	330	310	94 %	3 %	40 - 140 %	20%
207-08-9	Benzo[k]fluoranthene	330	310	94 %	330	320	97 %	3 %	40 - 140 %	20%
50-32-8	Benzo[a]pyrene	330	300	91 %	330	310	94 %	3 %	40 - 140 %	20%
193-39-5	Indeno[1,2,3-c,d]pyrene	330	270	82 %	330	280	85 %	4 %	40 - 140 %	20%
53-70-3	Dibenzo[a,h]anthracene	330	250	76 %	330	260	79 %	4 %	40 - 140 %	20%
191-24-2	Benzo[g,h,i]perylene	330	270	82 %	330	290	88 %	7 %	40 - 140 %	20%

QC Surrogate Compound	Spiked	Measured	Recovery	Spiked	Measured	Recovery	QC Limits
ortho-Terphenyl	2,700	2,100	78 %	2,700	2,200	81 %	40 - 140 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).
Method modified by use of selected ion monitoring (SIM) in accordance with Section 7.5.5 of the method.
Method protocol modified to include acidification and the surrogate compound in accordance with the MA DEP Method for the Determination of Extractable Petroleum Hydrocarbons.
Sample extraction performed by EPA Method 3510C.

Report Notations: All calculations performed prior to rounding. Quality Control Limits are defined by the methodology, or alternatively based upon the historical average recovery plus or minus three standard deviation units.

The LCS and LCSD are prepared from separate source standards than those used for calibration.

GROUNDWATER ANALYTICAL

Quality Control Report
Method Blank

Category:	EPA Method 8270C (Mod.) - EPH PAHs by GC/MS-SIM	Instrument ID:	MS-6 HP 6890
QC Batch ID:	EP-2138-M	Extracted:	09-08-05 11:00
Matrix:	Soil	Analyzed:	09-14-05 17:27
		Analyst:	JJT

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
91-20-3	Naphthalene	BRL		ug/Kg	10
91-57-6	2-Methylnaphthalene	BRL		ug/Kg	10
208-96-8	Acenaphthylene	BRL		ug/Kg	10
83-32-9	Acenaphthene	BRL		ug/Kg	10
86-73-7	Fluorene	BRL		ug/Kg	10
85-01-8	Phenanthrene	BRL		ug/Kg	10
120-12-7	Anthracene	BRL		ug/Kg	10
206-44-0	Fluoranthene	BRL		ug/Kg	10
129-00-0	Pyrene	BRL		ug/Kg	10
56-55-3	Benzo[a]anthracene	BRL		ug/Kg	10
218-01-9	Chrysene	BRL		ug/Kg	10
205-99-2	Benzo[b]fluoranthene	BRL		ug/Kg	10
207-08-9	Benzo[k]fluoranthene	BRL		ug/Kg	10
50-32-8	Benzo[a]pyrene	BRL		ug/Kg	10
193-39-5	Indeno[1,2,3-c,d]pyrene	BRL		ug/Kg	10
53-70-3	Dibenzo[a,h]anthracene	BRL		ug/Kg	10
191-24-2	Benzo[g,h,i]perylene	BRL		ug/Kg	10

QC Surrogate Compound	Spiked	Measured	Recovery	QC Limits
ortho-Terphenyl	2700	2100	77 %	40 - 140 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).
Method modified by use of selected ion monitoring (SIM) in accordance with Section 7.5.5 of the method.
Method protocol modified to include acidification and the surrogate compound in accordance with the MA DEP Method for the Determination of Extractable Petroleum Hydrocarbons.
Sample extraction performed by EPA Method 3546.

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample size and dilution.

GROUNDWATER ANALYTICAL

Quality Control Report
Laboratory Control Samples

		LCS		LCSD	
Category:	MA DEP EPH Method	Instrument ID:	GC-7 HP 5890	Instrument ID:	GC-7 HP 5890
QC Batch ID:	EP-2138-M	Extracted:	09-08-05 11:00	Extracted:	09-08-05 11:00
Matrix:	Soil	Analyzed (AL):	09-09-05 14:18	Analyzed (AL):	09-09-05 15:42
Units:	mg/Kg	Analyzed (AR):	09-09-05 14:58	Analyzed (AR):	09-09-05 16:26
		Analyst:	MM	Analyst:	MM

CAS Number	Analyte	LCS			LCS Duplicate				QC Limits	
		Spiked	Measured	Recovery	Spiked	Measured	Recovery	RPD	Spike	RPD
111-84-2	*n*-Nonane (C_9)	3.3	1.9	59 %	3.3	2.0	61 %	3 %	30 - 140 %	25%
124-18-5	*n*-Decane (C_{10})	3.3	2.2	68 %	3.3	2.3	70 %	3 %	40 - 140 %	25%
112-40-3	*n*-Dodecane (C_{12})	3.3	2.4	72 %	3.3	2.4	74 %	3 %	40 - 140 %	25%
629-59-4	*n*-Tetradecane (C_{14})	3.3	2.5	76 %	3.3	2.6	79 %	3 %	40 - 140 %	25%
544-76-3	*n*-Hexadecane (C_{16})	3.3	2.7	83 %	3.3	2.9	87 %	4 %	40 - 140 %	25%
593-45-3	*n*-Octadecane (C_{18})	3.3	2.9	89 %	3.3	3.1	93 %	5 %	40 - 140 %	25%
n/a	*n*-C9 to *n*-C18 Group	20	15	74 %	20	15	77 %	4 %	40 - 140 %	25%
629-92-5	*n*-Nonadecane (C_{19})	3.3	2.8	84 %	3.3	2.9	88 %	5 %	40 - 140 %	25%
112-95-8	*n*-Eicosane (C_{20})	3.3	2.9	89 %	3.3	3.1	94 %	6 %	40 - 140 %	25%
629-97-0	*n*-Docosane (C_{22})	3.3	2.9	89 %	3.3	3.1	94 %	5 %	40 - 140 %	25%
646-31-1	*n*-Tetracosane (C_{24})	3.3	2.9	89 %	3.3	3.1	95 %	6 %	40 - 140 %	25%
630-01-3	*n*-Hexacosane (C_{26})	3.3	2.9	87 %	3.3	3.0	92 %	5 %	40 - 140 %	25%
630-02-4	*n*-Octacosane (C_{28})	3.3	2.8	85 %	3.3	3.0	90 %	5 %	40 - 140 %	25%
638-68-6	*n*-Triacontane (C_{30})	3.3	2.8	84 %	3.3	2.9	88 %	5 %	40 - 140 %	25%
630-06-8	*n*-Hexatriacontane (C_{36})	3.3	2.4	72 %	3.3	2.5	75 %	3 %	40 - 140 %	25%
n/a	*n*-C19 to *n*-C36 Group	26	22	85 %	26	24	90 %	5 %	40 - 140 %	25%
91-20-3	Naphthalene	3.3	2.2	67 %	3.3	2.3	69 %	3 %	40 - 140 %	25%
91-57-6	2-Methylnaphthalene	3.3	2.4	73 %	3.3	2.5	76 %	3 %	40 - 140 %	25%
208-96-8	Acenaphthylene	3.3	2.5	76 %	3.3	2.6	79 %	4 %	40 - 140 %	25%
83-32-9	Acenaphthene	3.3	2.3	71 %	3.3	2.4	74 %	4 %	40 - 140 %	25%
86-73-7	Fluorene	3.3	2.5	75 %	3.3	2.6	78 %	4 %	40 - 140 %	25%
85-01-8	Phenanthrene	3.3	2.7	81 %	3.3	2.8	84 %	3 %	40 - 140 %	25%
120-12-7	Anthracene	3.3	2.8	86 %	3.3	2.9	89 %	3 %	40 - 140 %	25%
206-44-0	Fluoranthene	3.3	2.7	82 %	3.3	2.8	85 %	4 %	40 - 140 %	25%
129-00-0	Pyrene	3.3	2.7	81 %	3.3	2.8	84 %	4 %	40 - 140 %	25%
56-55-3	Benzo[a]anthracene	3.3	2.7	82 %	3.3	2.8	86 %	5 %	40 - 140 %	25%
218-01-9	Chrysene	3.3	2.7	83 %	3.3	2.9	87 %	5 %	40 - 140 %	25%
205-99-2	Benzo[b]fluoranthene	3.3	2.7	82 %	3.3	2.8	86 %	5 %	40 - 140 %	25%
207-08-9	Benzo[k]fluoranthene	3.3	2.7	81 %	3.3	2.8	85 %	5 %	40 - 140 %	25%
50-32-8	Benzo[a]pyrene	3.3	2.7	81 %	3.3	2.8	84 %	5 %	40 - 140 %	25%
193-39-5	Indeno[1,2,3-c,d]pyrene	3.3	2.9	87 %	3.3	3.0	91 %	5 %	40 - 140 %	25%
53-70-3	Dibenzo[a,h]anthracene	3.3	2.8	83 %	3.3	2.9	89 %	6 %	40 - 140 %	25%
191-24-2	Benzo[g,h,i]perylene	3.3	2.7	81 %	3.3	2.9	87 %	7 %	40 - 140 %	25%
n/a	PAH Group	56	45	80 %	56	47	83 %	4 %	40 - 140 %	25%

QC Surrogate Compound		Spiked	Measured	Recovery	Spiked	Measured	Recovery		QC Limits
Fractionation:	2-Fluorobiphenyl	2.7	2.1	78 %	2.7	2.2	81 %		40 - 140 %
	2-Bromonaphthalene	2.7	2.0	74 %	2.7	2.0	74 %		40 - 140 %
Extraction:	Chloro-octadecane	2.7	2.1	78 %	2.7	2.2	81 %		40 - 140 %
	ortho-Terphenyl	2.7	2.1	78 %	2.7	2.1	78 %		40 - 140 %

Fractionation Breakthrough Evaluation						QC Limits
91-20-3	Naphthalene	LCS	0 %	LCSD	0 %	5%
91-57-6	2-Methylnaphthalene	LCS	0 %	LCSD	0 %	5%

Method Reference: Method for the Determination of Extractable Petroleum Hydrocarbons, MA DEP (Revision 1.1, 2004). Method modified by use of microwave accelerated solvent extraction technique.

Report Notations: All calculations performed prior to rounding. Quality Control Limits are defined by the methodology, or alternatively based upon the historical average recovery plus or minus three standard deviation units.

The LCS and LCSD are prepared from separate source standards than those used for calibration.

GROUNDWATER ANALYTICAL

Quality Control Report
Method Blank

Category:	MA DEP EPH	Instrument ID:	GC-7 HP 5890
QC Batch ID:	EP-2138-M	Extracted:	09-08-05 11:00
Matrix:	Soil	Analyzed (AL):	09-09-05 14:21
		Analyzed (AR):	09-09-05 15:05
		Analyst:	MM

EPH Ranges	Concentration	Notes	Units	Reporting Limit
n-C9 to n-C18 Aliphatic Hydrocarbons †	BRL		mg/Kg	30
n-C19 to n-C36 Aliphatic Hydrocarbons †	BRL		mg/Kg	30
n-C11 to n-C22 Aromatic Hydrocarbons †◊	BRL		mg/Kg	30
Unadjusted n-C11 to n-C22 Aromatic Hydrocarbons †	BRL		mg/Kg	30

QC Surrogate Compound		Spiked	Measured	Recovery	QC Limits
Fractionation:	2-Fluorobiphenyl	2.7	2.2	**83** %	40 - 140 %
	2-Bromonaphthalene	2.7	2.0	**76** %	40 - 140 %
Extraction:	Chloro-octadecane	2.7	2.0	**75** %	40 - 140 %
	ortho-Terphenyl	2.7	2.3	**86** %	40 - 140 %

Method Reference: Method for the Determination of Extractable Petroleum Hydrocarbons, MA DEP (Revision 1.1, 2004). Sample extraction performed by microwave accelerated solvent extraction technique.

Report Notations:

BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample size and dilution.

† Hydrocarbon range data excludes concentrations of any surrogate(s) and/or internal standards eluting in that range.

◊ n-C11 to n-C22 Aromatic Hydrocarbons range data excludes the method target analyte concentrations.

GROUNDWATER ANALYTICAL

Quality Control Report
Laboratory Control Samples

		LCS		LCSD	
Category:	MA DEP EPH Method	Instrument ID:	GC-7 HP 5890	Instrument ID:	GC-7 HP 5890
QC Batch ID:	EP-2140-M	Extracted:	09-09-05 15:00	Extracted:	09-09-05 15:00
Matrix:	Soil	Analyzed (AL):	09-12-05 15:40	Analyzed (AL):	09-12-05 17:10
Units:	mg/Kg	Analyzed (AR):	09-12-05 16:25	Analyzed (AR):	09-12-05 17:54
		Analyst:	MM	Analyst:	MM

CAS Number	Analyte	LCS			LCS Duplicate				QC Limits	
		Spiked	Measured	Recovery	Spiked	Measured	Recovery	RPD	Spike	RPD
111-84-2	*n*-Nonane (C_9)	3.3	1.9	58 %	3.3	1.8	55 %	5 %	30 - 140 %	25%
124-18-5	*n*-Decane (C_{10})	3.3	2.3	69 %	3.3	2.1	65 %	6 %	40 - 140 %	25%
112-40-3	*n*-Dodecane (C_{12})	3.3	2.4	73 %	3.3	2.3	68 %	7 %	40 - 140 %	25%
629-59-4	*n*-Tetradecane (C_{14})	3.3	2.5	77 %	3.3	2.4	72 %	8 %	40 - 140 %	25%
544-76-3	*n*-Hexadecane (C_{16})	3.3	2.7	82 %	3.3	2.6	78 %	5 %	40 - 140 %	25%
593-45-3	*n*-Octadecane (C_{18})	3.3	2.9	88 %	3.3	2.8	84 %	4 %	40 - 140 %	25%
n/a	*n*-C9 to *n*-C18 Group	20	15	75 %	20	14	70 %	6 %	40 - 140 %	25%
629-92-5	*n*-Nonadecane (C_{19})	3.3	2.8	84 %	3.3	2.7	81 %	3 %	40 - 140 %	25%
112-95-8	*n*-Eicosane (C_{20})	3.3	2.8	86 %	3.3	2.7	83 %	4 %	40 - 140 %	25%
629-97-0	*n*-Docosane (C_{22})	3.3	2.8	84 %	3.3	2.7	81 %	4 %	40 - 140 %	25%
646-31-1	*n*-Tetracosane (C_{24})	3.3	2.8	85 %	3.3	2.7	82 %	3 %	40 - 140 %	25%
630-01-3	*n*-Hexacosane (C_{26})	3.3	2.7	82 %	3.3	2.6	79 %	3 %	40 - 140 %	25%
630-02-4	*n*-Octacosane (C_{28})	3.3	2.6	79 %	3.3	2.5	77 %	3 %	40 - 140 %	25%
638-68-6	*n*-Triacontane (C_{30})	3.3	2.6	78 %	3.3	2.5	76 %	3 %	40 - 140 %	25%
630-06-8	*n*-Hexatriacontane (C_{36})	3.3	2.3	71 %	3.3	2.3	69 %	3 %	40 - 140 %	25%
n/a	*n*-C19 to *n*-C36 Group	26	21	81 %	26	21	79 %	3 %	40 - 140 %	25%
91-20-3	Naphthalene	3.3	2.1	63 %	3.3	2.1	64 %	2 %	40 - 140 %	25%
91-57-6	2-Methylnaphthalene	3.3	2.3	69 %	3.3	2.4	72 %	4 %	40 - 140 %	25%
208-96-8	Acenaphthylene	3.3	2.4	73 %	3.3	2.5	75 %	2 %	40 - 140 %	25%
83-32-9	Acenaphthene	3.3	2.2	68 %	3.3	2.3	70 %	3 %	40 - 140 %	25%
86-73-7	Fluorene	3.3	2.4	72 %	3.3	2.5	76 %	4 %	40 - 140 %	25%
85-01-8	Phenanthrene	3.3	2.5	77 %	3.3	2.7	82 %	6 %	40 - 140 %	25%
120-12-7	Anthracene	3.3	2.7	83 %	3.3	2.9	87 %	5 %	40 - 140 %	25%
206-44-0	Fluoranthene	3.3	2.6	79 %	3.3	2.8	84 %	6 %	40 - 140 %	25%
129-00-0	Pyrene	3.3	2.6	77 %	3.3	2.7	82 %	6 %	40 - 140 %	25%
56-55-3	Benzo[a]anthracene	3.3	2.6	79 %	3.3	2.7	81 %	3 %	40 - 140 %	25%
218-01-9	Chrysene	3.3	2.7	82 %	3.3	2.7	82 %	0 %	40 - 140 %	25%
205-99-2	Benzo[b]fluoranthene	3.3	2.5	75 %	3.3	2.6	78 %	5 %	40 - 140 %	25%
207-08-9	Benzo[k]fluoranthene	3.3	2.6	78 %	3.3	2.6	78 %	0 %	40 - 140 %	25%
50-32-8	Benzo[a]pyrene	3.3	2.5	76 %	3.3	2.6	78 %	2 %	40 - 140 %	25%
193-39-5	Indeno[1,2,3-c,d]pyrene	3.3	2.6	79 %	3.3	2.7	81 %	3 %	40 - 140 %	25%
53-70-3	Dibenzo[a,h]anthracene	3.3	2.5	75 %	3.3	2.5	75 %	0 %	40 - 140 %	25%
191-24-2	Benzo[g,h,i]perylene	3.3	2.4	73 %	3.3	2.5	75 %	3 %	40 - 140 %	25%
n/a	PAH Group	56	42	75 %	56	44	78 %	3 %	40 - 140 %	25%

QC Surrogate Compound		Spiked	Measured	Recovery	Spiked	Measured	Recovery		QC Limits
Fractionation:	2-Fluorobiphenyl	2.7	2.0	74 %	2.7	2.2	81 %		40 - 140 %
	2-Bromonaphthalene	2.7	2.1	78 %	2.7	2.3	85 %		40 - 140 %
Extraction:	Chloro-octadecane	2.7	2.0	74 %	2.7	2.0	74 %		40 - 140 %
	ortho-Terphenyl	2.7	2.0	74 %	2.7	2.1	78 %		40 - 140 %

Fractionation Breakthrough Evaluation						QC Limits
91-20-3	Naphthalene	LCS	0 %	LCSD	0 %	5%
91-57-6	2-Methylnaphthalene	LCS	0 %	LCSD	0 %	5%

Method Reference: Method for the Determination of Extractable Petroleum Hydrocarbons, MA DEP (Revision 1.1, 2004). Method modified by use of microwave accelerated solvent extraction technique.

Report Notations: All calculations performed prior to rounding. Quality Control Limits are defined by the methodology, or alternatively based upon the historical average recovery plus or minus three standard deviation units.

The LCS and LCSD are prepared from separate source standards than those used for calibration.

GROUNDWATER ANALYTICAL

Quality Control Report
Method Blank

Category:	MA DEP EPH	Instrument ID:	GC-7 HP 5890
QC Batch ID:	EP-2140-M	Extracted:	09-09-05 15:00
Matrix:	Soil	Analyzed (AL):	09-12-05 14:11
		Analyzed (AR):	09-12-05 14:56
		Analyst:	MM

EPH Ranges	Concentration	Notes	Units	Reporting Limit
n-C9 to n-C18 Aliphatic Hydrocarbons †	BRL		mg/Kg	30
n-C19 to n-C36 Aliphatic Hydrocarbons †	BRL		mg/Kg	30
n-C11 to n-C22 Aromatic Hydrocarbons †◊	BRL		mg/Kg	30
Unadjusted n-C11 to n-C22 Aromatic Hydrocarbons †	BRL		mg/Kg	30

QC Surrogate Compound		Spiked	Measured	Recovery	QC Limits
Fractionation:	2-Fluorobiphenyl	2.7	2.3	87 %	40 - 140 %
	2-Bromonaphthalene	2.7	2.3	88 %	40 - 140 %
Extraction:	Chloro-octadecane	2.7	2.0	76 %	40 - 140 %
	ortho-Terphenyl	2.7	2.1	79 %	40 - 140 %

Method Reference: Method for the Determination of Extractable Petroleum Hydrocarbons, MA DEP (Revision 1.1, 2004). Sample extraction performed by microwave accelerated solvent extraction technique.

Report Notations:

BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample size and dilution.

† Hydrocarbon range data excludes concentrations of any surrogate(s) and/or internal standards eluting in that range.

◊ n-C11 to n-C22 Aromatic Hydrocarbons range data excludes the method target analyte concentrations.

GROUNDWATER ANALYTICAL

Quality Control Report
Laboratory Control Samples

		LCS		LCSD	
Category:	EPA 8270C Modified	Instrument ID:	MS-6 HP 6890	Instrument ID:	MS-6 HP 6890
QC Batch ID:	EP-2140-M	Extracted:	09-09-05 15:00	Extracted:	09-09-05 15:00
Matrix:	Soil	Analyzed:	09-13-05 03:58	Analyzed:	09-13-05 04:37
Units:	ug/Kg	Analyst:	JJT	Analyst:	JJT

CAS Number	Analyte	LCS			LCS Duplicate				QC Limits	
		Spiked	Measured	Recovery	Spiked	Measured	Recovery	RPD	Spike	RPD
91-20-3	Naphthalene	330	200	61 %	330	210	64 %	5 %	40 - 140 %	20%
91-57-6	2-Methylnaphthalene	330	220	67 %	330	240	73 %	9 %	40 - 140 %	20%
85-01-8	Phenanthrene	330	240	73 %	330	250	76 %	4 %	40 - 140 %	20%
83-32-9	Acenaphthene	330	270	82 %	330	280	85 %	4 %	40 - 140 %	20%
208-96-8	Acenaphthylene	330	250	76 %	330	260	79 %	4 %	40 - 140 %	20%
86-73-7	Fluorene	330	250	76 %	330	260	79 %	4 %	40 - 140 %	20%
120-12-7	Anthracene	330	240	73 %	330	250	76 %	4 %	40 - 140 %	20%
206-44-0	Fluoranthene	330	270	82 %	330	290	88 %	7 %	40 - 140 %	20%
129-00-0	Pyrene	330	270	82 %	330	290	88 %	7 %	40 - 140 %	20%
56-55-3	Benzo[a]anthracene	330	270	82 %	330	290	88 %	7 %	40 - 140 %	20%
218-01-9	Chrysene	330	270	82 %	330	290	88 %	7 %	40 - 140 %	20%
205-99-2	Benzo[b]fluoranthene	330	260	79 %	330	280	85 %	7 %	40 - 140 %	20%
207-08-9	Benzo[k]fluoranthene	330	270	82 %	330	290	88 %	7 %	40 - 140 %	20%
50-32-8	Benzo[a]pyrene	330	260	79 %	330	290	88 %	11 %	40 - 140 %	20%
193-39-5	Indeno[1,2,3-c,d]pyrene	330	260	79 %	330	280	85 %	7 %	40 - 140 %	20%
53-70-3	Dibenzo[a,h]anthracene	330	240	73 %	330	260	79 %	8 %	40 - 140 %	20%
191-24-2	Benzo[g,h,i]perylene	330	270	82 %	330	290	88 %	7 %	40 - 140 %	20%

QC Surrogate Compound	Spiked	Measured	Recovery	Spiked	Measured	Recovery	QC Limits
ortho-Terphenyl	2,700	1,900	70 %	2,700	2,100	78 %	40 - 140 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).
Method modified by use of selected ion monitoring (SIM) in accordance with Section 7.5.5 of the method.
Method protocol modified to include acidification and the surrogate compound in accordance with the MA DEP Method for the Determination of Extractable Petroleum Hydrocarbons.
Sample extraction performed by EPA Method 3546.

Report Notations: All calculations performed prior to rounding. Quality Control Limits are defined by the methodology, or alternatively based upon the historical average recovery plus or minus three standard deviation units.

The LCS and LCSD are prepared from separate source standards than those used for calibration.

GROUNDWATER ANALYTICAL

Quality Control Report
Method Blank

Category:	EPA Method 8270C (Mod.) - EPH PAHs by GC/MS-SIM	Instrument ID:	MS-6 HP 6890
QC Batch ID:	EP-2140-M	Extracted:	09-09-05 15:00
Matrix:	Soil	Analyzed:	09-13-05 03:19
		Analyst:	JJT

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
91-20-3	Naphthalene	BRL		ug/Kg	10
91-57-6	2-Methylnaphthalene	BRL		ug/Kg	10
208-96-8	Acenaphthylene	BRL		ug/Kg	10
83-32-9	Acenaphthene	BRL		ug/Kg	10
86-73-7	Fluorene	BRL		ug/Kg	10
85-01-8	Phenanthrene	BRL		ug/Kg	10
120-12-7	Anthracene	BRL		ug/Kg	10
206-44-0	Fluoranthene	BRL		ug/Kg	10
129-00-0	Pyrene	BRL		ug/Kg	10
56-55-3	Benzo[a]anthracene	BRL		ug/Kg	10
218-01-9	Chrysene	BRL		ug/Kg	10
205-99-2	Benzo[b]fluoranthene	BRL		ug/Kg	10
207-08-9	Benzo[k]fluoranthene	BRL		ug/Kg	10
50-32-8	Benzo[a]pyrene	BRL		ug/Kg	10
193-39-5	Indeno[1,2,3-c,d]pyrene	BRL		ug/Kg	10
53-70-3	Dibenzo[a,h]anthracene	BRL		ug/Kg	10
191-24-2	Benzo[g,h,i]perylene	BRL		ug/Kg	10

QC Surrogate Compound	Spiked	Measured	Recovery	QC Limits
ortho-Terphenyl	2,700	2,300	86 %	40 - 140 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).
Method modified by use of selected ion monitoring (SIM) in accordance with Section 7.5.5 of the method.
Method protocol modified to include acidification and the surrogate compound in accordance with the MA DEP Method for the Determination of Extractable Petroleum Hydrocarbons.
Sample extraction performed by EPA Method 3546.

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample size and dilution.

GROUNDWATER ANALYTICAL

Certifications and Approvals

Groundwater Analytical maintains environmental laboratory certification in a variety of states. Copies of our current certificates may be obtained from our website:

http://www.groundwateranalytical.com/qualifications.htm

CONNECTICUT, Department of Health Services, PH-0586

Categories: Potable Water, Wastewater, Solid Waste and Soil
http://www.dph.state.ct.us/BRS/Environmental_Lab/OutStateLabList.htm

FLORIDA, Department of Health, Bureau of Laboratories, E87643

Categories: SDWA, CWA, RCRA/CERCLA
http://www.floridadep.org/labs/qa/dohforms.htm

MAINE, Department of Human Services, MA103

Categories: Drinking Water and Wastewater
http://www.state.me.us/dhs/eng/water/Compliance.htm

MASSACHUSETTS, Department of Environmental Protection, M-MA-103

Categories: Potable Water and Non-Potable Water
http://www.state.ma.us/dep/bspt/wes/files/certlabs.pdf

NEW HAMPSHIRE, Department of Environmental Services, 202703

Categories: Drinking Water and Wastewater
http://www.des.state.nh.us/asp/NHELAP/labsview.asp

NEW YORK, Department of Health, 11754

Categories: Potable Water, Non-Potable Water and Solid Waste
http://www.wadsworth.org/labcert/elap/comm.html

PENNSYLVANIA, Department of Environmental Protection, 68-665

Environmental Laboratory Registration (Non-drinking water and Non-wastewater)
http://www.dep.state.pa.us/Labs/Registered/

RHODE ISLAND, Department of Health, 54

Categories: Surface Water, Air, Wastewater, Potable Water, Sewage
http://www.healthri.org/labs/labsCT_MA.htm

U.S. Department of Agriculture, Soil Permit, S-53921

Foreign soil import permit

VERMONT, Department of Environmental Conservation, Water Supply Division

Category: Drinking Water
http://www.vermontdrinkingwater.org/wsops/labtable.PDF