

**IMMEDIATE RESPONSE ACTION  
STATUS REPORT  
LEDERLE GRADUATE RESEARCH CENTER  
UNIVERSITY OF MASSACHUSETTS  
AMHERST, MASSACHUSETTS  
RTN: 1-16269**

Prepared For:

**Brian Fitzpatrick, CHMM  
Environmental Management Services Program Head  
Environmental Health and Safety  
University of Massachusetts Amherst  
117 Draper Hall, 40 Campus Center Way  
Amherst, MA 01003-9244**

Prepared By:

**Environmental Health & Engineering, Inc.  
60 Wells Avenue  
Newton, MA 02459-3210**

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### **LIST OF ABBREVIATIONS & ACRONYMS**

ATC	ATC Associates, Inc.
CAM	Compendium of Analytical Methods
EH&E	Environmental Health & Engineering, Inc.
EPA	U.S. Environmental Protection Agency
LGRC	Lederle Graduate Research Center
MADEP	Massachusetts Department of Environmental Protection
MCP	Massachusetts Contingency Plan
PCB	polychlorinated biphenyl
ppm	parts per million
PID	photoionization detector
RTN	Release Tracking Number
TSCA	Toxic Substances Control Act
TSDF	Treatment, Storage, and Disposal Facility
University	University of Massachusetts Amherst
VOC	volatile organic compound

## 1.0 INTRODUCTION

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The objective of this report is to provide an update on the status of the Immediate Response Action for the release of polychlorinated biphenyls (PCBs) at the Lederle Graduate Research Center (LGRC) located at the University of Massachusetts (University) in Amherst, Massachusetts. This document includes discussion of activities already undertaken following Massachusetts Department of Environmental Protection (MADEP) approval and additional proposed actions. The site of the release is located on the University campus and is abutted by other University properties and privately owned residential properties.

PCBs were detected in surficial soil at the site subsequent to renovation activities that disturbed PCB-containing caulking. MADEP was verbally notified of the release on July 18, 2006, and a Release Notification Form was subsequently submitted. MADEP issued Release Tracking Number (RTN) 1-16269 for the site on July 18, 2006. Secure fencing was installed to prevent access to impacted soils and sampling of surficial soils and catch basin sediments was completed. A second notification was made under the same RTN on October 27, 2006. This notification was made subsequent to the detection of PCBs in storm water catch basins at the site. Sediment was removed from the catch basins on November 3, 2003.

### Contact Information:

Brian Fitzpatrick, CHMM  
Environmental Management Services Program Head  
Environmental Health and Safety  
University of Massachusetts  
117 Draper Hall, 40 Campus Center Way  
Amherst, MA 01003-9244  
413-545-5117

## **2.0 COMPLETED RESPONSE ACTIONS**

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The following response actions have been completed to date:

- Limited surficial soil sampling for PCBs

On July 12, 2006, nine samples were collected by ATC Associates, Inc. (ATC) and analyzed by Spectrum Analytical, Inc. Concentrations ranged from 1.1 to 41.7 parts per million (ppm). The highest concentrations were detected on the north and west sides of the low-rise building. ATC verbally notified MADEP of this release on July 18, 2006, and subsequently submitted a Release Notification Form.

- Installation of secure fencing around potentially impacted surficial soils

On August 23, 2006, a secure chain link fence was installed around the impacted soils. This fence replaced a snow fence that was originally in place to limit access to the construction area during renovations. Installation of the secure fence was completed to minimize potential exposure to the impacted soils and mitigate the threat of Imminent Hazard conditions posed by concentrations of PCBs detected in surficial soils.

- Notification of local officials of mitigation of the threat of Imminent Hazard conditions

On September 13, 2006, local officials were notified of Immediate Response Actions taken or under way to mitigate the threat of Imminent Hazard conditions at the site.

- Source material characterization (comprehensive sampling program for PCBs in caulking)

Although not technically a response action under the Massachusetts Contingency Plan (MCP), additional sampling of caulking material for PCBs was necessary for U.S. Environmental Protection Agency (EPA) compliance under Toxic Substances Control Act (TSCA). This information is important in the development of the site conceptual model and the proposed surficial soil sampling program. It is Environmental Health & Engineering, Inc. (EH&E's) understanding that caulking debris that was on the ground was collected and disposed of by a contractor to the University in accordance with TSCA

regulations and prior to the initiation of EH&E's activities at the site. Removal and disposal of PCB-containing caulking is regulated by EPA under TSCA.

- Surficial Soil Sampling—October 10 – 11, 2006

In accordance with the Immediate Response Action (IRA) Plan submitted to MADEP on September 21, 2006, shallow soils were sampled in 21 locations in unpaved areas of the site. Locations were concentrated around the low-rise and Tower A, but a limited number of samples were also collected adjacent to Towers B and C. Samples were typically segregated by depth (0 – 6 inches and 6 – 12 inches). Results of this effort are provided in Section 3.

- Catch Basin Sediment Sampling—October 11, 2006

In accordance with the IRA Plan submitted to MADEP on September 21, 2006, sediment samples were collected from 8 catch basins located around the low-rise and Tower A. Results of this effort are provided in Section 3. Additionally, on November 3, 2006, a sediment sample was obtained from one additional catch basin (CB7) for submittal for laboratory analysis. This catch basin was previously inaccessible. EH&E is still awaiting results of analysis from this sample location.

- Catch Basin Cleaning—November 3, 2006

On October 27, 2006, EH&E notified MADEP of the detection of PCBs in storm drains on behalf of the University. Verbal notification was made to David Slowick of the MADEP. Mr. Slowick verbally approved additional tasks under the existing IRA Plan for the site. These tasks included cleaning the catch basins and determining the outfall locations for water entering these catch basins. On November 3, 2006, Clean Harbors cleaned the catch basins using a vacuum truck (details are provided in Section 4). Evaluation of the storm water drainage system and identification of outfall locations is ongoing.

- Installation of Additional Fencing

Because PCBs were detected at B2 at a concentration of 33 ppm, and B2 does not lie within previously installed fencing, University officials plan to install additional fencing to eliminate public access to the location B2.

- Re-sample location B2

On November 3, 2006, EH&E obtained an additional soil sample within one foot of soil sample location B2 to confirm results of previous findings. Analytical results at this sample location, B2A, are still pending.

### **3.0 SURFICIAL SOIL AND STORM DRAIN SAMPLING PROGRAM**

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On October 10 and 11, 2006, EH&E conducted sampling of soil and storm drain sediments at the LGRC site. The collected soil and sediment samples were transported, under-chain of custody to Groundwater Analytical, Inc. (Groundwater Analytical) for PCB analysis. The sampling program focused on shallow soils (0 – 1 foot below ground surface). Soil sampling locations were selected based upon the results of the previous testing at the site, including analysis of caulking. Storm drain sediments were sampled to assess potential impacts to the storm drain systems at the LGRC site. These tasks were conducted in accordance with the IRA Plan submitted to MADEP on September 21, 2006.

#### **3.1 SOIL INVESTIGATION AND SAMPLING**

On October 10 and 11, 2006, shallow soils were sampled in 21 locations in unpaved areas of the LGRC site. Locations were concentrated around the low-rise and Tower A, but a limited number of samples were also collected adjacent to Towers B and C. Samples were typically segregated by depth (0 – 6 inches and 6 – 12 inches), but in some locations, samples were segregated based on soil stratum changes (see Table 3.1).

Figure B.2 in Appendix B shows approximate soil sampling locations from October 10 and October 11, 2006. A scaled version depicting actual sampling locations will be included in future submittals when scaled drawings are available.

##### **3.1.1 Sampling and Analysis Methodology**

Soil samples were collected using hand tools and a log of subsurface conditions to the completion depth was maintained. In addition to providing soil classification information, Table 3.1 in Section 3.1.2 below includes detailed descriptions of any anthropogenic materials present at the boring location such as caulking debris, coal or wood ash, cinders, or “clinkers,” etc. Soils were classified using a modified Burmister Soil Classification System.



On October 10 and 11, 2006, discrete soil samples for PCB analysis were collected from 0 – 6 inches below ground surface and 6 – 12 inches below ground surface at twenty-one locations. An additional four duplicate samples were collected for quality control purposes. If a stratum change was observed in the sampling, discrete samples of each stratum were collected rather than the specified depths. Table 3.1 in Section 3.1.2 indicates the depths of any strata change. On November 3, 2006, an additional soil sample was collected from one location (B-2) and submitted for PCB analysis. The results from the November 3, 2006, sampling are pending.

Sampling equipment was decontaminated between use at each boring location. Methods used were (in the following order) a Liquinox and distilled water scrub, a distilled water rinse, and air drying. Sampling devices were visually assessed for evidence of potential cross-contamination following cleaning and before each use. Decontamination fluids were collected and containerized to allow proper disposal. Analytical results for the characterization of decontamination water are pending.

As a precaution, soils (and sediments) were field screened with a photoionization detector (PID) for volatile organic compounds (VOCs). The PID was calibrated at least once daily during the field program. VOCs were not detected above ambient background levels.

After collection, the soil samples from each depth were homogenized in accordance with the established procedure. The soil samples obtained in the field were placed into laboratory prepared glassware and then transported, under chain of custody, to a qualified analytical laboratory (Groundwater Analytical, Buzzards Bay, Massachusetts) for analysis. Samples were analyzed via EPA Method 8082, and in accordance with the MADEP Compendium of Analytical Methods (CAM) requirements.

As indicated in Table 3.1 in Section 3.1.2, all shallow soil samples (0 – 6”) collected from the site were analyzed upon receipt at the laboratory. The deeper samples (typically 6” – 12”) were extracted by the laboratory following procedures outlined in EPA Method 8082. Following receipt of the analytical results from the shallow soil samples, EH&E requested that most of the deep soil samples be analyzed. Analytical results for the deeper soil borings are pending. The deep soil sample from location B-8 was not

analyzed because PCBs were not detected in the shallow sample from this location. Analytical laboratory reports are included in Appendix C.

### **3.1.2 Soil Sampling Analytical Results**

As discussed above, during the boring program, EH&E obtained soil samples for laboratory analysis of PCBs at twenty-one locations at the LGRC site. Approximate soil boring locations shown in Figure B.2 in Appendix B. Table 3.1 presents the soil sampling analytical results and provides a description of the soil at each boring location. The laboratory reports are included in Appendix C. Laboratory analytical results for the deeper soil samples collected at the site are pending.

The soil sample analytical results for PCBs were compared to MADEP Method I Soil Categories for S1 soil for PCBs (2 ppm for total PCB Aroclors).

<b>Table 3.1</b> Soil Sampling Results, Lederle Graduate Research Center, University of Massachusetts, Amherst, Massachusetts, October 10 and October 11, 2006						
<b>Sample ID</b>	<b>Location*</b>	<b>Sample Depth (inches)</b>	<b>Description</b>	<b>Comments</b>	<b>Aroclor 1254<sup>1,2</sup> (ppm)</b>	<b>Notes</b>
October 10, 2006						
80529	B1-S1	0 – 6	Dark brown fine to medium sand and fine silt. Some coarse sand. Little coarse gravel.		0.23	2C(0.17)
80530	B1-S2	6 – 12	Dark brown fine to medium sand and fine silt. Some coarse sand. Little coarse gravel.			Awaiting analytical results
80531	B2-S1	0 – 6	Dark brown fine to medium sandy silt. Some coarse sand and coarse gravel.		<b>33 (J)</b>	2C(32)
80532	B2-S2	6 – 12	Dark brown fine to medium sandy silt. Some coarse sand and coarse gravel.			Awaiting analytical results
80533	B3-S1	0 – 6	Dark brown fine to medium sandy silt. Some brown fine silt. Some fine to coarse gravel and cobbles.		BRL <0.09	
80534	B3-S2	6 – 12	Dark brown fine to medium sandy silt. Some brown fine silt. Some fine to coarse gravel and cobbles. Some coal clinker at base of boring.			Awaiting analytical results
80535	B19-S2	4 – 12	Brown medium to coarse sand. Some fine silt. Little fine sand and coarse gravel.			Awaiting analytical results
80536	B19-S1	0 – 4	Dark brown fine silt. Trace fine sand. Trace coal clink and coarse sand.		0.19	1C(0.18)

Table 3.1 Continued						
Sample ID	Location*	Sample Depth (inches)	Description	Comments	Aroclor 1254 <sup>1,2</sup> (ppm)	Notes
October 10, 2006 (continued)						
80537	B20-S1	0 – 4	Dark brown fine silt. Trace fine sand. Trace coal clink and coarse sand.	Some caulk remnants on ground surface around sample location	7.1	1C(6.5)
80538	B20-S2	4 – 12	Brown medium to coarse sand and fine gravel. Trace fine sand and silt.	Some caulk remnants on ground surface around sample location		Awaiting analytical results
October 11, 2006						
80539	B18-S1	0 – 6	Dark brown fine silt. Little coarse sand.		0.33	1C(0.32)
80540	B18-S2	6 – 12	Dark brown fine silt. Little coarse sand.			Awaiting analytical results
80541	B18-S1 Duplicate	0 – 6	Dark brown fine silt. Little coarse sand.		0.29	2C(0.28)
80542	B18-S2 duplicate	6 – 12	Dark brown fine silt. Little coarse sand.			Awaiting analytical results
80543	B4-S1	0 – 6	Dark brown fine silt and medium sand. Some coarse sand and coarse Gravel. Little coal clink.		0.47	2C(0.37)
80544	B4-S2	6 – 12	Dark brown fine silt and medium sand. Some coarse sand and coarse Gravel. Little coal clink.			Awaiting analytical results
80545	B5-S1	0 – 6	Dark brown fine sandy silt. Some fine to medium sand. Trace coarse gravel.		0.36	2C(0.35)
80546	B5-S2	6 – 12	Dark brown fine sandy silt. Some fine to medium sand. Trace coarse gravel.			Awaiting analytical results

Table 3.1 Continued						
Sample ID	Location*	Sample Depth (inches)	Description	Comments	Aroclor 1254 <sup>1,2</sup> (ppm)	Notes
October 11, 2006 (continued)						
80547	B7-S1	0 – 6	Dark brown fine silt and fine to medium sand. Some coarse sand and coarse gravel.	Bark mulch with caulk debris noted on ground surface. Caulk debris and bark mulch scraped away prior to attempting soil boring.	0.57	1C(0.56)
80548	B7-S2	6 – 12	Dark brown fine silt and fine to medium sand. Some coarse sand and coarse gravel.	Bark mulch with caulk debris noted on ground surface. Caulk debris and bark mulch scraped away prior to attempting soil boring.		Awaiting analytical results
80549	B8-S1	0 – 6	Dark brown fine clayey silt. Trace fine to medium sand.		BRL <0.09	
80550	B8-S2	6 – 12	Dark brown fine clayey silt. Some fine to coarse sand and fine to coarse Gravel. Trace cobbles.			Not analyzed
80551	B6-S1	0 – -7	Dark brown fine sand and fine silt. Some coarse sand. Trace coarse gravel.		0.93	1C(0.85)
80552	B6-S2	7 – 12	Brown coarse sand. Some fine to medium sand. Little fine silt.			Awaiting analytical results
80553	B11-S1	0 – 6	Dark brown fine silt. Some fine to medium sand. Trace coarse sand and fine gravel.		0.10	2C(0.10)
80554	B11-S2	6 – 12	Dark brown fine silt. Some fine to medium sand. Trace coarse sand and fine gravel.			Awaiting analytical results
80555	B13-S1	0 – 6	Dark brown fine to medium sandy silt.		0.58	1C(0.52)

Table 3.1 Continued						
Sample ID	Location*	Sample Depth (inches)	Description	Comments	Aroclor 1254 <sup>1,2</sup> (ppm)	Notes
October 11, 2006 (continued)						
80556	B13-S2	6 – 12	Dark brown fine to medium sandy silt. Yellow coarse to medium sand at base 13 inches bgs.			Awaiting analytical results
80557	B12-S1	0 – 8	Dark brown fine to medium sandy silt. Trace cobbles. Trace coal clink.		0.17	2C(0.15)
80558	B12-S2	8 – 12	Dark brown fine silty sand. Some medium sand. Little coarse sand. Trace large pieces of asphalt. Trace coarse gravel and cobbles.			Awaiting analytical results
80559	B14-S1	0 – 8	Dark brown medium silty sand. Some coarse sand trace fine gravel.		1.8	1C(1.8)
80560	B14-S2	8 – 12	Light brown coarse to medium sand. Some fine sand. Some fine to coarse gravel.			Awaiting analytical results
80561	B9-S1	0 – 6	Dark brown fine silt. Some fine to medium sand.		1.7	2C(1.5)
80562	B9-S2	6 – 12	Dark brown fine silt. Some fine to medium sand. little coarse gravel and Styrofoam cup.			Awaiting analytical results
80563	B10-S1	0 – 6	Dark brown fine to medium sandy silt. Trace coarse sand. Trace fine gravel.		0.10	2C(0.09)
80564	B10-S2	6 – 12	Brown medium to coarse sand. Some fine to coarse gravel. Some cobbles. Little fine silt.			Awaiting analytical results

Table 3.1 Continued						
Sample ID	Location*	Sample Depth (inches)	Description	Comments	Aroclor 1254 <sup>1,2</sup> (ppm)	Notes
October 11, 2006 (continued)						
80565	B16-S1	0 – 9	Dark brown fine silt and fine to medium sand.		0.69	1C(0.66)
80566	B16-S2	9 – 12	Brown coarse sand. Some medium sand. Some fine silt. Little fine gravel.			Awaiting analytical results
80567	B21-S1	0 – 10	Dark brown fine to medium sandy silt. Little fine sand.		BRL <0.09	
80568	B21-S1	0 – 10	Dark brown fine to medium sandy silt. Little fine sand.		BRL <0.09	
80569	B21-S2	10 – 12	Brown medium to coarse sand.			Awaiting analytical results
80570	B21-S2 duplicate	10 – 12	Brown medium to coarse sand.			Awaiting analytical results
80571	B15-S1	0 – 6	Light brown medium to coarse sand. Little fine sand. Little fine gravel.		0.50	2C(0.48)
80572	B15-S2	6 – 12	Dark brown medium sand. Some silt. Little fine gravel. Trace brick fragments and coarse gravel.			Awaiting analytical results
80573	B17-S1	0 – 8	Dark brown fine silt. Little coarse sand.		0.46	2C(0.44)
80574	B17-S2	8 – 12	Brown medium to coarse sand. Little medium to coarse gravel. Little fine silt.			Awaiting analytical results

Table 3.1 Continued

ppm parts per million  
 BRL below laboratory reporting limits  
 1C Confirmation concentration reported from first column quantification  
 2C Confirmation concentration reported from second column quantification  
 J estimated value based upon data usability assessment

**BOLD** Indicates an exceedance of the MADEP MCP Method 1, S-1 soil standards (2 ppm)

<sup>1</sup> Polychlorinated biphenyl (PCB) concentration analysis performed by Groundwater Analytical, Inc., using U.S. Environmental Protection Agency (EPA) method 8082 (GC/ECD).

<sup>2</sup> Aroclor 1016, 1221, 1232, 1242, 1248, and 1260 also tested. All results below reporting levels, unless noted.

\* See Figure B.2 for approximate soil boring locations



As noted in Table 3.1, Aroclor 1254 was the only PCB mixture detected in soil samples from the LGRC site. This Aroclor was also detected in bulk samples of caulking collected from the buildings at the site. No PCBs were detected at three of the twenty-one soil boring locations (B-3, B-8, and B-21). Aroclor 1254 concentrations detected at sixteen locations did not indicate exceedances of MADEP Method I Soil Categories for S1 soil for PCBs.

PCB concentrations detected at two locations B-2 and B-20 (33 and 7.1 ppm, respectively) exceeded MADEP S-1 soil standards. As shown in Figure B.2 (Appendix B), B-2 is located adjacent to Tower B, which has not been demonstrated to contain caulking with EPA-regulated concentrations of PCBs. In response to the elevated PCB concentration detected at this location, EH&E collected additional soil samples adjacent to B-2 on November 3, 2006. The analytical results from the additional soil sampling at B-2 are pending.

B-20, where PCB concentrations exceeded MADEP standards, is located adjacent to a section of Tower A where caulking removal was conducted and soil contamination is more likely.

### **3.3 STORM DRAIN SEDIMENT SAMPLING**

Storm drains in the vicinity of the LGRC were assessed for potential impacts from the PCB release. Sediment was sampled from nine storm drain catch basins at the LGRC site. A tenth storm drain was opened, but did not contain sediment.

Figure B.3 in Appendix B shows approximate locations of the catch basins accessed at the site. A scaled version depicting actual storm drain locations will be included in future submittals when scaled drawings are obtained.

#### **3.2.1 Sampling and Analysis Methodology**

Storm drain sediment samples were collected using a hand dredge and a log of sediment conditions was maintained. In addition to providing sediment classification information, Table 3.2 in Section 3.2.3 includes detailed descriptions of any

anthropogenic materials present in the sediment samples, such as caulking debris, coal or wood ash, cinders, or “clinkers,” etc.

Sediments were collected from nine storm drains and analyzed for PCBs via EPA Method 8082 by a qualified laboratory. Also, a duplicate sample was collected for quality control purposes. A tenth storm drain was opened, but did not contain sediment.

Sediment samples were collected from the storm drains during two separate field events. The first eight samples were obtained on October 11, 2006 for catch basins CB-1 through CB-8 and CB-10. CB-7 was inaccessible during the October 11, 2006 sampling event and CB-9, although accessible, did not contain sediment. On November 3, 2006, one sediment sample was obtained from catch basin CB-7 prior to cleaning using the same methods utilized on October 11, 2006. Results of the catch basin sample obtained from CB-7 on November 3, 2006, were not available at the time of this report.

Catch basin sampling devices were decontaminated between samples in accordance with the same decontamination methods utilized during the soil sampling program at the site. Decontamination fluids used during the storm drain sampling program were collected and containerized to allow proper disposal. Analytical results for the characterization of decontamination water are pending.

After collection, the sediment samples from each storm drain were homogenized in accordance with the established procedure. The sediment samples obtained in the field were placed into laboratory prepared glassware and then transported, under chain of custody, to a qualified analytical laboratory (Groundwater Analytical, Buzzards Bay, Massachusetts) for analysis. Samples were analyzed via EPA Method 8082, and in accordance with the MADEP CAM requirements.

### **3.2.2 Storm Drain Sediment Sampling Results**

As discussed above, EH&E collected sediment samples from eight storm drains at the LGRC site on October 11, 2006 for laboratory analysis of PCBs. An additional sediment sample was collected from catch basin CB-7 on November 3, 2006, because this storm

drain was inaccessible on October 11, 2006. Approximate catch basin sampling locations are shown in Figure B.3 in Appendix B. Table 4.2 includes the sediment sampling results and provides a description of the sample at each location. The laboratory reports are included in Appendix C.

Although not directly applicable, the catch basin sediment sampling analytical results were compared to the MADEP Method 1, S-1 standards for PCBs (2 ppm for total PCB Aroclors).

**Table 3.2** Catch Basin Sediment Sampling Results, Lederle Graduate Research Center, University of Massachusetts, Amherst, Massachusetts, October 11, 2006

Sample ID	Location*	Sample Type	Description	Comments	Aroclor 1254 <sup>1,2</sup> (ppm)	Analytical Laboratory Notes
80575	CB-1	Sediment	Detritus and sediment.	Dry basin.	0.27	2C(0.25)
80576	CB-2	Sediment	Detritus. Sediment.	Water in basin	0.33	2C(0.29)
80577	CB-3	Sediment	Anthropogenic materials, fine to coarse sand and silt. Detritus	Water in basin	0.71	2C(0.57)
80578	CB-3	Sediment (duplicate)	Anthropogenic materials, fine to coarse sand and silt. Detritus	Water in basin	0.21	2C(0.20)
80579	CB-4	Sediment	Detritus mixed with fine to coarse sand.	Water in basin	BRL <0.170	
80580	CB-5	Sediment	Detritus and sediment	Water in basin	BRL <0.270	
80581	CB-6	Sediment	Anthropogenic materials: Broken glass, garbage, detritus, bark mulch, sediment	Dry basin.	0.73	2C(0.68)
80582	CB-10	Sediment	Leaves, garbage, detritus, anthropogenic materials. Little sediment.	Water in basin. Caulk-like debris noted and removed from sample prior to collection.	<b>25 (J)</b>	1C(23)
80583	CB-8	Sediment	Fine black to grey silt. Little coarse sand. Trace small gravel.	Water in basin	BRL <0.110	
--	CB-9	No sample	No sediment in basin	Water in basin	--	--
--	CB-7	No sample	Basin was inaccessible**	--	--	--

ppm parts per million

BRL Below laboratory reporting limit

1C Confirmation concentration reported from first column quantification

2C Confirmation concentration reported from second column quantification

**BOLD** Indicates an exceedance of the MADEP MCP Method 1, S-1 soil standards (2 ppm)

J indicates estimated value based on data usability assessment

<sup>1</sup> Polychlorinated biphenyl (PCB) concentration analysis performed by Groundwater Analytical, Inc., using U.S. Environmental Protection Agency (EPA) method 8082 (GC/ECD).

<sup>2</sup> Aroclor 1016, 1221, 1232, 1242, 1248, and 1260 also tested. All results below reporting levels, unless noted.

\* See Figure B.3 for approximate sampling locations

\*\* Catch basin was sampled on November 3, 2006. Laboratory results pending.

As noted in Table 3.1, Aroclor 1254 was the only PCB mixture detected in sediment samples from catch basins and these results are consistent with sampling results of caulking and soils at the Site. No PCBs were detected at three of the nine catch basin sampling locations (CB-4, CB-5, CB-8). Aroclor 1254 concentrations detected at five additional storm drain locations did not exceed MADEP Method 1, S-1 soil standards for PCBs.

The PCB concentration detected at catch basin CB-10 (25 ppm) exceeded the Method 1, S-1 soil standards. As shown in Figure B.3 (Appendix B), CB-10 is located between Tower A and the Low Rise building in a paved area. Also, anthropogenic debris, including possible caulk remnants, was noted in this basin at the time of sampling.

In response to the elevated PCB concentration detected at CB-10 and the low levels of PCBs detected at some other locations, on October 27, 2006, EH&E verbally notified MADEP of the detection of PCBs in storm drains on behalf of UMASS. MADEP verbally approved additional tasks under the existing IRA plan for the site. These tasks included cleaning the catch basins (see Section 4) and determining the outfall locations for water entering these catch basins. Evaluation of the storm water drainage system and identification of outfall locations is ongoing.

### **3.3 DATA USABILITY AND REPRESENTATIVENESS ASSESSMENT**

Pursuant to 310 CMR 1056(2) (k), Data Usability and Representativeness, laboratory analytical data have been assessed. Data were obtained and analyzed in accordance with the requirements of the MADEP CAM. The MADEP MCP Analytical Method Report Certification Form associated with the laboratory analytical report (Appendix C) indicate affirmative responses to questions A, B, C, D and F. In some instances, question E was answered in the negative, and the negative response was addressed in a case narrative (Appendix C) as is required for Presumptive Certainty status. An evaluation of the information provided in the case narrative is provided below.

Samples 80531 and 80582 had to be diluted so no Surrogate Recoveries could be measured on them. Since the lab reported relatively high concentrations of PCBs in the samples, and all other Surrogate Recoveries were within acceptable limits, and in light of

the very good QC results throughout the rest of the report, these 2 data points have been judged to indicate the presence of PCBs. However, due to the lack of Surrogate Recovery data, these two results are interpreted as approximate. Accordingly, the results have been presented with a "J" after them on Tables 3.1 and 3.2, which indicates the results are considered approximate.

Site history, the current conceptual release model, and Site observations are consistent with the nature, extent, distribution, and concentrations of contamination identified in the aforementioned analytical data. The sampling procedures for collection of soil and sediment samples were deemed appropriate procedures for collection and preservation of the representative samples, and the sampling methodology utilized during collection of samples was consistent. Data points were selected to provide representative spatial coverage of the Site. The analytical methods in use at the time met appropriate QA/QC protocols and the laboratory followed the appropriate standard operating procedures. The reported laboratory detection limits were acceptable and the data were judged to be valid. The two samples discussed above should only be used as an approximation. All remaining data can be used for their intended purpose and are judged sufficient to render conclusions on current and future health risks for the receptors identified and to assess risks to public welfare, safety, and the environment.

As the conceptual model develops and additional data are collected, data usability and representativeness assessments will continue to be conducted.

### **3.4 SCHEDULE**

EH&E anticipates receipt of laboratory data for the deeper soil strata and from the additional soil samples collected at B-2 during Mid-November of 2006. Evaluation of data including reassessment of Imminent Hazard conditions and additional field investigation, if warranted, will be completed subsequent to receipt of data from the laboratory.

## 4.0 CATCH BASIN CLEANING

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EH&E collected samples from eight storm drain catch basins on October 11, 2006. PCBs were detected at six locations; the maximum concentration of PCBs detected in catch basin sediment was 25 ppm. Detailed discussion of this sampling effort and the analytical results is provided in Section 3 of this report.

On October 27, 2006, EH&E notified MADEP of the detection of PCBs in storm drains on behalf of the University. Verbal notification was made to David Slowick of the MADEP. Mr. Slowick verbally approved additional tasks under the existing IRA Plan for the site. These tasks included cleaning the catch basins and determining the outfall locations for water entering these catch basins. On November 3, 2006, Clean Harbors cleaned ten storm water catch basins using a vacuum truck. Evaluation of the storm water drainage system and identification of outfall locations is ongoing.

With the exception of Catch Basin CB-1, all sediment was removed from the bottom of each basin. All catch basins were brick-lined tops with irregular poured reinforced concrete bottoms. Table 4.1 shows the approximate depth of sediment and conditions discovered in each of the catch basins on November 3, 2006.

<b>Table 4.1</b> Catch Basin Cleaning Summary. Catch Basins cleaned by Clean Harbors on November 3, 2006		
<b>Catch Basin ID</b>	<b>Approximate Diameter (feet)</b>	<b>Approximate Depth of sediment (feet)</b>
CB-1	3.25	>1.5 feet
CB-2	3.25	2.0
CB-3	3.25	1.0
CB-4	3.25	1.0
CB-5	3.25	0.5
CB-6	3.25	0.25
CB-7	3.25	2.0
CB-8	3.25	1.5
CB-9	3.25	1.5
CB-10	3.25	3.0

The total depth of sediment in catch basin CB-1 was greater than the 1.5 feet of material that was removed. Unfortunately, the total depth below ground surface to the top of the remaining sediment was greater than eight feet. Therefore, due to that total depth and

transport weight limits, Clean Harbors was unable to remove the remaining sediment from catch basin CB-1. However, up to 1.5 feet of sediment along with water was removed from that catch basin prior to completion of the field program on November 3, 2006. Alternate methods for removing the remaining sediment are under evaluation.

Additional evaluation is ongoing to determine the layout of the storm water drainage system and outfall locations.



## **5.0 MANAGEMENT OF REMEDIATION WASTE**

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Approximately four (4) gallons of wastewater were generated during the soil and sediment sampling program on October 10 – 11, 2006. The wastewater was containerized in a five-gallon container and stored at a main hazardous water accumulation area at the University. A sample of the wastewater was collected and sent, under chain of custody, to Groundwater Analytical for PCB analysis via EPA Method 8082. Following the receipt of laboratory results, the wastewater will be disposed of appropriately.

Approximately 10,000 kilograms of water and mixed sediment were removed from the ten catch basins on November 3, 2006, and transported by Clean Harbors to the Clean Harbors Treatment, Storage, and Disposal Facility (TSDF) in Braintree, Massachusetts, under manifest. Ultimate disposal will likely be at Deer Park, Texas.

## **6.0 SITE CONCEPTUAL MODEL**

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EH&E conducted additional assessment to further develop the site conceptual model for the release of PCBs to soil and storm water catch basins. The LGRC is a large research complex, which includes three 17-story towers (A, B, C) and an attached 3-story low-rise building (Figure B.1, Appendix B).

### **6.1 SOURCE MATERIALS AND RELEASE MECHANISMS**

It is EH&E's understanding that PCB-containing caulking, which seals large exterior building panels, was removed prior to testing that detected PCBs in the caulking. Therefore, during these activities, which included mechanical removal and in localized areas high pressure washing with water, procedures were not implemented to contain the PCBs. High pressure washing reportedly occurred on the east side of Tower A (including the elevator lobby) and the north and west sides of the Low Rise. Mechanical removal was implemented on all of Tower A and the Low Rise. Therefore, the renovation activities may have resulted in release of PCBs to soils and storm drains.

In addition, during the history of the building, PCBs from caulking may have leached from the caulking or degraded caulking may have crumbled and fallen to the soils below.

Analysis of caulking materials indicates that PCB concentrations in the caulking are substantially higher in Tower A and the low-rise building. Building remediation is regulated under TSCA by the EPA, and is not directly regulated under the MCP. However, understanding the distribution of PCBs in building materials is essential to evaluation of prior and potential releases to the environment that are regulated by MADEP under the MCP.

### **6.2 IMPACTS TO ENVIRONMENTAL MEDIA**

A limited surficial soil sampling program was conducted prior to EH&E's involvement at the site by ATC. This program included nine samples around the low-rise building and detected concentrations as high as 41 ppm. The highest concentrations were observed on the north and west sides of the low-rise building where power-washing techniques were reportedly used to remove residual caulking, subsequent to mechanical removal.

ATC verbally notified MADEP of the release on July 18, 2006, and subsequently submitted a Release Notification Form. MADEP issued RTN 1-16269 for the site on July 18, 2006.

Because concentrations in surficial soil exceeded 10 ppm, a threat of Imminent Hazard conditions existed on the site, which is a school and is within 500 feet of residences. The threat of Imminent Hazard conditions was mitigated by the installation of a locking chain link fence on August 23, 2006.

EH&E conducted additional testing of surficial soils on October 10 – 11, 2006, which confirmed the presence of PCBs in surficial soils. The highest concentration detected by EH&E was 33 ppm. This location is outside of the previously installed fencing; the University plans to install additional fencing to prevent access to this sample location. Detailed discussion of this sampling effort and the analytical results is provided in Section 3 of this report.

Site activities may also have resulted in a release of PCBs to storm drains. EH&E collected samples from eight storm drain catch basins on October 11, 2006. PCBs were detected at six locations; the maximum concentration of PCBs detected in catch basin sediment was 25 ppm. Detailed discussion of this sampling effort and the analytical results are provided in Section 3 of this report. On November 3, 2006, Clean Harbors cleaned the catch basins using a vacuum truck. Wastes were transported by Clean Harbors to the Clean Harbors TSD in Braintree, Massachusetts, under manifest. Ultimate disposal will likely be at Deer Island, Texas. Evaluation of the storm water drainage system and identification of outfall locations is ongoing.

### **6.3 MIGRATION POTENTIAL AND POTENTIAL RECEPTORS**

Potential human receptors at the site include students and employees at the University, contractors at the site, and local residents. Surface water may have been impacted when PCBs entered storm drains. Additional work is underway to evaluate the construction of the stormwater drainage system, the flow patterns, and the outfall location(s).

Aroclors are persistent in the environment and typically bind to soil and sediment. Therefore, they are not likely to travel far in soil unless disturbed in fugitive dust or through surface run-off. Because they are minimally soluble, they are less likely to leach to groundwater. PCBs could be transported further as suspended solids in a storm water system.

The higher concentration detected at CB-10 is consistent with the site conceptual model. This catch basin is located near one area where high pressure washing was employed, and it is also located in a paved area which would enhance runoff. Additionally, anthropogenic material which appeared to be small pieces of caulking were observed in this catch basin.

## **7.0 ANY OTHER INFORMATION REQUIRED BY MADEP**

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The MADEP has issued no other orders, directives, or other correspondence and has not issued any request for information relative to this RTN other than the Notice Of Responsibility (dated July 18, 2006) and verbal approvals to conduct the Immediate Response Action.

## **8.0 LICENSED SITE PROFESSIONAL OPINION**

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The Licensed Site Professional Opinion is provided on the original IRA Transmittal Form BWSC 105 that is provided with this IRA Status Report. A copy of the BWSC 105 is also included in Appendix D.

**APPENDIX A**  
**LIMITATIONS**

## LIMITATIONS

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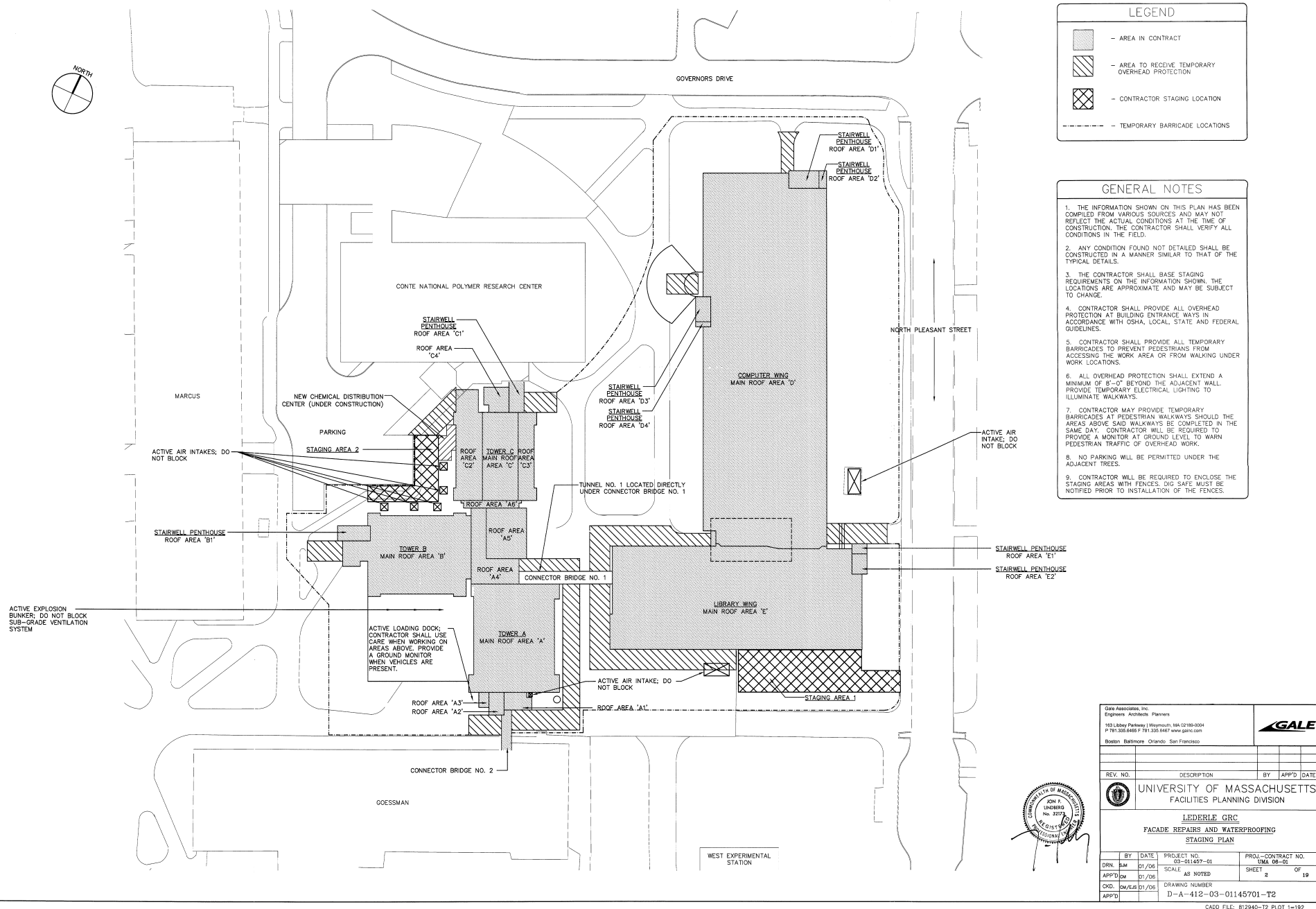
1. Environmental Health & Engineering, Inc.'s (EH&E) indoor air assessment described in the attached report number 14680, *Immediate Response Action Status Report, Lederle Graduate Research Center, University of Massachusetts, Amherst, Massachusetts, RTN: 1-16269* (hereafter "the Report"), was performed in accordance with generally accepted practices employed by other consultants undertaking similar studies at the same time and in the same geographical area; and EH&E observed that degree of care and skill generally exercised by such other consultants under similar circumstances and conditions. The observations described in the Report were made under the conditions stated therein. The conclusions presented in the Report were based solely upon the services described therein, and not on scientific tasks or procedures beyond the scope of described services.
2. Observations were made of the site as indicated within the Report. Where access to portions of the site was unavailable or limited, EH&E renders no opinion as to the presence of chemical residues, or to the presence of indirect evidence relating to chemical residues in that portion of the site.
3. The observations and recommendations contained in the Report are based on limited environmental sampling and visual observation, and were arrived at in accordance with generally-accepted standards of industrial hygiene practice. The sampling and observations conducted at the site were limited in scope and, therefore, cannot be considered representative of areas not sampled or observed.
4. When an outside laboratory conducted sample analyses, EH&E relied upon the data provided and did not conduct an independent evaluation of the reliability of these data.
5. The purpose of the Report was to assess the characteristics of the subject site as stated within the Report. No specific attempt was made to verify compliance by any party with all federal, state, or local laws and regulations.

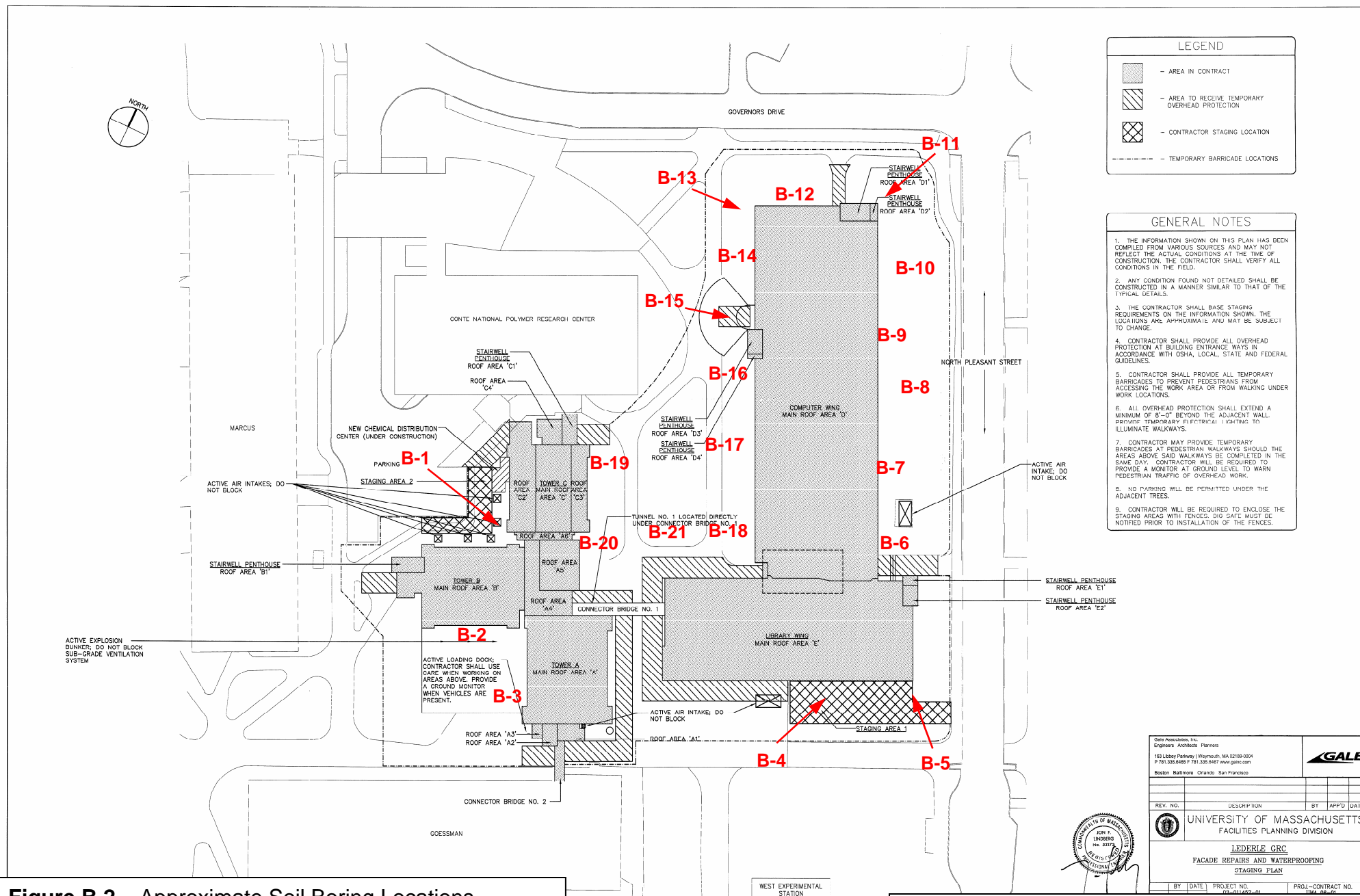


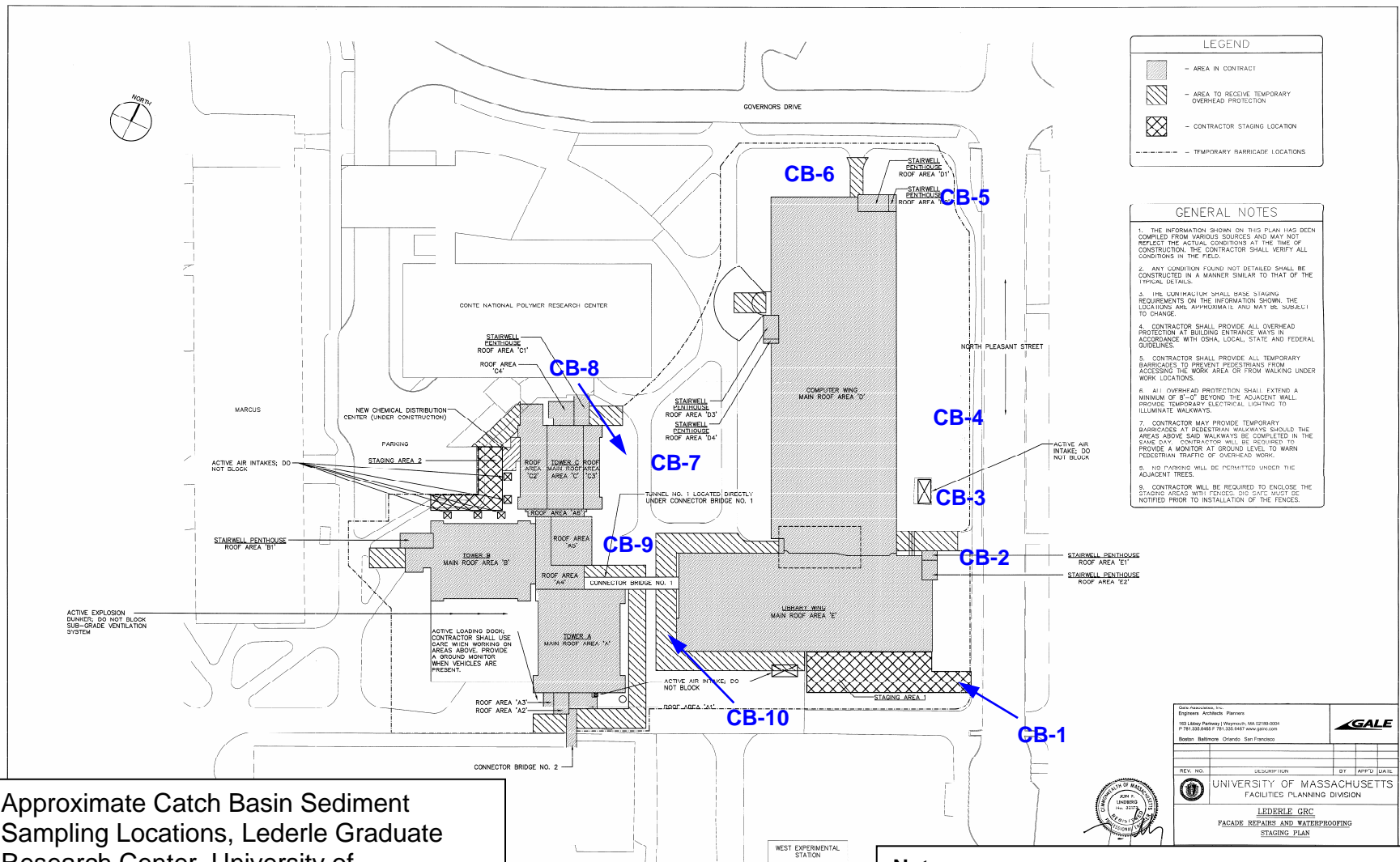
**APPENDIX B**

**FIGURES**

**Figure B.1 Site Plan**







**APPENDIX C**  
**LABORATORY REPORTS**

October 26, 2006

Mr. Max Chang  
Environmental Health & Engineering, Inc.  
60 Wells Avenue  
Newton, MA 02159-3210

## **LABORATORY REPORT**

Project: **14680**  
Lab ID: **99937**  
Received: **10-12-06**

Dear Max:

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

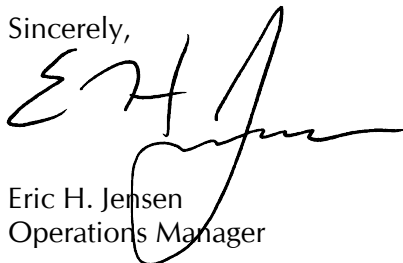
This letter authorizes the release of the analytical results, and should be considered a part of this report. This report contains a sample receipt report detailing the samples received, a project narrative indicating project changes and non-conformances, a quality control report, and a statement of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

## Sample Receipt Report

Project: **14680** Delivery: **GWA Courier** Temperature: **2.7°C**  
 Client: **Environmental Health & Engineering, Inc.** Airbill: **n/a** Chain of Custody: **Present**  
 Lab ID: **99937** Lab Receipt: **10-12-06** Custody Seal(s): **n/a**

Lab ID	Field ID		Matrix	Sampled	Method				Notes
99937-1	80529		Soil	10/10/06 16:00	EPA 8082 PCBs				
Con ID	Container	Vendor	QC Lot	Preserv	QC Lot	Prep	Ship		
C878764	250 mL Glass	Proline	BX23576	None	n/a	n/a	n/a		
Lab ID	Field ID		Matrix	Sampled	Method				Notes
99937-2	80531		Soil	10/10/06 16:20	EPA 8082 PCBs				
Con ID	Container	Vendor	QC Lot	Preserv	QC Lot	Prep	Ship		
C878766	250 mL Glass	Proline	BX23576	None	n/a	n/a	n/a		
Lab ID	Field ID		Matrix	Sampled	Method				Notes
99937-3	80533		Soil	10/10/06 16:30	EPA 8082 PCBs				
Con ID	Container	Vendor	QC Lot	Preserv	QC Lot	Prep	Ship		
C878768	250 mL Glass	Proline	BX23576	None	n/a	n/a	n/a		
Lab ID	Field ID		Matrix	Sampled	Method				Notes
99937-4	80535		Soil	10/10/06 17:26	EPA 8082 PCBs				
Con ID	Container	Vendor	QC Lot	Preserv	QC Lot	Prep	Ship		
C878773	250 mL Glass	Proline	BX23576	None	n/a	n/a	n/a		
Lab ID	Field ID		Matrix	Sampled	Method				Notes
99937-5	80537		Soil	10/10/06 17:00	EPA 8082 PCBs				
Con ID	Container	Vendor	QC Lot	Preserv	QC Lot	Prep	Ship		
C878770	250 mL Glass	Proline	BX23576	None	n/a	n/a	n/a		
Lab ID	Field ID		Matrix	Sampled	Method				Notes
99937-6	80539		Soil	10/11/06 7:50	EPA 8082 PCBs				
Con ID	Container	Vendor	QC Lot	Preserv	QC Lot	Prep	Ship		
C878775	250 mL Glass	Proline	BX23576	None	n/a	n/a	n/a		
Lab ID	Field ID		Matrix	Sampled	Method				Notes
99937-7	80541		Soil	10/11/06 7:50	EPA 8082 PCBs				
Con ID	Container	Vendor	QC Lot	Preserv	QC Lot	Prep	Ship		
C878812	250 mL Glass	Proline	BX23562	None	n/a	n/a	n/a		
Lab ID	Field ID		Matrix	Sampled	Method				Notes
99937-8	80543		Soil	10/11/06 14:21	EPA 8082 PCBs				
Con ID	Container	Vendor	QC Lot	Preserv	QC Lot	Prep	Ship		
C878656	250 mL Glass	Proline	BX23574	None	n/a	n/a	n/a		
Lab ID	Field ID		Matrix	Sampled	Method				Notes
99937-9	80545		Soil	10/11/06 14:06	EPA 8082 PCBs				
Con ID	Container	Vendor	QC Lot	Preserv	QC Lot	Prep	Ship		
C878680	250 mL Glass	Proline	BX23567	None	n/a	n/a	n/a		
Lab ID	Field ID		Matrix	Sampled	Method				Notes
99937-10	80547		Soil	10/11/06 13:45	EPA 8082 PCBs				
Con ID	Container	Vendor	QC Lot	Preserv	QC Lot	Prep	Ship		
C878687	250 mL Glass	Proline	BX23567	None	n/a	n/a	n/a		

## Sample Receipt Report (Continued)

Project: **14680** Delivery: **GWA Courier** Temperature: **2.7°C**  
 Client: **Environmental Health & Engineering, Inc.** Airbill: **n/a** Chain of Custody: **Present**  
 Lab ID: **99937** Lab Receipt: **10-12-06** Custody Seal(s): **n/a**

Lab ID	Field ID		Matrix	Sampled	Method				Notes
99937-11	80549		Soil	10/11/06 13:36	EPA 8082 PCBs				
Con ID	Container	Vendor	QC Lot	Preserv	QC Lot	Prep	Ship		
C878658	250 mL Glass	Proline	BX23574	None	n/a	n/a	n/a		
Lab ID	Field ID		Matrix	Sampled	Method				Notes
99937-12	80551		Soil	10/11/06 13:54	EPA 8082 PCBs				
Con ID	Container	Vendor	QC Lot	Preserv	QC Lot	Prep	Ship		
C878686	250 mL Glass	Proline	BX23567	None	n/a	n/a	n/a		
Lab ID	Field ID		Matrix	Sampled	Method				Notes
99937-13	80553		Soil	10/11/06 12:54	EPA 8082 PCBs				
Con ID	Container	Vendor	QC Lot	Preserv	QC Lot	Prep	Ship		
C878665	250 mL Glass	Proline	BX23574	None	n/a	n/a	n/a		
Lab ID	Field ID		Matrix	Sampled	Method				Notes
99937-14	80555		Soil	10/11/06 12:35	EPA 8082 PCBs				
Con ID	Container	Vendor	QC Lot	Preserv	QC Lot	Prep	Ship		
C878696	250 mL Glass	Proline	BX23568	None	n/a	n/a	n/a		
Lab ID	Field ID		Matrix	Sampled	Method				Notes
99937-15	80557		Soil	10/11/06 12:47	EPA 8082 PCBs				
Con ID	Container	Vendor	QC Lot	Preserv	QC Lot	Prep	Ship		
C878659	250 mL Glass	Proline	BX23574	None	n/a	n/a	n/a		
Lab ID	Field ID		Matrix	Sampled	Method				Notes
99937-16	80559		Soil	10/11/06 12:18	EPA 8082 PCBs				
Con ID	Container	Vendor	QC Lot	Preserv	QC Lot	Prep	Ship		
C878703	250 mL Glass	Proline	BX23568	None	n/a	n/a	n/a		
Lab ID	Field ID		Matrix	Sampled	Method				Notes
99937-17	80561		Soil	10/11/06 13:21	EPA 8082 PCBs				
Con ID	Container	Vendor	QC Lot	Preserv	QC Lot	Prep	Ship		
C878661	250 mL Glass	Proline	BX23574	None	n/a	n/a	n/a		
Lab ID	Field ID		Matrix	Sampled	Method				Notes
99937-18	80563		Soil	10/11/06 12:58	EPA 8082 PCBs				
Con ID	Container	Vendor	QC Lot	Preserv	QC Lot	Prep	Ship		
C878666	250 mL Glass	Proline	BX23574	None	n/a	n/a	n/a		
Lab ID	Field ID		Matrix	Sampled	Method				Notes
99937-19	80565		Soil	10/11/06 10:42	EPA 8082 PCBs				
Con ID	Container	Vendor	QC Lot	Preserv	QC Lot	Prep	Ship		
C878699	250 mL Glass	Proline	BX23568	None	n/a	n/a	n/a		
Lab ID	Field ID		Matrix	Sampled	Method				Notes
99937-20	80567		Soil	10/11/06 10:56	EPA 8082 PCBs				
Con ID	Container	Vendor	QC Lot	Preserv	QC Lot	Prep	Ship		
C878701	250 mL Glass	Proline	BX23568	None	n/a	n/a	n/a		



### Sample Receipt Report (Continued)

Project: **14680**      Delivery: **GWA Courier**      Temperature: **2.7°C**  
 Client: **Environmental Health & Engineering, Inc.**      Airbill: **n/a**      Chain of Custody: **Present**  
 Lab ID: **99937**      Lab Receipt: **10-12-06**      Custody Seal(s): **n/a**

Lab ID	Field ID		Matrix	Sampled	Method				Notes
99937-21	80568		Soil	10/11/06 10:56	EPA 8082 PCBs				
Con ID	Container	Vendor	QC Lot	Preserv	QC Lot	Prep	Ship		
C878698	250 mL Glass	Proline	BX23568	None	n/a	n/a	n/a		
Lab ID	Field ID		Matrix	Sampled	Method				Notes
99937-22	80571		Soil	10/11/06 11:10	EPA 8082 PCBs				
Con ID	Container	Vendor	QC Lot	Preserv	QC Lot	Prep	Ship		
C878694	250 mL Glass	Proline	BX23568	None	n/a	n/a	n/a		
Lab ID	Field ID		Matrix	Sampled	Method				Notes
99937-23	80573		Soil	10/11/06 8:09	EPA 8082 PCBs				
Con ID	Container	Vendor	QC Lot	Preserv	QC Lot	Prep	Ship		
C878813	250 mL Glass	Proline	BX23562	None	n/a	n/a	n/a		
Lab ID	Field ID		Matrix	Sampled	Method				Notes
99937-24	80575		Soil	10/11/06 9:52	EPA 8082 PCBs				
Con ID	Container	Vendor	QC Lot	Preserv	QC Lot	Prep	Ship		
C878822	250 mL Glass	Proline	BX23562	None	n/a	n/a	n/a		
Lab ID	Field ID		Matrix	Sampled	Method				Notes
99937-25	80576		Soil	10/11/06 9:37	EPA 8082 PCBs				
Con ID	Container	Vendor	QC Lot	Preserv	QC Lot	Prep	Ship		
C878821	250 mL Glass	Proline	BX23562	None	n/a	n/a	n/a		
Lab ID	Field ID		Matrix	Sampled	Method				Notes
99937-26	80577		Soil	10/11/06 9:29	EPA 8082 PCBs				
Con ID	Container	Vendor	QC Lot	Preserv	QC Lot	Prep	Ship		
C878819	250 mL Glass	Proline	BX23562	None	n/a	n/a	n/a		
Lab ID	Field ID		Matrix	Sampled	Method				Notes
99937-27	80578		Soil	10/11/06 9:29	EPA 8082 PCBs				
Con ID	Container	Vendor	QC Lot	Preserv	QC Lot	Prep	Ship		
C878685	250 mL Glass	Proline	BX23567	None	n/a	n/a	n/a		
Lab ID	Field ID		Matrix	Sampled	Method				Notes
99937-28	80579		Soil	10/11/06 9:13	EPA 8082 PCBs				
Con ID	Container	Vendor	QC Lot	Preserv	QC Lot	Prep	Ship		
C878818	250 mL Glass	Proline	BX23562	None	n/a	n/a	n/a		
Lab ID	Field ID		Matrix	Sampled	Method				Notes
99937-29	80580		Soil	10/11/06 10:11	EPA 8082 PCBs				
Con ID	Container	Vendor	QC Lot	Preserv	QC Lot	Prep	Ship		
C878820	250 mL Glass	Proline	BX23562	None	n/a	n/a	n/a		
Lab ID	Field ID		Matrix	Sampled	Method				Notes
99937-30	80581		Soil	10/11/06 9:05	EPA 8082 PCBs				
Con ID	Container	Vendor	QC Lot	Preserv	QC Lot	Prep	Ship		
C878823	250 mL Glass	Proline	BX23562	None	n/a	n/a	n/a		

## Sample Receipt Report (Continued)

Project: **14680**      Delivery: **GWA Courier**      Temperature: **2.7°C**  
 Client: **Environmental Health & Engineering, Inc.**      Airbill: **n/a**      Chain of Custody: **Present**  
 Lab ID: **99937**      Lab Receipt: **10-12-06**      Custody Seal(s): **n/a**

Lab ID	Field ID		Matrix	Sampled	Method				Notes
99937-31	80582		Soil	10/11/06 8:41	EPA 8082 PCBs				
Con ID	Container	Vendor	QC Lot	Preserv	QC Lot	Prep	Ship		
C878817	250 mL Glass	Proline	BX23562	None	n/a	n/a	n/a		

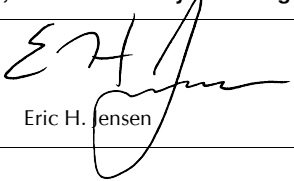
Lab ID	Field ID		Matrix	Sampled	Method				Notes
99937-32	80583		Soil	10/11/06 8:26	EPA 8082 PCBs				
Con ID	Container	Vendor	QC Lot	Preserv	QC Lot	Prep	Ship		
C878816	250 mL Glass	Proline	BX23562	None	n/a	n/a	n/a		

Lab ID	Field ID		Matrix	Sampled	Method				Notes
99937-33	80584		Aqueous	10/11/06 15:10	EPA 8082 PCBs				
Con ID	Container	Vendor	QC Lot	Preserv	QC Lot	Prep	Ship		
C498791	1 L Amber Glass	Proline	BX12327	None	n/a	n/a	n/a		

## Data Certification

Project: **14680**  
Client: **Environmental Health & Engineering, Inc.**

Lab ID: **99937**  
Received: **10-12-06 18:00**

MA DEP Compendium of Analytical Methods					
Project Location: <b>n/a</b>		MA DEP RTN: <b>n/a</b>			
This Form provides certifications for the following data set: EPA 8082: 99937-01through -32					
Sample Matrices:		Groundwater ( )	Soil/Sediment (X)	Drinking Water ( )	Other ( )
MCP SW-846 Methods Used	8260B ( )	8151A ( )	8330 ( )	6010B ( )	7470A/1A ( )
	8270C ( )	8081A ( )	VPH ( )	6020 ( )	9012A <sup>2</sup> ( )
As specified in MA DEP Compendium of Analytical Methods. (check all that apply)	8082 (X)	8021B ( )	EPH ( )	7000 S <sup>3</sup> ( )	Other ( )
	1. List Release Tracking Number (RTN), if known.				
	2. SW-846 Method 9012A (Equivalent to 9014) or MA DEP Physiologically Available Cyanide (PAC) Method				
	3. S - SW-846 Methods 7000 Series. List individual method and analyte.				
An affirmative response to questions A, B, C and D is required for "Presumptive Certainty" status.					
A.	Were all samples received by the laboratory in a condition consistent with that described on the Chain-of-Custody documentation for the data set?				Yes
B.	Were all QA/QC procedures required for the specified analytical method(s) included in this report followed, including the requirement to note and discuss in a narrative QC data that did not meet appropriate performance standards or guidelines?				Yes
C.	Does the analytical data included in this report meet all the requirements for "Presumptive Certainty," as described in Section 2.0 of the MA DEP document CAM VII A, <i>Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data</i> ?				Yes
D.	<u>VPH and EPH methods only:</u> Was the VPH or EPH method run without significant modifications, as specified in Section 11.3?				n/a
A response to questions E and F below is required for "Presumptive Certainty" status.					
E.	Were all QC performance standards and recommendations for the specified methods achieved?				No
F.	Were results for all analyte-list compounds/elements for the specified method(s) reported?				Yes
All No answers are addressed in the attached Project Narrative.					
I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this analytical report is, to the best of my knowledge and belief, accurate and complete.					
Signature: 		Position: Operations Manager			
Printed Name: Eric H. Jensen		Date: 10-26-06			

## EPA Method 8082 Polychlorinated Biphenyls (PCBs) by GC/ECD

Field ID: **80529**  
Project: **14680**  
Client: **Environmental Health & Engineering, Inc.**  
  
Laboratory ID: **99937-01**  
Sampled: **10-10-06 16:00**  
Received: **10-12-06 18:00**  
Extracted: **10-15-06 09:30**  
Cleaned Up: **10-17-06 07:00**  
Analyzed: **10-17-06 18:17**  
Analyst: **CRL**

Matrix: **Soil**  
Container: **250 mL Glass**  
Preservation: **Cool**  
  
QC Batch ID: **PB-2619-P**  
Instrument ID: **GC-13 Agilent 6890**  
Sample Weight: **16 g**  
Final Volume: **1 mL**  
Percent Solids: **90**  
Dilution Factor: **1**

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
12674-11-2	Aroclor 1016	BRL		ug/Kg	85
11104-28-2	Aroclor 1221	BRL		ug/Kg	85
11141-16-5	Aroclor 1232	BRL		ug/Kg	85
53469-21-9	Aroclor 1242	BRL		ug/Kg	85
12672-29-6	Aroclor 1248	BRL		ug/Kg	85
11097-69-1	Aroclor 1254	<b>230</b>	2C (170)*	ug/Kg	85
11096-82-5	Aroclor 1260	BRL		ug/Kg	85
37324-23-5	Aroclor 1262 †	BRL		ug/Kg	85
11100-14-4	Aroclor 1268 †	BRL		ug/Kg	85

QC Surrogate Compound	Spiked	Measured	Recovery	QC Limits
First	Tetrachloro- <i>m</i> -xylene	14	13	<b>96</b> %
Column	Decachlorobiphenyl	14	15	<b>107</b> %
Second	Tetrachloro- <i>m</i> -xylene	14	13	<b>94</b> %
Column	Decachlorobiphenyl	14	12	<b>82</b> %

**Method Reference:** Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).  
Sample extraction performed by EPA Method 3545. Cleanup performed by EPA Method 3660B and EPA Method 3665A.  
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.  
† Non-target analyte. Result is based on a single mid-range calibration standard.  
\* Confirmatory column quantification.  
2C Concentration reported from second column.

**EPA Method 8082  
Polychlorinated Biphenyls (PCBs) by GC/ECD**

Field ID: **80531**  
 Project: **14680**  
 Client: **Environmental Health & Engineering, Inc.**  
 Laboratory ID: **99937-02**  
 Sampled: **10-10-06 16:20**  
 Received: **10-12-06 18:00**  
 Extracted: **10-15-06 09:30**  
 Cleaned Up: **10-17-06 07:00**  
 Analyzed: **10-18-06 12:54**  
 Analyst: **CRL**

Matrix: **Soil**  
 Container: **250 mL Glass**  
 Preservation: **Cool**  
 QC Batch ID: **PB-2619-P**  
 Instrument ID: **GC-13 Agilent 6890**  
 Sample Weight: **15 g**  
 Final Volume: **1 mL**  
 Percent Solids: **89**  
 Dilution Factor: **50**

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
12674-11-2	Aroclor 1016	BRL		ug/Kg	4,400
11104-28-2	Aroclor 1221	BRL		ug/Kg	4,400
11141-16-5	Aroclor 1232	BRL		ug/Kg	4,400
53469-21-9	Aroclor 1242	BRL		ug/Kg	4,400
12672-29-6	Aroclor 1248	BRL		ug/Kg	4,400
11097-69-1	Aroclor 1254	33,000	2C (32,000)	ug/Kg	4,400
11096-82-5	Aroclor 1260	BRL		ug/Kg	4,400
37324-23-5	Aroclor 1262 †	BRL		ug/Kg	4,400
11100-14-4	Aroclor 1268 †	BRL		ug/Kg	4,400

QC Surrogate Compound		Spiked	Measured	Recovery	QC Limits
First	Tetrachloro- <i>m</i> -xylene	15	na	d	30 - 150 %
Column	Decachlorobiphenyl	15	na	d	30 - 150 %
Second	Tetrachloro- <i>m</i> -xylene	15	na	d	30 - 150 %
Column	Decachlorobiphenyl	15	na	d	30 - 150 %

**Method Reference:** Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).  
 Sample extraction performed by EPA Method 3545. Cleanup performed by EPA Method 3660B and EPA Method 3665A.  
 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.  
 † Non-target analyte. Result is based on a single mid-range calibration standard.  
 \* Confirmatory column quantification.  
 2C Concentration reported from second column.  
 d Surrogate recovery not measurable due to required sample dilution.

**EPA Method 8082  
Polychlorinated Biphenyls (PCBs) by GC/ECD**

Field ID: **80533**  
 Project: **14680**  
 Client: **Environmental Health & Engineering, Inc.**  
 Laboratory ID: **99937-03**  
 Sampled: **10-10-06 16:30**  
 Received: **10-12-06 18:00**  
 Extracted: **10-15-06 09:30**  
 Cleaned Up: **10-17-06 07:00**  
 Analyzed: **10-17-06 19:05**  
 Analyst: **CRL**

Matrix: **Soil**  
 Container: **250 mL Glass**  
 Preservation: **Cool**  
 QC Batch ID: **PB-2619-P**  
 Instrument ID: **GC-13 Agilent 6890**  
 Sample Weight: **15 g**  
 Final Volume: **1 mL**  
 Percent Solids: **84**  
 Dilution Factor: **1**

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
12674-11-2	Aroclor 1016	BRL		ug/Kg	94
11104-28-2	Aroclor 1221	BRL		ug/Kg	94
11141-16-5	Aroclor 1232	BRL		ug/Kg	94
53469-21-9	Aroclor 1242	BRL		ug/Kg	94
12672-29-6	Aroclor 1248	BRL		ug/Kg	94
11097-69-1	Aroclor 1254	BRL		ug/Kg	94
11096-82-5	Aroclor 1260	BRL		ug/Kg	94
37324-23-5	Aroclor 1262 †	BRL		ug/Kg	94
11100-14-4	Aroclor 1268 †	BRL		ug/Kg	94

QC Surrogate Compound		Spiked	Measured	Recovery	QC Limits
First Column	Tetrachloro- <i>m</i> -xylene	16	13	<b>82</b> %	30 - 150 %
	Decachlorobiphenyl	16	17	<b>107</b> %	30 - 150 %
Second Column	Tetrachloro- <i>m</i> -xylene	16	13	<b>80</b> %	30 - 150 %
	Decachlorobiphenyl	16	13	<b>81</b> %	30 - 150 %

**Method Reference:** Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).  
 Sample extraction performed by EPA Method 3545. Cleanup performed by EPA Method 3660B and EPA Method 3665A.  
 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.  
 † Non-target analyte. Result is based on a single mid-range calibration standard.

**EPA Method 8082  
Polychlorinated Biphenyls (PCBs) by GC/ECD**

Field ID: **80536**  
 Project: **14680**  
 Client: **Environmental Health & Engineering, Inc.**  
 Laboratory ID: **99937-04**  
 Sampled: **10-10-06 17:26**  
 Received: **10-12-06 18:00**  
 Extracted: **10-17-06 14:00**  
 Cleaned Up: **10-23-06 07:00**  
 Analyzed: **10-23-06 15:22**  
 Analyst: **CRL**

Matrix: **Soil**  
 Container: **250 mL Glass**  
 Preservation: **Cool**  
 QC Batch ID: **PB-2621-P**  
 Instrument ID: **GC-13 Agilent 6890**  
 Sample Weight: **16 g**  
 Final Volume: **1 mL**  
 Percent Solids: **92**  
 Dilution Factor: **1**

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
12674-11-2	Aroclor 1016	BRL		ug/Kg	84
11104-28-2	Aroclor 1221	BRL		ug/Kg	84
11141-16-5	Aroclor 1232	BRL		ug/Kg	84
53469-21-9	Aroclor 1242	BRL		ug/Kg	84
12672-29-6	Aroclor 1248	BRL		ug/Kg	84
11097-69-1	Aroclor 1254	<b>190</b>	1C (180)*	ug/Kg	84
11096-82-5	Aroclor 1260	BRL		ug/Kg	84
37324-23-5	Aroclor 1262 †	BRL		ug/Kg	84
11100-14-4	Aroclor 1268 †	BRL		ug/Kg	84

QC Surrogate Compound	Spiked	Measured	Recovery	QC Limits
First	Tetrachloro- <i>m</i> -xylene	14	14	<b>99</b> %
Column	Decachlorobiphenyl	14	15	<b>110</b> %
Second	Tetrachloro- <i>m</i> -xylene	14	13	<b>95</b> %
Column	Decachlorobiphenyl	14	11	<b>78</b> %

**Method Reference:** Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).  
 Sample extraction performed by EPA Method 3545. Cleanup performed by EPA Method 3660B and EPA Method 3665A.  
 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.  
 † Non-target analyte. Result is based on a single mid-range calibration standard.  
 \* Confirmatory column quantification.  
 1C Concentration reported from first column.

**EPA Method 8082  
Polychlorinated Biphenyls (PCBs) by GC/ECD**

Field ID: **80537**  
 Project: **14680**  
 Client: **Environmental Health & Engineering, Inc.**  
 Laboratory ID: **99937-05**  
 Sampled: **10-10-06 17:00**  
 Received: **10-12-06 18:00**  
 Extracted: **10-15-06 09:30**  
 Cleaned Up: **10-17-06 07:00**  
 Analyzed: **10-18-06 13:17**  
 Analyst: **CRL**

Matrix: **Soil**  
 Container: **250 mL Glass**  
 Preservation: **Cool**  
 QC Batch ID: **PB-2619-P**  
 Instrument ID: **GC-13 Agilent 6890**  
 Sample Weight: **15 g**  
 Final Volume: **1 mL**  
 Percent Solids: **80**  
 Dilution Factor: **10**

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
12674-11-2	Aroclor 1016	BRL		ug/Kg	970
11104-28-2	Aroclor 1221	BRL		ug/Kg	970
11141-16-5	Aroclor 1232	BRL		ug/Kg	970
53469-21-9	Aroclor 1242	BRL		ug/Kg	970
12672-29-6	Aroclor 1248	BRL		ug/Kg	970
11097-69-1	Aroclor 1254	<b>7,100</b>	1C (6,500)*	ug/Kg	970
11096-82-5	Aroclor 1260	BRL		ug/Kg	970
37324-23-5	Aroclor 1262 †	BRL		ug/Kg	970
11100-14-4	Aroclor 1268 †	BRL		ug/Kg	970

QC Surrogate Compound		Spiked	Measured	Recovery	QC Limits
First Column	Tetrachloro- <i>m</i> -xylene	16	14	<b>85</b> %	30 - 150 %
	Decachlorobiphenyl	16	16	<b>102</b> %	30 - 150 %
Second Column	Tetrachloro- <i>m</i> -xylene	16	12	<b>77</b> %	30 - 150 %
	Decachlorobiphenyl	16	13	<b>81</b> %	30 - 150 %

**Method Reference:** Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).  
 Sample extraction performed by EPA Method 3545. Cleanup performed by EPA Method 3660B and EPA Method 3665A.  
 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.  
 † Non-target analyte. Result is based on a single mid-range calibration standard.  
 \* Confirmatory column quantification.  
 1C Concentration reported from first column.



**EPA Method 8082  
Polychlorinated Biphenyls (PCBs) by GC/ECD**

Field ID: **80539**  
 Project: **14680**  
 Client: **Environmental Health & Engineering, Inc.**  
 Laboratory ID: **99937-06**  
 Sampled: **10-11-06 07:50**  
 Received: **10-12-06 18:00**  
 Extracted: **10-15-06 09:30**  
 Cleaned Up: **10-17-06 07:00**  
 Analyzed: **10-17-06 19:52**  
 Analyst: **CRL**

Matrix: **Soil**  
 Container: **250 mL Glass**  
 Preservation: **Cool**  
 QC Batch ID: **PB-2619-P**  
 Instrument ID: **GC-13 Agilent 6890**  
 Sample Weight: **15 g**  
 Final Volume: **1 mL**  
 Percent Solids: **71**  
 Dilution Factor: **1**

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
12674-11-2	Aroclor 1016	BRL		ug/Kg	110
11104-28-2	Aroclor 1221	BRL		ug/Kg	110
11141-16-5	Aroclor 1232	BRL		ug/Kg	110
53469-21-9	Aroclor 1242	BRL		ug/Kg	110
12672-29-6	Aroclor 1248	BRL		ug/Kg	110
11097-69-1	Aroclor 1254	330	1C (320)*	ug/Kg	110
11096-82-5	Aroclor 1260	BRL		ug/Kg	110
37324-23-5	Aroclor 1262 †	BRL		ug/Kg	110
11100-14-4	Aroclor 1268 †	BRL		ug/Kg	110

QC Surrogate Compound	Spiked	Measured	Recovery	QC Limits
First	Tetrachloro- <i>m</i> -xylene	18	15	81 %
Column	Decachlorobiphenyl	18	21	115 %
Second	Tetrachloro- <i>m</i> -xylene	18	15	81 %
Column	Decachlorobiphenyl	18	16	87 %

**Method Reference:** Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).  
 Sample extraction performed by EPA Method 3545. Cleanup performed by EPA Method 3660B and EPA Method 3665A.  
 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.  
 † Non-target analyte. Result is based on a single mid-range calibration standard.  
 \* Confirmatory column quantification.  
 1C Concentration reported from first column.

## EPA Method 8082 Polychlorinated Biphenyls (PCBs) by GC/ECD

Field ID: **80541**  
Project: **14680**  
Client: **Environmental Health & Engineering, Inc.**  
  
Laboratory ID: **99937-07**  
Sampled: **10-11-06 07:50**  
Received: **10-12-06 18:00**  
Extracted: **10-15-06 09:30**  
Cleaned Up: **10-17-06 07:00**  
Analyzed: **10-17-06 21:03**  
Analyst: **CRL**

Matrix: **Soil**  
Container: **250 mL Glass**  
Preservation: **Cool**  
  
QC Batch ID: **PB-2619-P**  
Instrument ID: **GC-13 Agilent 6890**  
Sample Weight: **16 g**  
Final Volume: **1 mL**  
Percent Solids: **71**  
Dilution Factor: **1**

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
12674-11-2	Aroclor 1016	BRL		ug/Kg	110
11104-28-2	Aroclor 1221	BRL		ug/Kg	110
11141-16-5	Aroclor 1232	BRL		ug/Kg	110
53469-21-9	Aroclor 1242	BRL		ug/Kg	110
12672-29-6	Aroclor 1248	BRL		ug/Kg	110
11097-69-1	Aroclor 1254	<b>290</b>	2C (280)*	ug/Kg	110
11096-82-5	Aroclor 1260	BRL		ug/Kg	110
37324-23-5	Aroclor 1262 †	BRL		ug/Kg	110
11100-14-4	Aroclor 1268 †	BRL		ug/Kg	110

QC Surrogate Compound		Spiked	Measured	Recovery	QC Limits
First Column	Tetrachloro- <i>m</i> -xylene	18	16	<b>87</b> %	30 - 150 %
	Decachlorobiphenyl	18	20	<b>110</b> %	30 - 150 %
Second Column	Tetrachloro- <i>m</i> -xylene	18	15	<b>81</b> %	30 - 150 %
	Decachlorobiphenyl	18	14	<b>76</b> %	30 - 150 %

**Method Reference:** Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).  
Sample extraction performed by EPA Method 3545. Cleanup performed by EPA Method 3660B and EPA Method 3665A.  
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.  
† Non-target analyte. Result is based on a single mid-range calibration standard.  
\* Confirmatory column quantification.  
2C Concentration reported from second column.

**EPA Method 8082  
Polychlorinated Biphenyls (PCBs) by GC/ECD**

Field ID: **80543**  
 Project: **14680**  
 Client: **Environmental Health & Engineering, Inc.**  
 Laboratory ID: **99937-08**  
 Sampled: **10-11-06 14:21**  
 Received: **10-12-06 18:00**  
 Extracted: **10-15-06 09:30**  
 Cleaned Up: **10-17-06 07:00**  
 Analyzed: **10-17-06 21:27**  
 Analyst: **CRL**

Matrix: **Soil**  
 Container: **250 mL Glass**  
 Preservation: **Cool**  
 QC Batch ID: **PB-2619-P**  
 Instrument ID: **GC-13 Agilent 6890**  
 Sample Weight: **15 g**  
 Final Volume: **1 mL**  
 Percent Solids: **83**  
 Dilution Factor: **1**

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
12674-11-2	Aroclor 1016	BRL		ug/Kg	93
11104-28-2	Aroclor 1221	BRL		ug/Kg	93
11141-16-5	Aroclor 1232	BRL		ug/Kg	93
53469-21-9	Aroclor 1242	BRL		ug/Kg	93
12672-29-6	Aroclor 1248	BRL		ug/Kg	93
11097-69-1	Aroclor 1254	<b>470</b>	2C (370)*	ug/Kg	93
11096-82-5	Aroclor 1260	BRL		ug/Kg	93
37324-23-5	Aroclor 1262 †	BRL		ug/Kg	93
11100-14-4	Aroclor 1268 †	BRL		ug/Kg	93

QC Surrogate Compound	Spiked	Measured	Recovery	QC Limits
First	Tetrachloro- <i>m</i> -xylene	15	11	<b>71</b> %
Column	Decachlorobiphenyl	15	14	<b>90</b> %
Second	Tetrachloro- <i>m</i> -xylene	15	12	<b>78</b> %
Column	Decachlorobiphenyl	15	11	<b>74</b> %

**Method Reference:** Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).  
 Sample extraction performed by EPA Method 3545. Cleanup performed by EPA Method 3660B and EPA Method 3665A.  
 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.  
 † Non-target analyte. Result is based on a single mid-range calibration standard.  
 \* Confirmatory column quantification.  
 2C Concentration reported from second column.

## EPA Method 8082 Polychlorinated Biphenyls (PCBs) by GC/ECD

Field ID: **80545**  
Project: **14680**  
Client: **Environmental Health & Engineering, Inc.**  
  
Laboratory ID: **99937-09**  
Sampled: **10-11-06 14:06**  
Received: **10-12-06 18:00**  
Extracted: **10-16-06 10:00**  
Cleaned Up: **10-19-06 16:00**  
Analyzed: **10-20-06 03:01**  
Analyst: **CRL**

Matrix: **Soil**  
Container: **250 mL Glass**  
Preservation: **Cool**  
  
QC Batch ID: **PB-2620-P**  
Instrument ID: **GC-13 Agilent 6890**  
Sample Weight: **15 g**  
Final Volume: **1 mL**  
Percent Solids: **83**  
Dilution Factor: **1**

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
12674-11-2	Aroclor 1016	BRL		ug/Kg	95
11104-28-2	Aroclor 1221	BRL		ug/Kg	95
11141-16-5	Aroclor 1232	BRL		ug/Kg	95
53469-21-9	Aroclor 1242	BRL		ug/Kg	95
12672-29-6	Aroclor 1248	BRL		ug/Kg	95
11097-69-1	Aroclor 1254	<b>360</b>	2C (350)*	ug/Kg	95
11096-82-5	Aroclor 1260	BRL		ug/Kg	95
37324-23-5	Aroclor 1262 †	BRL		ug/Kg	95
11100-14-4	Aroclor 1268 †	BRL		ug/Kg	95

QC Surrogate Compound	Spiked	Measured	Recovery	QC Limits
First	Tetrachloro- <i>m</i> -xylene	16	14	<b>86</b> %
Column	Decachlorobiphenyl	16	19	<b>121</b> %
Second	Tetrachloro- <i>m</i> -xylene	16	14	<b>85</b> %
Column	Decachlorobiphenyl	16	13	<b>85</b> %

**Method Reference:** Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).  
Sample extraction performed by EPA Method 3545. Cleanup performed by EPA Method 3660B and EPA Method 3665A.  
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.  
† Non-target analyte. Result is based on a single mid-range calibration standard.  
\* Confirmatory column quantification.  
2C Concentration reported from second column.

**EPA Method 8082  
Polychlorinated Biphenyls (PCBs) by GC/ECD**

Field ID: **80547**  
 Project: **14680**  
 Client: **Environmental Health & Engineering, Inc.**  
 Laboratory ID: **99937-10**  
 Sampled: **10-11-06 13:45**  
 Received: **10-12-06 18:00**  
 Extracted: **10-16-06 10:00**  
 Cleaned Up: **10-19-06 16:00**  
 Analyzed: **10-20-06 03:48**  
 Analyst: **CRL**

Matrix: **Soil**  
 Container: **250 mL Glass**  
 Preservation: **Cool**  
 QC Batch ID: **PB-2620-P**  
 Instrument ID: **GC-13 Agilent 6890**  
 Sample Weight: **16 g**  
 Final Volume: **1 mL**  
 Percent Solids: **81**  
 Dilution Factor: **1**

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
12674-11-2	Aroclor 1016	BRL		ug/Kg	94
11104-28-2	Aroclor 1221	BRL		ug/Kg	94
11141-16-5	Aroclor 1232	BRL		ug/Kg	94
53469-21-9	Aroclor 1242	BRL		ug/Kg	94
12672-29-6	Aroclor 1248	BRL		ug/Kg	94
11097-69-1	Aroclor 1254	570	1C (560)*	ug/Kg	94
11096-82-5	Aroclor 1260	BRL		ug/Kg	94
37324-23-5	Aroclor 1262 †	BRL		ug/Kg	94
11100-14-4	Aroclor 1268 †	BRL		ug/Kg	94

QC Surrogate Compound	Spiked	Measured	Recovery	QC Limits
First	Tetrachloro- <i>m</i> -xylene	16	10	66 %
Column	Decachlorobiphenyl	16	16	102 %
Second	Tetrachloro- <i>m</i> -xylene	16	10	65 %
Column	Decachlorobiphenyl	16	11	72 %

**Method Reference:** Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).  
 Sample extraction performed by EPA Method 3545. Cleanup performed by EPA Method 3660B and EPA Method 3665A.  
 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.  
 † Non-target analyte. Result is based on a single mid-range calibration standard.  
 \* Confirmatory column quantification.  
 1C Concentration reported from first column.

## EPA Method 8082 Polychlorinated Biphenyls (PCBs) by GC/ECD

Field ID: **80549**  
Project: **14680**  
Client: **Environmental Health & Engineering, Inc.**  
  
Laboratory ID: **99937-11**  
Sampled: **10-11-06 13:36**  
Received: **10-12-06 18:00**  
Extracted: **10-16-06 10:00**  
Cleaned Up: **10-19-06 16:00**  
Analyzed: **10-20-06 04:35**  
Analyst: **CRL**

Matrix: **Soil**  
Container: **250 mL Glass**  
Preservation: **Cool**  
  
QC Batch ID: **PB-2620-P**  
Instrument ID: **GC-13 Agilent 6890**  
Sample Weight: **15 g**  
Final Volume: **1 mL**  
Percent Solids: **85**  
Dilution Factor: **1**

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
12674-11-2	Aroclor 1016	BRL		ug/Kg	94
11104-28-2	Aroclor 1221	BRL		ug/Kg	94
11141-16-5	Aroclor 1232	BRL		ug/Kg	94
53469-21-9	Aroclor 1242	BRL		ug/Kg	94
12672-29-6	Aroclor 1248	BRL		ug/Kg	94
11097-69-1	Aroclor 1254	BRL		ug/Kg	94
11096-82-5	Aroclor 1260	BRL		ug/Kg	94
37324-23-5	Aroclor 1262 †	BRL		ug/Kg	94
11100-14-4	Aroclor 1268 †	BRL		ug/Kg	94

QC Surrogate Compound	Spiked	Measured	Recovery	QC Limits
First	Tetrachloro- <i>m</i> -xylene	16	16	102 %
Column	Decachlorobiphenyl	16	20	127 %
Second	Tetrachloro- <i>m</i> -xylene	16	15	98 %
Column	Decachlorobiphenyl	16	14	89 %

**Method Reference:** Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).  
Sample extraction performed by EPA Method 3545. Cleanup performed by EPA Method 3660B and EPA Method 3665A.  
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.  
† Non-target analyte. Result is based on a single mid-range calibration standard.

**EPA Method 8082  
Polychlorinated Biphenyls (PCBs) by GC/ECD**

Field ID: **80551**  
 Project: **14680**  
 Client: **Environmental Health & Engineering, Inc.**  
 Laboratory ID: **99937-12**  
 Sampled: **10-11-06 13:54**  
 Received: **10-12-06 18:00**  
 Extracted: **10-16-06 10:00**  
 Cleaned Up: **10-19-06 16:00**  
 Analyzed: **10-20-06 04:59**  
 Analyst: **CRL**

Matrix: **Soil**  
 Container: **250 mL Glass**  
 Preservation: **Cool**  
 QC Batch ID: **PB-2620-P**  
 Instrument ID: **GC-13 Agilent 6890**  
 Sample Weight: **15 g**  
 Final Volume: **1 mL**  
 Percent Solids: **86**  
 Dilution Factor: **1**

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
12674-11-2	Aroclor 1016	BRL		ug/Kg	93
11104-28-2	Aroclor 1221	BRL		ug/Kg	93
11141-16-5	Aroclor 1232	BRL		ug/Kg	93
53469-21-9	Aroclor 1242	BRL		ug/Kg	93
12672-29-6	Aroclor 1248	BRL		ug/Kg	93
11097-69-1	Aroclor 1254	<b>930</b>	1C (850)*	ug/Kg	93
11096-82-5	Aroclor 1260	BRL		ug/Kg	93
37324-23-5	Aroclor 1262 †	BRL		ug/Kg	93
11100-14-4	Aroclor 1268 †	BRL		ug/Kg	93

QC Surrogate Compound		Spiked	Measured	Recovery	QC Limits
First Column	Tetrachloro- <i>m</i> -xylene	15	13	<b>87</b> %	30 - 150 %
	Decachlorobiphenyl	15	17	<b>110</b> %	30 - 150 %
Second Column	Tetrachloro- <i>m</i> -xylene	15	12	<b>81</b> %	30 - 150 %
	Decachlorobiphenyl	15	12	<b>77</b> %	30 - 150 %

**Method Reference:** Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).  
 Sample extraction performed by EPA Method 3545. Cleanup performed by EPA Method 3660B and EPA Method 3665A.  
 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.  
 † Non-target analyte. Result is based on a single mid-range calibration standard.  
 \* Confirmatory column quantification.  
 1C Concentration reported from first column.

## EPA Method 8082 Polychlorinated Biphenyls (PCBs) by GC/ECD

Field ID: **80553**  
Project: **14680**  
Client: **Environmental Health & Engineering, Inc.**  
  
Laboratory ID: **99937-13**  
Sampled: **10-11-06 12:54**  
Received: **10-12-06 18:00**  
Extracted: **10-16-06 10:00**  
Cleaned Up: **10-19-06 16:00**  
Analyzed: **10-20-06 05:23**  
Analyst: **CRL**

Matrix: **Soil**  
Container: **250 mL Glass**  
Preservation: **Cool**  
  
QC Batch ID: **PB-2620-P**  
Instrument ID: **GC-13 Agilent 6890**  
Sample Weight: **16 g**  
Final Volume: **1 mL**  
Percent Solids: **85**  
Dilution Factor: **1**

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
12674-11-2	Aroclor 1016	BRL		ug/Kg	90
11104-28-2	Aroclor 1221	BRL		ug/Kg	90
11141-16-5	Aroclor 1232	BRL		ug/Kg	90
53469-21-9	Aroclor 1242	BRL		ug/Kg	90
12672-29-6	Aroclor 1248	BRL		ug/Kg	90
11097-69-1	Aroclor 1254	<b>100</b>	2C (95)*	ug/Kg	90
11096-82-5	Aroclor 1260	BRL		ug/Kg	90
37324-23-5	Aroclor 1262 †	BRL		ug/Kg	90
11100-14-4	Aroclor 1268 †	BRL		ug/Kg	90

QC Surrogate Compound	Spiked	Measured	Recovery	QC Limits
First	Tetrachloro- <i>m</i> -xylene	15	13	<b>86</b> %
Column	Decachlorobiphenyl	15	18	<b>118</b> %
Second	Tetrachloro- <i>m</i> -xylene	15	12	<b>81</b> %
Column	Decachlorobiphenyl	15	12	<b>81</b> %

**Method Reference:** Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).  
Sample extraction performed by EPA Method 3545. Cleanup performed by EPA Method 3660B and EPA Method 3665A.  
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.  
† Non-target analyte. Result is based on a single mid-range calibration standard.  
\* Confirmatory column quantification.  
2C Concentration reported from second column.



**EPA Method 8082  
Polychlorinated Biphenyls (PCBs) by GC/ECD**

Field ID: **80555**  
 Project: **14680**  
 Client: **Environmental Health & Engineering, Inc.**  
 Laboratory ID: **99937-14**  
 Sampled: **10-11-06 12:35**  
 Received: **10-12-06 18:00**  
 Extracted: **10-16-06 10:00**  
 Cleaned Up: **10-19-06 16:00**  
 Analyzed: **10-20-06 05:46**  
 Analyst: **CRL**

Matrix: **Soil**  
 Container: **250 mL Glass**  
 Preservation: **Cool**  
 QC Batch ID: **PB-2620-P**  
 Instrument ID: **GC-13 Agilent 6890**  
 Sample Weight: **15 g**  
 Final Volume: **1 mL**  
 Percent Solids: **75**  
 Dilution Factor: **1**

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
12674-11-2	Aroclor 1016	BRL		ug/Kg	100
11104-28-2	Aroclor 1221	BRL		ug/Kg	100
11141-16-5	Aroclor 1232	BRL		ug/Kg	100
53469-21-9	Aroclor 1242	BRL		ug/Kg	100
12672-29-6	Aroclor 1248	BRL		ug/Kg	100
11097-69-1	Aroclor 1254	<b>580</b>	1C (520)*	ug/Kg	100
11096-82-5	Aroclor 1260	BRL		ug/Kg	100
37324-23-5	Aroclor 1262 †	BRL		ug/Kg	100
11100-14-4	Aroclor 1268 †	BRL		ug/Kg	100

QC Surrogate Compound		Spiked	Measured	Recovery	QC Limits
First Column	Tetrachloro- <i>m</i> -xylene	17	14	<b>80</b> %	30 - 150 %
	Decachlorobiphenyl	17	20	<b>114</b> %	30 - 150 %
Second Column	Tetrachloro- <i>m</i> -xylene	17	13	<b>77</b> %	30 - 150 %
	Decachlorobiphenyl	17	14	<b>80</b> %	30 - 150 %

**Method Reference:** Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).  
 Sample extraction performed by EPA Method 3545. Cleanup performed by EPA Method 3660B and EPA Method 3665A.  
 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.  
 † Non-target analyte. Result is based on a single mid-range calibration standard.  
 \* Confirmatory column quantification.  
 1C Concentration reported from first column.

**EPA Method 8082  
Polychlorinated Biphenyls (PCBs) by GC/ECD**

Field ID: **80557**  
 Project: **14680**  
 Client: **Environmental Health & Engineering, Inc.**  
 Laboratory ID: **99937-15**  
 Sampled: **10-11-06 12:47**  
 Received: **10-12-06 18:00**  
 Extracted: **10-16-06 10:00**  
 Cleaned Up: **10-19-06 16:00**  
 Analyzed: **10-20-06 06:10**  
 Analyst: **CRL**

Matrix: **Soil**  
 Container: **250 mL Glass**  
 Preservation: **Cool**  
 QC Batch ID: **PB-2620-P**  
 Instrument ID: **GC-13 Agilent 6890**  
 Sample Weight: **15 g**  
 Final Volume: **1 mL**  
 Percent Solids: **78**  
 Dilution Factor: **1**

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
12674-11-2	Aroclor 1016	BRL		ug/Kg	100
11104-28-2	Aroclor 1221	BRL		ug/Kg	100
11141-16-5	Aroclor 1232	BRL		ug/Kg	100
53469-21-9	Aroclor 1242	BRL		ug/Kg	100
12672-29-6	Aroclor 1248	BRL		ug/Kg	100
11097-69-1	Aroclor 1254	<b>170</b>	2C (150)*	ug/Kg	100
11096-82-5	Aroclor 1260	BRL		ug/Kg	100
37324-23-5	Aroclor 1262 †	BRL		ug/Kg	100
11100-14-4	Aroclor 1268 †	BRL		ug/Kg	100

QC Surrogate Compound		Spiked	Measured	Recovery	QC Limits
First Column	Tetrachloro- <i>m</i> -xylene	17	9	<b>51</b> %	30 - 150 %
	Decachlorobiphenyl	17	10	<b>61</b> %	30 - 150 %
Second Column	Tetrachloro- <i>m</i> -xylene	17	9	<b>51</b> %	30 - 150 %
	Decachlorobiphenyl	17	7	<b>44</b> %	30 - 150 %

**Method Reference:** Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).  
 Sample extraction performed by EPA Method 3545. Cleanup performed by EPA Method 3660B and EPA Method 3665A.  
 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.  
 † Non-target analyte. Result is based on a single mid-range calibration standard.  
 \* Confirmatory column quantification.  
 2C Concentration reported from second column.

**EPA Method 8082  
Polychlorinated Biphenyls (PCBs) by GC/ECD**

Field ID: **80559**  
 Project: **14680**  
 Client: **Environmental Health & Engineering, Inc.**  
 Laboratory ID: **99937-16**  
 Sampled: **10-11-06 12:18**  
 Received: **10-12-06 18:00**  
 Extracted: **10-16-06 10:00**  
 Cleaned Up: **10-19-06 16:00**  
 Analyzed: **10-20-06 15:34**  
 Analyst: **CRL**

Matrix: **Soil**  
 Container: **250 mL Glass**  
 Preservation: **Cool**  
 QC Batch ID: **PB-2620-P**  
 Instrument ID: **GC-13 Agilent 6890**  
 Sample Weight: **16 g**  
 Final Volume: **1 mL**  
 Percent Solids: **75**  
 Dilution Factor: **2**

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
12674-11-2	Aroclor 1016	BRL		ug/Kg	200
11104-28-2	Aroclor 1221	BRL		ug/Kg	200
11141-16-5	Aroclor 1232	BRL		ug/Kg	200
53469-21-9	Aroclor 1242	BRL		ug/Kg	200
12672-29-6	Aroclor 1248	BRL		ug/Kg	200
11097-69-1	Aroclor 1254	<b>1,800</b>	1C (1,800)*	ug/Kg	200
11096-82-5	Aroclor 1260	BRL		ug/Kg	200
37324-23-5	Aroclor 1262 †	BRL		ug/Kg	200
11100-14-4	Aroclor 1268 †	BRL		ug/Kg	200

QC Surrogate Compound	Spiked	Measured	Recovery	QC Limits
First	Tetrachloro- <i>m</i> -xylene	17	15	<b>88</b> %
Column	Decachlorobiphenyl	17	21	<b>123</b> %
Second	Tetrachloro- <i>m</i> -xylene	17	15	<b>90</b> %
Column	Decachlorobiphenyl	17	17	<b>99</b> %

**Method Reference:** Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).  
 Sample extraction performed by EPA Method 3545. Cleanup performed by EPA Method 3660B and EPA Method 3665A.  
 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.  
 † Non-target analyte. Result is based on a single mid-range calibration standard.  
 \* Confirmatory column quantification.  
 1C Concentration reported from first column.

**EPA Method 8082  
Polychlorinated Biphenyls (PCBs) by GC/ECD**

Field ID: **80561**  
 Project: **14680**  
 Client: **Environmental Health & Engineering, Inc.**  
 Laboratory ID: **99937-17**  
 Sampled: **10-11-06 13:21**  
 Received: **10-12-06 18:00**  
 Extracted: **10-16-06 10:00**  
 Cleaned Up: **10-19-06 16:00**  
 Analyzed: **10-20-06 15:57**  
 Analyst: **CRL**

Matrix: **Soil**  
 Container: **250 mL Glass**  
 Preservation: **Cool**  
 QC Batch ID: **PB-2620-P**  
 Instrument ID: **GC-13 Agilent 6890**  
 Sample Weight: **16 g**  
 Final Volume: **1 mL**  
 Percent Solids: **78**  
 Dilution Factor: **2**

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
12674-11-2	Aroclor 1016	BRL		ug/Kg	200
11104-28-2	Aroclor 1221	BRL		ug/Kg	200
11141-16-5	Aroclor 1232	BRL		ug/Kg	200
53469-21-9	Aroclor 1242	BRL		ug/Kg	200
12672-29-6	Aroclor 1248	BRL		ug/Kg	200
11097-69-1	Aroclor 1254	<b>1,700</b>	2C (1,500)*	ug/Kg	200
11096-82-5	Aroclor 1260	BRL		ug/Kg	200
37324-23-5	Aroclor 1262 †	BRL		ug/Kg	200
11100-14-4	Aroclor 1268 †	BRL		ug/Kg	200

QC Surrogate Compound	Spiked	Measured	Recovery	QC Limits
First	Tetrachloro- <i>m</i> -xylene	16	14	<b>85</b> %
Column	Decachlorobiphenyl	16	20	<b>120</b> %
Second	Tetrachloro- <i>m</i> -xylene	16	15	<b>89</b> %
Column	Decachlorobiphenyl	16	15	<b>94</b> %

**Method Reference:** Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).  
 Sample extraction performed by EPA Method 3545. Cleanup performed by EPA Method 3660B and EPA Method 3665A.  
 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.  
 † Non-target analyte. Result is based on a single mid-range calibration standard.  
 \* Confirmatory column quantification.  
 2C Concentration reported from second column.

**EPA Method 8082  
Polychlorinated Biphenyls (PCBs) by GC/ECD**

Field ID: **80563**  
 Project: **14680**  
 Client: **Environmental Health & Engineering, Inc.**  
 Laboratory ID: **99937-18**  
 Sampled: **10-11-06 12:58**  
 Received: **10-12-06 18:00**  
 Extracted: **10-16-06 10:00**  
 Cleaned Up: **10-19-06 16:00**  
 Analyzed: **10-20-06 08:08**  
 Analyst: **CRL**

Matrix: **Soil**  
 Container: **250 mL Glass**  
 Preservation: **Cool**  
 QC Batch ID: **PB-2620-P**  
 Instrument ID: **GC-13 Agilent 6890**  
 Sample Weight: **15 g**  
 Final Volume: **1 mL**  
 Percent Solids: **84**  
 Dilution Factor: **1**

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
12674-11-2	Aroclor 1016	BRL		ug/Kg	92
11104-28-2	Aroclor 1221	BRL		ug/Kg	92
11141-16-5	Aroclor 1232	BRL		ug/Kg	92
53469-21-9	Aroclor 1242	BRL		ug/Kg	92
12672-29-6	Aroclor 1248	BRL		ug/Kg	92
11097-69-1	Aroclor 1254	<b>99</b>	2C (90)*	ug/Kg	92
11096-82-5	Aroclor 1260	BRL		ug/Kg	92
37324-23-5	Aroclor 1262 †	BRL		ug/Kg	92
11100-14-4	Aroclor 1268 †	BRL		ug/Kg	92

QC Surrogate Compound	Spiked	Measured	Recovery	QC Limits
First	Tetrachloro- <i>m</i> -xylene	15	15	<b>96</b> %
Column	Decachlorobiphenyl	15	18	<b>117</b> %
Second	Tetrachloro- <i>m</i> -xylene	15	15	<b>99</b> %
Column	Decachlorobiphenyl	15	14	<b>93</b> %

**Method Reference:** Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).  
 Sample extraction performed by EPA Method 3545. Cleanup performed by EPA Method 3660B and EPA Method 3665A.  
 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.  
 † Non-target analyte. Result is based on a single mid-range calibration standard.  
 \* Confirmatory column quantification.  
 2C Concentration reported from second column.

**EPA Method 8082  
Polychlorinated Biphenyls (PCBs) by GC/ECD**

Field ID: **80565**  
 Project: **14680**  
 Client: **Environmental Health & Engineering, Inc.**  
 Laboratory ID: **99937-19**  
 Sampled: **10-11-06 10:42**  
 Received: **10-12-06 18:00**  
 Extracted: **10-16-06 10:00**  
 Cleaned Up: **10-19-06 16:00**  
 Analyzed: **10-20-06 08:32**  
 Analyst: **CRL**

Matrix: **Soil**  
 Container: **250 mL Glass**  
 Preservation: **Cool**  
 QC Batch ID: **PB-2620-P**  
 Instrument ID: **GC-13 Agilent 6890**  
 Sample Weight: **16 g**  
 Final Volume: **1 mL**  
 Percent Solids: **80**  
 Dilution Factor: **1**

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
12674-11-2	Aroclor 1016	BRL		ug/Kg	94
11104-28-2	Aroclor 1221	BRL		ug/Kg	94
11141-16-5	Aroclor 1232	BRL		ug/Kg	94
53469-21-9	Aroclor 1242	BRL		ug/Kg	94
12672-29-6	Aroclor 1248	BRL		ug/Kg	94
11097-69-1	Aroclor 1254	<b>690</b>	1C (660)*	ug/Kg	94
11096-82-5	Aroclor 1260	BRL		ug/Kg	94
37324-23-5	Aroclor 1262 †	BRL		ug/Kg	94
11100-14-4	Aroclor 1268 †	BRL		ug/Kg	94

QC Surrogate Compound	Spiked	Measured	Recovery	QC Limits
First	Tetrachloro- <i>m</i> -xylene	16	13	<b>81</b> %
Column	Decachlorobiphenyl	16	18	<b>113</b> %
Second	Tetrachloro- <i>m</i> -xylene	16	13	<b>84</b> %
Column	Decachlorobiphenyl	16	14	<b>91</b> %

**Method Reference:** Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).  
 Sample extraction performed by EPA Method 3545. Cleanup performed by EPA Method 3660B and EPA Method 3665A.  
 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.  
 † Non-target analyte. Result is based on a single mid-range calibration standard.  
 \* Confirmatory column quantification.  
 1C Concentration reported from first column.

**EPA Method 8082  
Polychlorinated Biphenyls (PCBs) by GC/ECD**

Field ID: **80567**  
 Project: **14680**  
 Client: **Environmental Health & Engineering, Inc.**  
 Laboratory ID: **99937-20**  
 Sampled: **10-11-06 10:56**  
 Received: **10-12-06 18:00**  
 Extracted: **10-16-06 10:00**  
 Cleaned Up: **10-19-06 16:00**  
 Analyzed: **10-20-06 08:56**  
 Analyst: **CRL**

Matrix: **Soil**  
 Container: **250 mL Glass**  
 Preservation: **Cool**  
 QC Batch ID: **PB-2620-P**  
 Instrument ID: **GC-13 Agilent 6890**  
 Sample Weight: **15 g**  
 Final Volume: **1 mL**  
 Percent Solids: **84**  
 Dilution Factor: **1**

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
12674-11-2	Aroclor 1016	BRL		ug/Kg	93
11104-28-2	Aroclor 1221	BRL		ug/Kg	93
11141-16-5	Aroclor 1232	BRL		ug/Kg	93
53469-21-9	Aroclor 1242	BRL		ug/Kg	93
12672-29-6	Aroclor 1248	BRL		ug/Kg	93
11097-69-1	Aroclor 1254	BRL		ug/Kg	93
11096-82-5	Aroclor 1260	BRL		ug/Kg	93
37324-23-5	Aroclor 1262 †	BRL		ug/Kg	93
11100-14-4	Aroclor 1268 †	BRL		ug/Kg	93

QC Surrogate Compound		Spiked	Measured	Recovery	QC Limits
First Column	Tetrachloro- <i>m</i> -xylene	15	13	<b>84</b> %	30 - 150 %
	Decachlorobiphenyl	15	17	<b>109</b> %	30 - 150 %
Second Column	Tetrachloro- <i>m</i> -xylene	15	13	<b>86</b> %	30 - 150 %
	Decachlorobiphenyl	15	13	<b>85</b> %	30 - 150 %

**Method Reference:** Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).  
 Sample extraction performed by EPA Method 3545. Cleanup performed by EPA Method 3660B and EPA Method 3665A.  
 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.  
 † Non-target analyte. Result is based on a single mid-range calibration standard.

**EPA Method 8082  
Polychlorinated Biphenyls (PCBs) by GC/ECD**

Field ID: **80568**  
 Project: **14680**  
 Client: **Environmental Health & Engineering, Inc.**  
 Laboratory ID: **99937-21**  
 Sampled: **10-11-06 10:56**  
 Received: **10-12-06 18:00**  
 Extracted: **10-16-06 10:00**  
 Cleaned Up: **10-19-06 16:00**  
 Analyzed: **10-20-06 09:19**  
 Analyst: **CRL**

Matrix: **Soil**  
 Container: **250 mL Glass**  
 Preservation: **Cool**  
 QC Batch ID: **PB-2620-P**  
 Instrument ID: **GC-13 Agilent 6890**  
 Sample Weight: **15 g**  
 Final Volume: **1 mL**  
 Percent Solids: **84**  
 Dilution Factor: **1**

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
12674-11-2	Aroclor 1016	BRL		ug/Kg	93
11104-28-2	Aroclor 1221	BRL		ug/Kg	93
11141-16-5	Aroclor 1232	BRL		ug/Kg	93
53469-21-9	Aroclor 1242	BRL		ug/Kg	93
12672-29-6	Aroclor 1248	BRL		ug/Kg	93
11097-69-1	Aroclor 1254	BRL		ug/Kg	93
11096-82-5	Aroclor 1260	BRL		ug/Kg	93
37324-23-5	Aroclor 1262 †	BRL		ug/Kg	93
11100-14-4	Aroclor 1268 †	BRL		ug/Kg	93

QC Surrogate Compound		Spiked	Measured	Recovery	QC Limits
First Column	Tetrachloro- <i>m</i> -xylene	15	13	<b>86</b> %	30 - 150 %
	Decachlorobiphenyl	15	18	<b>116</b> %	30 - 150 %
Second Column	Tetrachloro- <i>m</i> -xylene	15	13	<b>86</b> %	30 - 150 %
	Decachlorobiphenyl	15	14	<b>92</b> %	30 - 150 %

**Method Reference:** Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).  
 Sample extraction performed by EPA Method 3545. Cleanup performed by EPA Method 3660B and EPA Method 3665A.  
 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.  
 † Non-target analyte. Result is based on a single mid-range calibration standard.



**EPA Method 8082  
Polychlorinated Biphenyls (PCBs) by GC/ECD**

Field ID: **80571**  
 Project: **14680**  
 Client: **Environmental Health & Engineering, Inc.**  
 Laboratory ID: **99937-22**  
 Sampled: **10-11-06 11:10**  
 Received: **10-12-06 18:00**  
 Extracted: **10-16-06 10:00**  
 Cleaned Up: **10-19-06 16:00**  
 Analyzed: **10-20-06 09:43**  
 Analyst: **CRL**

Matrix: **Soil**  
 Container: **250 mL Glass**  
 Preservation: **Cool**  
 QC Batch ID: **PB-2620-P**  
 Instrument ID: **GC-13 Agilent 6890**  
 Sample Weight: **16 g**  
 Final Volume: **1 mL**  
 Percent Solids: **97**  
 Dilution Factor: **1**

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
12674-11-2	Aroclor 1016	BRL		ug/Kg	80
11104-28-2	Aroclor 1221	BRL		ug/Kg	80
11141-16-5	Aroclor 1232	BRL		ug/Kg	80
53469-21-9	Aroclor 1242	BRL		ug/Kg	80
12672-29-6	Aroclor 1248	BRL		ug/Kg	80
11097-69-1	Aroclor 1254	500	2C (480)*	ug/Kg	80
11096-82-5	Aroclor 1260	BRL		ug/Kg	80
37324-23-5	Aroclor 1262 †	BRL		ug/Kg	80
11100-14-4	Aroclor 1268 †	BRL		ug/Kg	80

QC Surrogate Compound	Spiked	Measured	Recovery	QC Limits
First	Tetrachloro- <i>m</i> -xylene	13	13	97 %
Column	Decachlorobiphenyl	13	14	109 %
Second	Tetrachloro- <i>m</i> -xylene	13	13	98 %
Column	Decachlorobiphenyl	13	11	86 %

**Method Reference:** Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).  
 Sample extraction performed by EPA Method 3545. Cleanup performed by EPA Method 3660B and EPA Method 3665A.  
 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.  
 † Non-target analyte. Result is based on a single mid-range calibration standard.  
 \* Confirmatory column quantification.  
 2C Concentration reported from second column.

**EPA Method 8082  
Polychlorinated Biphenyls (PCBs) by GC/ECD**

Field ID: **80573**  
 Project: **14680**  
 Client: **Environmental Health & Engineering, Inc.**  
 Laboratory ID: **99937-23**  
 Sampled: **10-11-06 08:09**  
 Received: **10-12-06 18:00**  
 Extracted: **10-16-06 10:00**  
 Cleaned Up: **10-19-06 16:00**  
 Analyzed: **10-20-06 10:07**  
 Analyst: **CRL**

Matrix: **Soil**  
 Container: **250 mL Glass**  
 Preservation: **Cool**  
 QC Batch ID: **PB-2620-P**  
 Instrument ID: **GC-13 Agilent 6890**  
 Sample Weight: **16 g**  
 Final Volume: **1 mL**  
 Percent Solids: **76**  
 Dilution Factor: **1**

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
12674-11-2	Aroclor 1016	BRL		ug/Kg	100
11104-28-2	Aroclor 1221	BRL		ug/Kg	100
11141-16-5	Aroclor 1232	BRL		ug/Kg	100
53469-21-9	Aroclor 1242	BRL		ug/Kg	100
12672-29-6	Aroclor 1248	BRL		ug/Kg	100
11097-69-1	Aroclor 1254	<b>460</b>	2C (440)*	ug/Kg	100
11096-82-5	Aroclor 1260	BRL		ug/Kg	100
37324-23-5	Aroclor 1262 †	BRL		ug/Kg	100
11100-14-4	Aroclor 1268 †	BRL		ug/Kg	100

QC Surrogate Compound		Spiked	Measured	Recovery	QC Limits
First Column	Tetrachloro- <i>m</i> -xylene	17	15	<b>86</b> %	30 - 150 %
	Decachlorobiphenyl	17	19	<b>111</b> %	30 - 150 %
Second Column	Tetrachloro- <i>m</i> -xylene	17	15	<b>90</b> %	30 - 150 %
	Decachlorobiphenyl	17	14	<b>84</b> %	30 - 150 %

**Method Reference:** Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).  
 Sample extraction performed by EPA Method 3545. Cleanup performed by EPA Method 3660B and EPA Method 3665A.  
 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.  
 † Non-target analyte. Result is based on a single mid-range calibration standard.  
 \* Confirmatory column quantification.  
 2C Concentration reported from second column.

**EPA Method 8082  
Polychlorinated Biphenyls (PCBs) by GC/ECD**

Field ID: **80575**  
 Project: **14680**  
 Client: **Environmental Health & Engineering, Inc.**  
 Laboratory ID: **99937-24**  
 Sampled: **10-11-06 09:52**  
 Received: **10-12-06 18:00**  
 Extracted: **10-16-06 10:00**  
 Cleaned Up: **10-19-06 16:00**  
 Analyzed: **10-20-06 10:31**  
 Analyst: **CRL**

Matrix: **Soil**  
 Container: **250 mL Glass**  
 Preservation: **Cool**  
 QC Batch ID: **PB-2620-P**  
 Instrument ID: **GC-13 Agilent 6890**  
 Sample Weight: **15 g**  
 Final Volume: **1 mL**  
 Percent Solids: **40**  
 Dilution Factor: **1**

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
12674-11-2	Aroclor 1016	BRL		ug/Kg	200
11104-28-2	Aroclor 1221	BRL		ug/Kg	200
11141-16-5	Aroclor 1232	BRL		ug/Kg	200
53469-21-9	Aroclor 1242	BRL		ug/Kg	200
12672-29-6	Aroclor 1248	BRL		ug/Kg	200
11097-69-1	Aroclor 1254	<b>270</b>	2C (250)*	ug/Kg	200
11096-82-5	Aroclor 1260	BRL		ug/Kg	200
37324-23-5	Aroclor 1262 †	BRL		ug/Kg	200
11100-14-4	Aroclor 1268 †	BRL		ug/Kg	200

QC Surrogate Compound		Spiked	Measured	Recovery	QC Limits
First Column	Tetrachloro- <i>m</i> -xylene	33	30	<b>92</b> %	30 - 150 %
	Decachlorobiphenyl	33	36	<b>109</b> %	30 - 150 %
Second Column	Tetrachloro- <i>m</i> -xylene	33	32	<b>98</b> %	30 - 150 %
	Decachlorobiphenyl	33	28	<b>85</b> %	30 - 150 %

**Method Reference:** Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).  
 Sample extraction performed by EPA Method 3545. Cleanup performed by EPA Method 3660B and EPA Method 3665A.  
 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.  
 † Non-target analyte. Result is based on a single mid-range calibration standard.  
 \* Confirmatory column quantification.  
 2C Concentration reported from second column.

**EPA Method 8082  
Polychlorinated Biphenyls (PCBs) by GC/ECD**

Field ID: **80576**  
 Project: **14680**  
 Client: **Environmental Health & Engineering, Inc.**  
 Laboratory ID: **99937-25**  
 Sampled: **10-11-06 09:37**  
 Received: **10-12-06 18:00**  
 Extracted: **10-16-06 10:00**  
 Cleaned Up: **10-19-06 16:00**  
 Analyzed: **10-20-06 10:54**  
 Analyst: **CRL**

Matrix: **Soil**  
 Container: **250 mL Glass**  
 Preservation: **Cool**  
 QC Batch ID: **PB-2620-P**  
 Instrument ID: **GC-13 Agilent 6890**  
 Sample Weight: **16 g**  
 Final Volume: **1 mL**  
 Percent Solids: **27**  
 Dilution Factor: **1**

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
12674-11-2	Aroclor 1016	BRL		ug/Kg	280
11104-28-2	Aroclor 1221	BRL		ug/Kg	280
11141-16-5	Aroclor 1232	BRL		ug/Kg	280
53469-21-9	Aroclor 1242	BRL		ug/Kg	280
12672-29-6	Aroclor 1248	BRL		ug/Kg	280
11097-69-1	Aroclor 1254	330	2C (290)*	ug/Kg	280
11096-82-5	Aroclor 1260	BRL		ug/Kg	280
37324-23-5	Aroclor 1262 †	BRL		ug/Kg	280
11100-14-4	Aroclor 1268 †	BRL		ug/Kg	280

QC Surrogate Compound	Spiked	Measured	Recovery	QC Limits
First	Tetrachloro- <i>m</i> -xylene	47	43	93 %
Column	Decachlorobiphenyl	47	64	136 %
Second	Tetrachloro- <i>m</i> -xylene	47	46	98 %
Column	Decachlorobiphenyl	47	42	90 %

**Method Reference:** Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).  
 Sample extraction performed by EPA Method 3545. Cleanup performed by EPA Method 3660B and EPA Method 3665A.  
 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.  
 † Non-target analyte. Result is based on a single mid-range calibration standard.  
 \* Confirmatory column quantification.  
 2C Concentration reported from second column.

**EPA Method 8082  
Polychlorinated Biphenyls (PCBs) by GC/ECD**

Field ID: **80577**  
 Project: **14680**  
 Client: **Environmental Health & Engineering, Inc.**  
 Laboratory ID: **99937-26**  
 Sampled: **10-11-06 09:29**  
 Received: **10-12-06 18:00**  
 Extracted: **10-16-06 10:00**  
 Cleaned Up: **10-19-06 16:00**  
 Analyzed: **10-20-06 11:18**  
 Analyst: **CRL**

Matrix: **Soil**  
 Container: **250 mL Glass**  
 Preservation: **Cool**  
 QC Batch ID: **PB-2620-P**  
 Instrument ID: **GC-13 Agilent 6890**  
 Sample Weight: **15 g**  
 Final Volume: **1 mL**  
 Percent Solids: **34**  
 Dilution Factor: **1**

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
12674-11-2	Aroclor 1016	BRL		ug/Kg	230
11104-28-2	Aroclor 1221	BRL		ug/Kg	230
11141-16-5	Aroclor 1232	BRL		ug/Kg	230
53469-21-9	Aroclor 1242	BRL		ug/Kg	230
12672-29-6	Aroclor 1248	BRL		ug/Kg	230
11097-69-1	Aroclor 1254	<b>710</b>	2C (570)*	ug/Kg	230
11096-82-5	Aroclor 1260	BRL		ug/Kg	230
37324-23-5	Aroclor 1262 †	BRL		ug/Kg	230
11100-14-4	Aroclor 1268 †	BRL		ug/Kg	230

QC Surrogate Compound		Spiked	Measured	Recovery	QC Limits
First Column	Tetrachloro- <i>m</i> -xylene	39	35	<b>89</b> %	30 - 150 %
	Decachlorobiphenyl	39	44	<b>112</b> %	30 - 150 %
Second Column	Tetrachloro- <i>m</i> -xylene	39	37	<b>94</b> %	30 - 150 %
	Decachlorobiphenyl	39	39	<b>99</b> %	30 - 150 %

**Method Reference:** Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).  
 Sample extraction performed by EPA Method 3545. Cleanup performed by EPA Method 3660B and EPA Method 3665A.  
 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.  
 † Non-target analyte. Result is based on a single mid-range calibration standard.  
 \* Confirmatory column quantification.  
 2C Concentration reported from second column.

## EPA Method 8082 Polychlorinated Biphenyls (PCBs) by GC/ECD

Field ID: **80578**  
Project: **14680**  
Client: **Environmental Health & Engineering, Inc.**  
Laboratory ID: **99937-27**  
Sampled: **10-11-06 09:29**  
Received: **10-12-06 18:00**  
Extracted: **10-17-06 14:00**  
Cleaned Up: **10-23-06 07:00**  
Analyzed: **10-23-06 16:09**  
Analyst: **CRL**

Matrix: **Soil**  
Container: **250 mL Glass**  
Preservation: **Cool**  
QC Batch ID: **PB-2621-P**  
Instrument ID: **GC-13 Agilent 6890**  
Sample Weight: **15 g**  
Final Volume: **1 mL**  
Percent Solids: **60**  
Dilution Factor: **1**

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
12674-11-2	Aroclor 1016	BRL		ug/Kg	130
11104-28-2	Aroclor 1221	BRL		ug/Kg	130
11141-16-5	Aroclor 1232	BRL		ug/Kg	130
53469-21-9	Aroclor 1242	BRL		ug/Kg	130
12672-29-6	Aroclor 1248	BRL		ug/Kg	130
11097-69-1	Aroclor 1254	<b>210</b>	2C (200)*	ug/Kg	130
11096-82-5	Aroclor 1260	BRL		ug/Kg	130
37324-23-5	Aroclor 1262 †	BRL		ug/Kg	130
11100-14-4	Aroclor 1268 †	BRL		ug/Kg	130

QC Surrogate Compound	Spiked	Measured	Recovery	QC Limits
First	Tetrachloro- <i>m</i> -xylene	22	21	<b>95</b> %
Column	Decachlorobiphenyl	22	24	<b>109</b> %
Second	Tetrachloro- <i>m</i> -xylene	22	20	<b>94</b> %
Column	Decachlorobiphenyl	22	21	<b>99</b> %

**Method Reference:** Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).  
Sample extraction performed by EPA Method 3545. Cleanup performed by EPA Method 3660B and EPA Method 3665A.  
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.  
† Non-target analyte. Result is based on a single mid-range calibration standard.  
\* Confirmatory column quantification.  
2C Concentration reported from second column.

**EPA Method 8082  
Polychlorinated Biphenyls (PCBs) by GC/ECD**

Field ID: **80579**  
 Project: **14680**  
 Client: **Environmental Health & Engineering, Inc.**  
 Laboratory ID: **99937-28**  
 Sampled: **10-11-06 09:13**  
 Received: **10-12-06 18:00**  
 Extracted: **10-17-06 14:00**  
 Cleaned Up: **10-23-06 07:00**  
 Analyzed: **10-23-06 16:56**  
 Analyst: **CRL**

Matrix: **Soil**  
 Container: **250 mL Glass**  
 Preservation: **Cool**  
 QC Batch ID: **PB-2621-P**  
 Instrument ID: **GC-13 Agilent 6890**  
 Sample Weight: **15 g**  
 Final Volume: **1 mL**  
 Percent Solids: **47**  
 Dilution Factor: **1**

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
12674-11-2	Aroclor 1016	BRL		ug/Kg	170
11104-28-2	Aroclor 1221	BRL		ug/Kg	170
11141-16-5	Aroclor 1232	BRL		ug/Kg	170
53469-21-9	Aroclor 1242	BRL		ug/Kg	170
12672-29-6	Aroclor 1248	BRL		ug/Kg	170
11097-69-1	Aroclor 1254	BRL		ug/Kg	170
11096-82-5	Aroclor 1260	BRL		ug/Kg	170
37324-23-5	Aroclor 1262 †	BRL		ug/Kg	170
11100-14-4	Aroclor 1268 †	BRL		ug/Kg	170

QC Surrogate Compound		Spiked	Measured	Recovery	QC Limits
First Column	Tetrachloro- <i>m</i> -xylene	28	29	<b>103</b> %	30 - 150 %
	Decachlorobiphenyl	28	33	<b>120</b> %	30 - 150 %
Second Column	Tetrachloro- <i>m</i> -xylene	28	27	<b>97</b> %	30 - 150 %
	Decachlorobiphenyl	28	22	<b>80</b> %	30 - 150 %

**Method Reference:** Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).  
 Sample extraction performed by EPA Method 3545. Cleanup performed by EPA Method 3660B and EPA Method 3665A.  
 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.  
 † Non-target analyte. Result is based on a single mid-range calibration standard.

**EPA Method 8082  
Polychlorinated Biphenyls (PCBs) by GC/ECD**

Field ID: **80580**  
 Project: **14680**  
 Client: **Environmental Health & Engineering, Inc.**  
 Laboratory ID: **99937-29**  
 Sampled: **10-11-06 10:11**  
 Received: **10-12-06 18:00**  
 Extracted: **10-17-06 14:00**  
 Cleaned Up: **10-23-06 07:00**  
 Analyzed: **10-23-06 17:20**  
 Analyst: **CRL**

Matrix: **Soil**  
 Container: **250 mL Glass**  
 Preservation: **Cool**  
 QC Batch ID: **PB-2621-P**  
 Instrument ID: **GC-13 Agilent 6890**  
 Sample Weight: **15 g**  
 Final Volume: **1 mL**  
 Percent Solids: **30**  
 Dilution Factor: **1**

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
12674-11-2	Aroclor 1016	BRL		ug/Kg	270
11104-28-2	Aroclor 1221	BRL		ug/Kg	270
11141-16-5	Aroclor 1232	BRL		ug/Kg	270
53469-21-9	Aroclor 1242	BRL		ug/Kg	270
12672-29-6	Aroclor 1248	BRL		ug/Kg	270
11097-69-1	Aroclor 1254	BRL		ug/Kg	270
11096-82-5	Aroclor 1260	BRL		ug/Kg	270
37324-23-5	Aroclor 1262 †	BRL		ug/Kg	270
11100-14-4	Aroclor 1268 †	BRL		ug/Kg	270

QC Surrogate Compound		Spiked	Measured	Recovery	QC Limits
First Column	Tetrachloro- <i>m</i> -xylene	44	43	<b>99</b> %	30 - 150 %
	Decachlorobiphenyl	44	44	<b>101</b> %	30 - 150 %
Second Column	Tetrachloro- <i>m</i> -xylene	44	42	<b>95</b> %	30 - 150 %
	Decachlorobiphenyl	44	33	<b>74</b> %	30 - 150 %

**Method Reference:** Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).  
 Sample extraction performed by EPA Method 3545. Cleanup performed by EPA Method 3660B and EPA Method 3665A.  
 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.  
 † Non-target analyte. Result is based on a single mid-range calibration standard.



**EPA Method 8082  
Polychlorinated Biphenyls (PCBs) by GC/ECD**

Field ID: **80581**  
 Project: **14680**  
 Client: **Environmental Health & Engineering, Inc.**  
 Laboratory ID: **99937-30**  
 Sampled: **10-11-06 09:05**  
 Received: **10-12-06 18:00**  
 Extracted: **10-17-06 14:00**  
 Cleaned Up: **10-23-06 07:00**  
 Analyzed: **10-23-06 17:44**  
 Analyst: **CRL**

Matrix: **Soil**  
 Container: **250 mL Glass**  
 Preservation: **Cool**  
 QC Batch ID: **PB-2621-P**  
 Instrument ID: **GC-13 Agilent 6890**  
 Sample Weight: **15 g**  
 Final Volume: **1 mL**  
 Percent Solids: **69**  
 Dilution Factor: **1**

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
12674-11-2	Aroclor 1016	BRL		ug/Kg	110
11104-28-2	Aroclor 1221	BRL		ug/Kg	110
11141-16-5	Aroclor 1232	BRL		ug/Kg	110
53469-21-9	Aroclor 1242	BRL		ug/Kg	110
12672-29-6	Aroclor 1248	BRL		ug/Kg	110
11097-69-1	Aroclor 1254	730	2C (680)*	ug/Kg	110
11096-82-5	Aroclor 1260	BRL		ug/Kg	110
37324-23-5	Aroclor 1262 †	BRL		ug/Kg	110
11100-14-4	Aroclor 1268 †	BRL		ug/Kg	110

QC Surrogate Compound	Spiked	Measured	Recovery	QC Limits
First	Tetrachloro- <i>m</i> -xylene	19	17	91 %
Column	Decachlorobiphenyl	19	21	111 %
Second	Tetrachloro- <i>m</i> -xylene	19	17	91 %
Column	Decachlorobiphenyl	19	14	75 %

**Method Reference:** Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).  
 Sample extraction performed by EPA Method 3545. Cleanup performed by EPA Method 3660B and EPA Method 3665A.  
 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.  
 † Non-target analyte. Result is based on a single mid-range calibration standard.  
 \* Confirmatory column quantification.  
 2C Concentration reported from second column.

**EPA Method 8082  
Polychlorinated Biphenyls (PCBs) by GC/ECD**

Field ID: **80582**  
 Project: **14680**  
 Client: **Environmental Health & Engineering, Inc.**  
 Laboratory ID: **99937-31**  
 Sampled: **10-11-06 08:41**  
 Received: **10-12-06 18:00**  
 Extracted: **10-17-06 14:00**  
 Cleaned Up: **10-23-06 07:00**  
 Analyzed: **10-24-06 11:15**  
 Analyst: **CRL**

Matrix: **Soil**  
 Container: **250 mL Glass**  
 Preservation: **Cool**  
 QC Batch ID: **PB-2621-P**  
 Instrument ID: **GC-13 Agilent 6890**  
 Sample Weight: **15 g**  
 Final Volume: **1 mL**  
 Percent Solids: **48**  
 Dilution Factor: **25**

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
12674-11-2	Aroclor 1016		BRL	ug/Kg	4,100
11104-28-2	Aroclor 1221		BRL	ug/Kg	4,100
11141-16-5	Aroclor 1232		BRL	ug/Kg	4,100
53469-21-9	Aroclor 1242		BRL	ug/Kg	4,100
12672-29-6	Aroclor 1248		BRL	ug/Kg	4,100
11097-69-1	Aroclor 1254	<b>25,000</b>	1C (23,000)*	ug/Kg	4,100
11096-82-5	Aroclor 1260		BRL	ug/Kg	4,100
37324-23-5	Aroclor 1262 †		BRL	ug/Kg	4,100
11100-14-4	Aroclor 1268 †		BRL	ug/Kg	4,100

QC Surrogate Compound		Spiked	Measured	Recovery	QC Limits
First	Tetrachloro- <i>m</i> -xylene	27	na	d	30 - 150 %
Column	Decachlorobiphenyl	27	na	d	30 - 150 %
Second	Tetrachloro- <i>m</i> -xylene	27	na	d	30 - 150 %
Column	Decachlorobiphenyl	27	na	d	30 - 150 %

**Method Reference:** Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).  
 Sample extraction performed by EPA Method 3545. Cleanup performed by EPA Method 3660B and EPA Method 3665A.  
 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.  
 † Non-target analyte. Result is based on a single mid-range calibration standard.  
 \* Confirmatory column quantification.  
 1C Concentration reported from first column.

**EPA Method 8082  
Polychlorinated Biphenyls (PCBs) by GC/ECD**

Field ID: **80583**  
 Project: **14680**  
 Client: **Environmental Health & Engineering, Inc.**  
 Laboratory ID: **99937-32**  
 Sampled: **10-11-06 08:26**  
 Received: **10-12-06 18:00**  
 Extracted: **10-17-06 14:00**  
 Cleaned Up: **10-23-06 07:00**  
 Analyzed: **10-23-06 18:31**  
 Analyst: **CRL**

Matrix: **Soil**  
 Container: **250 mL Glass**  
 Preservation: **Cool**  
 QC Batch ID: **PB-2621-P**  
 Instrument ID: **GC-13 Agilent 6890**  
 Sample Weight: **15 g**  
 Final Volume: **1 mL**  
 Percent Solids: **69**  
 Dilution Factor: **1**

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
12674-11-2	Aroclor 1016	BRL		ug/Kg	110
11104-28-2	Aroclor 1221	BRL		ug/Kg	110
11141-16-5	Aroclor 1232	BRL		ug/Kg	110
53469-21-9	Aroclor 1242	BRL		ug/Kg	110
12672-29-6	Aroclor 1248	BRL		ug/Kg	110
11097-69-1	Aroclor 1254	BRL		ug/Kg	110
11096-82-5	Aroclor 1260	BRL		ug/Kg	110
37324-23-5	Aroclor 1262 †	BRL		ug/Kg	110
11100-14-4	Aroclor 1268 †	BRL		ug/Kg	110

QC Surrogate Compound		Spiked	Measured	Recovery	QC Limits
First Column	Tetrachloro- <i>m</i> -xylene	19	17	<b>91</b> %	30 - 150 %
	Decachlorobiphenyl	19	19	<b>97</b> %	30 - 150 %
Second Column	Tetrachloro- <i>m</i> -xylene	19	22	<b>116</b> %	30 - 150 %
	Decachlorobiphenyl	19	13	<b>69</b> %	30 - 150 %

**Method Reference:** Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).  
 Sample extraction performed by EPA Method 3545. Cleanup performed by EPA Method 3660B and EPA Method 3665A.  
 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.  
 † Non-target analyte. Result is based on a single mid-range calibration standard.

## Project Narrative

Project: **14680**  
Client: **Environmental Health & Engineering, Inc.**

Lab ID: **99937**  
Received: **10-12-06 18:00**

### A. Documentation and Client Communication

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

- 1 . Sample 99937-04 was reported as '80535', per Will Wade, 10-16-06.
- 2 . Analysis for sample identified as '80584' by EPA 8082 was cancelled, due to laboratory error as discussed with client.

### 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 . EPA 8082 Non-conformance: Sample 99937-02 and -31. Sample did not have measureable surrogate recoveries due to required sample dilution.
- 2 . EPA 8082 Note: Samples 99937-02,-05,-16, and -17. Sample were diluted prior to analysis. Dilution was required to keep all target analytes within calibration.

# GROUNDWATER ANALYTICAL

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

## CHAIN-OF-CUSTODY RECORD AND WORK ORDER

No 213142

Project Name:

Firm:

EHE

Project Number:

14680

Address:

60 Wells Ave

Sampler Name:

K. Myer / W. Wade

City / State / Zip:

Newton, MA 02459

Project Manager:

Max Chang

### TURNAROUND

☒ STANDARD (10 Business Days)

☐ PRIORITY (5 Business Days)

☐ RUSH (RAN- Rush requires Rush Authorization Number)

☒ Please Email to: [w.wade@ehelab.com](mailto:w.wade@ehelab.com)

☐ Please FAX to:

### BILLING

☒ Purchase Order No.: 997573

☐ Third Party Billing:

☐ GWA Quote:

### ANALYSIS REQUEST

Volatiles

☐ TIC Search

☐ GC/MS

☐ GC/MS

☐ GC/MS

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Metals

☐ Dissolved

☐ Total

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Haz. Waste

☐ RCRA

☐ CERCLA

☐ EPCRA

☐ TSCA

☐ FIFRA

☐ SDWA

☐ DDT

☐ PCBs

☐ PAHs

☐ BTEX

☐ VOCs

☐ SVOCs

☐ Pesticides

☐ Herbicides

☐ Fungicides

☐ Insecticides

☐ Rodenticides

☐ Antifungals

☐ Antiparasitics

☐ Anticancer

☐ Antibiotics

☐ Antivirals

☐ Antifolates

☐ Antimetabolites

☐ Anticoagulants

☐ Antithrombotics

☐ Antidiarrheals

☐ Antispasmodics

☐ Anticholinergics

☐ Antihistamines

☐ Anesthetics

☐ Sedatives

☐ Tranquilizers

☐ Hypnotics

☐ Antipsychotics

☐ Antidepressants

☐ Anticonvulsants

☐ Antiepileptics

☐ Anticancer

☐ Antivirals

☐ Antifolates

☐ Antimetabolites

☐ Anticoagulants

☐ Antithrombotics

☐ Antidiarrheals

☐ Antispasmodics

☐ Anticholinergics

General Chemistry

☐ pH

☐ Conductivity

☐ Dissolved Oxygen

☐ Turbidity

☐ Hardness

☐ Total Solids

☐ Total Suspended Solids

☐ Total Dissolved Solids

☐ Total Phosphorus

☐ Total Nitrogen

☐ Ammonia

☐ Nitrate

☐ Nitrite

☐ Chloride

☐ Fluoride

☐ Sulfate

☐ Calcium

☐ Magnesium

☐ Potassium

☐ Sodium

☐ Iron

☐ Copper

☐ Zinc

☐ Manganese

☐ Barium

☐ Strontium

☐ Lead

☐ Cadmium

☐ Chromium

☐ Cobalt

☐ Nickel

☐ Silver

☐ Tin

☐ Antimony

☐ Arsenic

☐ Bismuth

☐ Molybdenum

☐ Vanadium

☐ Selenium

☐ Tellurium

☐ Iodine

☐ Bromine

☐ Fluorine

☐ Chlorine

☐ Sulfur

☐ Phosphorus

☐ Nitrogen

Options

☐ SWWA

☐ NPDES

☐ RCRA

☐ CERCLA

☐ EPCRA

☐ TSCA

☐ FIFRA

☐ SDWA

☐ DDT

☐ PCBs

☐ PAHs

☐ BTEX

☐ VOCs

☐ SVOCs

☐ Pesticides

☐ Herbicides

☐ Fungicides

☐ Insecticides

☐ Rodenticides

☐ Antifungals

☐ Antiparasitics

☐ Anticancer

☐ Antibiotics

☐ Antivirals

☐ Antifolates

☐ Antimetabolites

☐ Anticoagulants

☐ Antithrombotics

☐ Antidiarrheals

☐ Antispasmodics

☐ Anticholinergics

☐ Anesthetics

☐ Sedatives

☐ Tranquilizers

☐ Hypnotics

☐ Antipsychotics

☐ Antidepressants

☐ Anticonvulsants

☐ Antiepileptics

☐ Anticancer

☐ Antivirals

☐ Antifolates

☐ Antimetabolites

☐ Anticoagulants

☐ Antithrombotics

☐ Antidiarrheals

☐ Antispasmodics

Preservation

☐ No

☐ Yes

☐ Ice

☐ Sodium Borate

☐ Methanol

☐ NaOH

☐ H<sub>2</sub>O

☐ HNO<sub>3</sub>

☐ HCl

☐ 100% Nitric

☐ 100% Sulfuric







## 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.



**Quality Control Report  
Laboratory Control Samples**

Category:	<b>EPA 8082</b>	LCS	Instrument ID:	<b>GC-13 Agilent 6890</b>	LCSD	Instrument ID:	<b>GC-13 Agilent 6890</b>
QC Batch ID:	<b>PB-2619-P</b>		Extracted:	<b>10-15-06 09:30</b>		Extracted:	<b>10-15-06 09:30</b>
Matrix:	<b>Soil</b>		Cleaned Up:	<b>10-16-06 15:00</b>		Cleaned Up:	<b>10-16-06 15:00</b>
Units:	<b>ug/Kg</b>		Analyzed:	<b>10-16-06 22:15</b>		Analyzed:	<b>10-16-06 22:39</b>
			Analyst:	<b>CRL</b>		Analyst:	<b>CRL</b>

CAS Number	Analyte	LCS					LCS Duplicate								QC Limits	
		Spiked	Measured		Recovery		Spiked	Measured		Recovery		RPD				
			1st Col	2nd Col	1st Col	2nd Col		1st Col	2nd Col	1st Col	2nd Col	1st Col	2nd Col	Spike	RPD	
12674-11-2	Aroclor 1016	330	300	290	91%	88%	330	310	290	93%	86%	2 %	3 %	40 - 140%	30 %	
11096-82-5	Aroclor 1260	330	310	290	94%	88%	330	330	310	100%	93%	5 %	5 %	40 - 140%	30 %	

QC Surrogate Compound	Surrogate Recovery										QC Limits	
Tetrachloro- <i>m</i> -xylene	13	11	11	80%	80%	13	11	11	83%	82%	30 - 150 %	
Decachlorobiphenyl	13	13	12	95%	87%	13	13	12	101%	90%	30 - 150 %	

**Method Reference:** Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).  
Sample extraction performed by EPA Method 3545. Cleanup performed by EPA Method 3660B and EPA Method 3665A.

**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.

## Quality Control Report Method Blank

Category: **EPA Method 8082**  
QC Batch ID: **PB-2619-P**  
Matrix: **Soil**

Instrument ID: **GC-13 Agilent 6890**  
Extracted: **10-15-06 09:30**  
Cleaned Up: **10-16-06 15:00**  
Analyzed: **10-16-06 21:52**  
Analyst: **CRL**

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
12674-11-2	Aroclor 1016	BRL		ug/Kg	80
11104-28-2	Aroclor 1221	BRL		ug/Kg	80
11141-16-5	Aroclor 1232	BRL		ug/Kg	80
53469-21-9	Aroclor 1242	BRL		ug/Kg	80
12672-29-6	Aroclor 1248	BRL		ug/Kg	80
11097-69-1	Aroclor 1254	BRL		ug/Kg	80
11096-82-5	Aroclor 1260	BRL		ug/Kg	80
37324-23-5	Aroclor 1262 <sup>†</sup>	BRL		ug/Kg	80
11100-14-4	Aroclor 1268 <sup>†</sup>	BRL		ug/Kg	80

QC Surrogate Compound		Spiked	Measured	Recovery	QC Limits
First Column	Tetrachloro- <i>m</i> -xylene	13	11	<b>84</b> %	30 - 150 %
	Decachlorobiphenyl	13	13	<b>96</b> %	30 - 150 %
Second Column	Tetrachloro- <i>m</i> -xylene	13	12	<b>87</b> %	30 - 150 %
	Decachlorobiphenyl	13	11	<b>86</b> %	30 - 150 %

**Method Reference:** Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).  
Sample extraction performed by EPA Method 3545. Cleanup performed by EPA Method 3660B and EPA Method 3665A.

**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.  
<sup>†</sup> Non-target analyte. Result is based on a single mid-range calibration standard.

## Quality Control Report Laboratory Control Samples

<b>Category:</b> EPA 8082 <b>QC Batch ID:</b> PB-2620-P <b>Matrix:</b> Soil <b>Units:</b> ug/Kg	<b>LCS</b> <b>Instrument ID:</b> GC-13 Agilent 6890 <b>Extracted:</b> 10-16-06 10:00 <b>Cleaned Up:</b> 10-16-06 15:00 <b>Analyzed:</b> 10-16-06 23:50 <b>Analyst:</b> CRL	<b>LCSD</b> <b>Instrument ID:</b> GC-13 Agilent 6890 <b>Extracted:</b> 10-16-06 10:00 <b>Cleaned Up:</b> 10-16-06 15:00 <b>Analyzed:</b> 10-17-06 00:14 <b>Analyst:</b> CRL
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CAS Number	Analyte	LCS					LCS Duplicate								QC Limits	
		Spiked	Measured		Recovery		Spiked	Measured		Recovery		RPD				
			1st Col	2nd Col	1st Col	2nd Col		1st Col	2nd Col	1st Col	2nd Col	1st Col	2nd Col	Spike	RPD	
12674-11-2	Aroclor 1016	330	270	300	82%	91%	330	290	260	86%	78%	5 %	15 %	40 - 140%	30 %	
11096-82-5	Aroclor 1260	330	320	310	96%	93%	330	300	280	91%	83%	5 %	11 %	40 - 140%	30 %	

QC Surrogate Compound	Surrogate Recovery										QC Limits	
Tetrachloro- <i>m</i> -xylene	13	9.4	9.4	71%	71%	13	10	9.8	75%	74%	30 - 150 %	
Decachlorobiphenyl	13	13	12	99%	92%	13	12	11	91%	82%	30 - 150 %	

**Method Reference:** Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).  
 Sample extraction performed by EPA Method 3545. Cleanup performed by EPA Method 3660B and EPA Method 3665A.

**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.

## Quality Control Report Method Blank

Category: **EPA Method 8082**  
QC Batch ID: **PB-2620-P**  
Matrix: **Soil**

Instrument ID: **GC-13 Agilent 6890**  
Extracted: **10-16-06 10:00**  
Cleaned Up: **10-16-06 15:00**  
Analyzed: **10-16-06 23:26**  
Analyst: **CRL**

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
12674-11-2	Aroclor 1016	BRL		ug/Kg	80
11104-28-2	Aroclor 1221	BRL		ug/Kg	80
11141-16-5	Aroclor 1232	BRL		ug/Kg	80
53469-21-9	Aroclor 1242	BRL		ug/Kg	80
12672-29-6	Aroclor 1248	BRL		ug/Kg	80
11097-69-1	Aroclor 1254	BRL		ug/Kg	80
11096-82-5	Aroclor 1260	BRL		ug/Kg	80
37324-23-5	Aroclor 1262 <sup>†</sup>	BRL		ug/Kg	80
11100-14-4	Aroclor 1268 <sup>†</sup>	BRL		ug/Kg	80

QC Surrogate Compound		Spiked	Measured	Recovery	QC Limits
First Column	Tetrachloro- <i>m</i> -xylene	13	11	<b>80</b> %	30 - 150 %
	Decachlorobiphenyl	13	13	<b>98</b> %	30 - 150 %
Second Column	Tetrachloro- <i>m</i> -xylene	13	11	<b>82</b> %	30 - 150 %
	Decachlorobiphenyl	13	12	<b>88</b> %	30 - 150 %

**Method Reference:** Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).  
Sample extraction performed by EPA Method 3545. Cleanup performed by EPA Method 3660B and EPA Method 3665A.

**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.  
<sup>†</sup> Non-target analyte. Result is based on a single mid-range calibration standard.

**Quality Control Report  
Laboratory Control Samples**

Category:	<b>EPA 8082</b>	LCS	Instrument ID:	<b>GC-13 Agilent 6890</b>	LCSD	Instrument ID:	<b>GC-13 Agilent 6890</b>
QC Batch ID:	<b>PB-2621-P</b>		Extracted:	<b>10-17-06 14:00</b>		Extracted:	<b>10-17-06 14:00</b>
Matrix:	<b>Soil</b>		Cleaned Up:	<b>10-23-06 07:00</b>		Cleaned Up:	<b>10-23-06 07:00</b>
Units:	<b>ug/Kg</b>		Analyzed:	<b>10-23-06 20:05</b>		Analyzed:	<b>10-23-06 20:29</b>
			Analyst:	<b>CRL</b>		Analyst:	<b>CRL</b>

CAS Number	Analyte	LCS					LCS Duplicate								QC Limits	
		Spiked	Measured		Recovery		Spiked	Measured		Recovery		RPD				
			1st Col	2nd Col	1st Col	2nd Col		1st Col	2nd Col	1st Col	2nd Col	1st Col	2nd Col	Spike	RPD	
12674-11-2	Aroclor 1016	330	330	320	98%	97%	330	290	280	88%	84%	11 %	14 %	40 - 140%	30 %	
11096-82-5	Aroclor 1260	330	340	320	103%	96%	330	330	310	100%	93%	3 %	3 %	40 - 140%	30 %	
QC Surrogate Compound		Surrogate Recovery												QC Limits		
Tetrachloro- <i>m</i> -xylene		13	12	12	90%	91%	13	10	10	75%	75%	30 - 150 %				
Decachlorobiphenyl		13	13	12	100%	93%	13	13	12	97%	90%	30 - 150 %				

**Method Reference:** Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).  
Sample extraction performed by EPA Method 3545. Cleanup performed by EPA Method 3660B and EPA Method 3665A.

**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.

## Quality Control Report Method Blank

Category: **EPA Method 8082**  
QC Batch ID: **PB-2621-P**  
Matrix: **Soil**

Instrument ID: **GC-13 Agilent 6890**  
Extracted: **10-17-06 14:00**  
Cleaned Up: **10-23-06 07:00**  
Analyzed: **10-23-06 19:42**  
Analyst: **CRL**

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
12674-11-2	Aroclor 1016	BRL		ug/Kg	80
11104-28-2	Aroclor 1221	BRL		ug/Kg	80
11141-16-5	Aroclor 1232	BRL		ug/Kg	80
53469-21-9	Aroclor 1242	BRL		ug/Kg	80
12672-29-6	Aroclor 1248	BRL		ug/Kg	80
11097-69-1	Aroclor 1254	BRL		ug/Kg	80
11096-82-5	Aroclor 1260	BRL		ug/Kg	80
37324-23-5	Aroclor 1262 <sup>†</sup>	BRL		ug/Kg	80
11100-14-4	Aroclor 1268 <sup>†</sup>	BRL		ug/Kg	80

QC Surrogate Compound		Spiked	Measured	Recovery	QC Limits
First Column	Tetrachloro- <i>m</i> -xylene	13	12	<b>92</b> %	30 - 150 %
	Decachlorobiphenyl	13	13	<b>95</b> %	30 - 150 %
Second Column	Tetrachloro- <i>m</i> -xylene	13	12	<b>93</b> %	30 - 150 %
	Decachlorobiphenyl	13	11	<b>85</b> %	30 - 150 %

**Method Reference:** Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).  
Sample extraction performed by EPA Method 3545. Cleanup performed by EPA Method 3660B and EPA Method 3665A.

**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.  
<sup>†</sup> Non-target analyte. Result is based on a single mid-range calibration standard.

## 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](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](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>

**APPENDIX D**  
**MADEP TRANSMITTAL FORM**





**Massachusetts Department of Environmental Protection**  
*Bureau of Waste Site Cleanup*

**BWSC105**

**IMMEDIATE RESPONSE ACTION (IRA) TRANSMITTAL  
FORM** Pursuant to 310 CMR 40.0424 - 40.0427 (Subpart D)

Release Tracking Number

-

**A. RELEASE OR THREAT OF RELEASE LOCATION:**

1. Release Name/Location Aid: \_\_\_\_\_
2. Street Address: \_\_\_\_\_
3. City/Town: \_\_\_\_\_ 4. ZIP Code: \_\_\_\_\_
5. UTM Coordinates: a. UTM N: \_\_\_\_\_ b. UTM E: \_\_\_\_\_
- ☐ 6. Check here if a Tier Classification Submittal has been provided to DEP for this disposal site.  
☐ a. Tier IA ☐ b. Tier IB ☐ c. Tier IC ☐ d. Tier II
- ☐ 7. Check here if this location is Adequately Regulated, pursuant to 310 CMR 40.0110-0114. Specify Program (check one):  
☐ a. CERCLA ☐ b. HSWA Corrective Action ☐ c. Solid Waste Management  
☐ d. RCRA State Program (21C Facilities)

**B. THIS FORM IS BEING USED TO:** (check all that apply)

1. List Submittal Date of Initial IRA Written Plan (if previously submitted): \_\_\_\_\_  
(mm/dd/yyyy)
- ☐ 2. Submit an **Initial IRA Plan**.
- ☐ 3. Submit a **Modified IRA Plan** of a previously submitted written IRA Plan.
- ☐ 4. Submit an **Imminent Hazard Evaluation**. (check one)  
☐ a. An Imminent Hazard exists in connection with this Release or Threat of Release.  
☐ b. An Imminent Hazard does not exist in connection with this Release or Threat of Release.  
☐ c. It is unknown whether an Imminent Hazard exists in connection with this Release or Threat of Release, and further assessment activities will be undertaken.  
☐ d. It is unknown whether an Imminent Hazard exists in connection with this Release or Threat of Release. However, response actions will address those conditions that could pose an Imminent Hazard.
- ☐ 5. Submit a request to **Terminate an Active Remedial System or Response Action(s) Taken to Address an Imminent Hazard**.
- ☐ 6. Submit an **IRA Status Report**.
- ☐ 7. Submit a **Remedial Monitoring Report**. (This report can only be submitted through eDEP.)  
a. Type of Report: (check one) ☐ i. Initial Report ☐ ii. Interim Report ☐ iii. Final Report  
b. Frequency of Submittal: (check all that apply)  
☐ i. A Remedial Monitoring Report(s) submitted monthly to address an Imminent Hazard.  
☐ ii. A Remedial Monitoring Report(s) submitted monthly to address a Condition of Substantial Release Migration.  
☐ iii. A Remedial Monitoring Report(s) submitted concurrent with a IRA Status Report.  
c. Number of Remedial Systems and/or Monitoring Programs: \_\_\_\_\_

A separate BWSC105A, IRA Remedial Monitoring Report, must be filled out for each Remedial System and/or Monitoring Program addressed by this transmittal form.



**Massachusetts Department of Environmental Protection**  
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Release Tracking Number

-

**B. THIS FORM IS BEING USED TO (cont.):** (check all that apply)

- ☐ 8. Submit an **IRA Completion Statement**.
- ☐ a. Check here if future response actions addressing this Release or Threat of Release notification condition will be conducted as part of the Response Actions planned or ongoing at a Site that has already been Tier Classified under a different Release Tracking Number (RTN) . When linking RTNs, rescoring via the NRS is required if there is a reasonable likelihood that the addition of the new RTN(s) would change the classification of the site.

b. Provide Release Tracking Number of Tier Classified Site (Primary RTN):

-

These additional response actions must occur according to the deadlines applicable to the Primary RTN. Use the Primary RTN when making all future submittals for the site unless specifically relating to this Immediate Response Action.

- ☐ 9. Submit a **Revised IRA Completion Statement**.

**(All sections of this transmittal form must be filled out unless otherwise noted above)**

**C. RELEASE OR THREAT OF RELEASE CONDITIONS THAT WARRANT IRA:**

1. Identify Media Impacted and Receptors Affected: (check all that apply)

- ☐ a. Air ☐ b. Basement ☐ c. Critical Exposure Pathway ☐ d. Groundwater ☐ e. Residence  
☐ f. Paved Surface ☐ g. Private Well ☐ h. Public Water Supply ☐ i. School ☐ j. Sediments  
☐ k. Soil ☐ l. Storm Drain ☐ m. Surface Water ☐ n. Unknown ☐ o. Wetland ☐ p. Zone 2  
☐ q. Others Specify: \_\_\_\_\_

2. Identify Oils and Hazardous Materials Released: (check all that apply)

- ☐ a. Oils ☐ b. Chlorinated Solvents ☐ c. Heavy Metals  
☐ d. Others Specify: \_\_\_\_\_  
\_\_\_\_\_

**D. DESCRIPTION OF RESPONSE ACTIONS:** (check all that apply, for volumes list cumulative amounts)

- |  |   |
|--|---|
| <input type="checkbox"/> 1. Assessment and/or Monitoring Only                | <input type="checkbox"/> 2. Temporary Covers or Caps                        |
| <input type="checkbox"/> 3. Deployment of Absorbent or Containment Materials | <input type="checkbox"/> 4. Temporary Water Supplies                        |
| <input type="checkbox"/> 5. Structure Venting System                         | <input type="checkbox"/> 6. Temporary Evacuation or Relocation of Residents |
| <input type="checkbox"/> 7. Product or NAPL Recovery                         | <input type="checkbox"/> 8. Fencing and Sign Posting                        |
| <input type="checkbox"/> 9. Groundwater Treatment Systems                    | <input type="checkbox"/> 10. Soil Vapor Extraction                          |
| <input type="checkbox"/> 11. Bioremediation                                  | <input type="checkbox"/> 12. Air Sparging                                   |



**IMMEDIATE RESPONSE ACTION (IRA) TRANSMITTAL  
FORM**

Pursuant to 310 CMR 40.0424 - 40.0427 (Subpart D)

Release Tracking Number

-

**D. DESCRIPTION OF RESPONSE ACTIONS (cont.):** (check all that apply, for volumes list cumulative amounts)

☐ 13. Excavation of Contaminated Soils

☐ a. Re-use, Recycling or Treatment

☐ i. On Site Estimated volume in cubic yards \_\_\_\_\_

☐ ii. Off Site Estimated volume in cubic yards \_\_\_\_\_

    iia. Receiving Facility: \_\_\_\_\_ Town: \_\_\_\_\_ State: \_\_\_\_\_

    iib. Receiving Facility: \_\_\_\_\_ Town: \_\_\_\_\_ State: \_\_\_\_\_

    iii. Describe: \_\_\_\_\_

☐ b. Store

☐ i. On Site Estimated volume in cubic yards \_\_\_\_\_

☐ ii. Off Site Estimated volume in cubic yards \_\_\_\_\_

    iia. Receiving Facility: \_\_\_\_\_ Town: \_\_\_\_\_ State: \_\_\_\_\_

    iib. Receiving Facility: \_\_\_\_\_ Town: \_\_\_\_\_ State: \_\_\_\_\_

☐ c. Landfill

☐ i. Cover Estimated volume in cubic yards \_\_\_\_\_

Receiving Facility: \_\_\_\_\_ Town: \_\_\_\_\_ State: \_\_\_\_\_

☐ ii. Disposal Estimated volume in cubic yards \_\_\_\_\_

Receiving Facility: \_\_\_\_\_ Town: \_\_\_\_\_ State: \_\_\_\_\_

☐ 14. Removal of Drums, Tanks or Containers:

a. Describe Quantity and Amount: \_\_\_\_\_

b. Receiving Facility: \_\_\_\_\_ Town: \_\_\_\_\_ State: \_\_\_\_\_

c. Receiving Facility: \_\_\_\_\_ Town: \_\_\_\_\_ State: \_\_\_\_\_

☐ 15. Removal of Other Contaminated Media:

a. Specify Type and Volume: \_\_\_\_\_

b. Receiving Facility: \_\_\_\_\_ Town: \_\_\_\_\_ State: \_\_\_\_\_

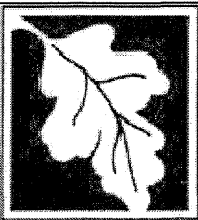
c. Receiving Facility: \_\_\_\_\_ Town: \_\_\_\_\_ State: \_\_\_\_\_

☐ 16. Other Response Actions:

Describe: \_\_\_\_\_

☐ 17. Use of Innovative Technologies:

Describe: \_\_\_\_\_



Massachusetts Department of Environmental Protection  
Bureau of Waste Site Cleanup

BWSC105

IMMEDIATE RESPONSE ACTION (IRA) TRANSMITTAL  
FORM Pursuant to 310 CMR 40.0424 - 40.0427 (Subpart D)

Release Tracking Number

1 - 16269

E. LSP SIGNATURE AND STAMP:

I attest under the pains and penalties of perjury that I have personally examined and am familiar with this transmittal form, including any and all documents accompanying this submittal. In my professional opinion and judgment based upon application of (i) the standard of care in 309 CMR 4.02(1), (ii) the applicable provisions of 309 CMR 4.02(2) and (3), and 309 CMR 4.03(2), and (iii) the provisions of 309 CMR 4.03(3), to the best of my knowledge, information and belief,

> if Section B of this form indicates that an **Immediate Response Action Plan** is being submitted, the response action(s) that is(are) the subject of this submittal (i) has (have) been developed in accordance with the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000, (ii) is(are) appropriate and reasonable to accomplish the purposes of such response action(s) as set forth in the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000 and (iii) complies(y) with the identified provisions of all orders, permits, and approvals identified in this submittal;

> if Section B of this form indicates that an **Imminent Hazard Evaluation** is being submitted, this Imminent Hazard Evaluation was developed in accordance with the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000, and the assessment activity(ies) undertaken to support this Imminent Hazard Evaluation comply(ies) with the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000;

> if Section B of this form indicates that an **Immediate Response Action Status Report** and/or a **Remedial Monitoring Report** is(are) being submitted, the response action(s) that is (are) the subject of this submittal (i) is (are) being implemented in accordance with the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000, (ii) is (are) appropriate and reasonable to accomplish the purposes of such response action(s) as set forth in the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000 and (iii) comply(ies) with the identified provisions of all orders, permits, and approvals identified in this submittal;

> if Section B of this form indicates that an **Immediate Response Action Completion Statement** or a request to **Terminate an Active Remedial System or Response Action(s) Taken to Address an Imminent Hazard** is being submitted, the response action(s) that is(are) the subject of this submittal (i) has (have) been developed and implemented in accordance with the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000, (ii) is(are) appropriate and reasonable to accomplish the purposes of such response action(s) as set forth in the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000 and (iii) comply(ies) with the identified provisions of all orders, permits, and approvals identified in this submittal.

I am aware that significant penalties may result, including, but not limited to, possible fines and imprisonment, if I submit information which I know to be false, inaccurate or materially incomplete.

1. LSP #:

7262

2. First Name: Eric

3. Last Name: Wood

4. Telephone: 603-437-8227

5. Ext.: \_\_\_\_\_

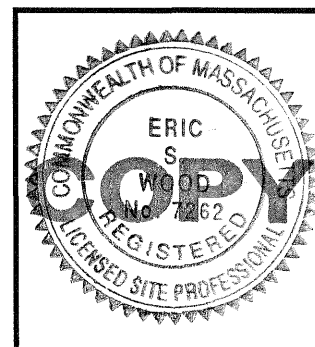
6. FAX: 603-437-0550

7. Signature: \_\_\_\_\_

8. Date:

11/15/2006  
(mm/dd/yyyy)

9. LSP Stamp:





**Massachusetts Department of Environmental Protection**  
*Bureau of Waste Site Cleanup*

**BWSC105**

**IMMEDIATE RESPONSE ACTION (IRA) TRANSMITTAL  
FORM** Pursuant to 310 CMR 40.0424 - 40.0427 (Subpart D)

Release Tracking Number

-

**F. PERSON UNDERTAKING IRA:**

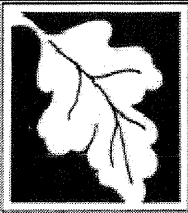
1. Check all that apply: ☐ a. change in contact name ☐ b. change of address ☐ c. change in the person undertaking response actions
2. Name of Organization: \_\_\_\_\_
3. Contact First Name: \_\_\_\_\_ 4. Last Name: \_\_\_\_\_
5. Street: \_\_\_\_\_ 6. Title: \_\_\_\_\_
7. City/Town: \_\_\_\_\_ 8. State: \_\_\_\_\_ 9. ZIP Code: \_\_\_\_\_
10. Telephone: \_\_\_\_\_ 11. Ext.: \_\_\_\_\_ 12. FAX: \_\_\_\_\_

**G. RELATIONSHIP TO RELEASE OR THREAT OF RELEASE OF PERSON UNDERTAKING IRA:**

- ☐ 1. RP or PRP ☐ a. Owner ☐ b. Operator ☐ c. Generator ☐ d. Transporter
- ☐ e. Other RP or PRP Specify: \_\_\_\_\_
- ☐ 2. Fiduciary, Secured Lender or Municipality with Exempt Status (as defined by M.G.L. c. 21E, s. 2)
- ☐ 3. Agency or Public Utility on a Right of Way (as defined by M.G.L. c. 21E, s. 5(j))
- ☐ 4. Any Other Person Undertaking IRA Specify Relationship: \_\_\_\_\_

**H. REQUIRED ATTACHMENT AND SUBMITTALS:**

- ☐ 1. Check here if any Remediation Waste, generated as a result of this IRA, will be stored, treated, managed, recycled or reused at the site following submission of the IRA Completion Statement. If this box is checked, you must submit one of the following plans, along with the appropriate transmittal form.
- ☐ a. A Release Abatement Measure (RAM) Plan (BWSC106) ☐ b. Phase IV Remedy Implementation Plan (BWSC108)
- ☐ 2. Check here if the Response Action(s) on which this opinion is based, if any, are (were) subject to any order(s), permit(s) and/or approval(s) issued by DEP or EPA. If the box is checked, you MUST attach a statement identifying the applicable provisions thereof.
- ☐ 3. Check here to certify that the Chief Municipal Officer and the Local Board of Health were notified of the implementation of an Immediate Response Action taken to control, prevent, abate or eliminate an Imminent Hazard.
- ☐ 4. Check here to certify that the Chief Municipal Officer and the Local Board of Health were notified of the submittal of a Completion Statement for an Immediate Response Action taken to control, prevent, abate or eliminate an Imminent Hazard.
- ☐ 5. Check here if any non-updatable information provided on this form is incorrect, e.g. Release Address/Location Aid. Send corrections to the DEP Regional Office.
- ☐ 6. Check here to certify that the LSP Opinion containing the material facts, data, and other information is attached.



Massachusetts Department of Environmental Protection  
Bureau of Waste Site Cleanup

BWSC105

**IMMEDIATE RESPONSE ACTION (IRA) TRANSMITTAL  
FORM** Pursuant to 310 CMR 40.0424 - 40.0427 (Subpart D)

Release Tracking Number

1 - 16269

**I. CERTIFICATION OF PERSON UNDERTAKING IRA:**

1. I, Brian Fitzpatrick, attest under the pains and penalties of perjury (i) that I have personally examined and am familiar with the information contained in this submittal, including any and all documents accompanying this transmittal form, (ii) that, based on my inquiry of those individuals immediately responsible for obtaining the information, the material information contained in this submittal is, to the best of my knowledge and belief, true, accurate and complete, and (iii) that I am fully authorized to make this attestation on behalf of the entity legally responsible for this submittal. I/the person or entity on whose behalf this submittal is made am/is aware that there are significant penalties, including, but not limited to, possible fines and imprisonment, for willfully submitting false, inaccurate, or incomplete information.

Environmental Management Services

2. By: [Signature]

Signature

3. Title: Program Head

4. For: University of Massachusetts

(Name of person or entity recorded in Section F)

5. Date: 11/15/2006

(mm/dd/yyyy)

☐ 6. Check here if the address of the person providing certification is different from address recorded in Section F.

7. Street: \_\_\_\_\_

8. City/Town: \_\_\_\_\_ 9. State: \_\_\_\_\_ 10. ZIP Code: \_\_\_\_\_

11. Telephone: \_\_\_\_\_ 12. Ext: \_\_\_\_\_ 13. FAX: \_\_\_\_\_

**YOU ARE SUBJECT TO AN ANNUAL COMPLIANCE ASSURANCE FEE OF UP TO \$10,000 PER  
BILLABLE YEAR FOR THIS DISPOSAL SITE. YOU MUST LEGIBLY COMPLETE ALL RELEVANT  
SECTIONS OF THIS FORM OR DEP MAY RETURN THE DOCUMENT AS INCOMPLETE. IF YOU  
SUBMIT AN INCOMPLETE FORM, YOU MAY BE PENALIZED FOR MISSING A REQUIRED DEADLINE.**

Date Stamp (DEP USE ONLY:)

