



December 18, 2013

Ms. Kimberly Tisa, PCB Coordinator  
U.S. Environmental Protection Agency Region 1  
5 Post Office Square – Suite 100  
Boston, Massachusetts 02109-3912

Re: Long-Term Monitoring and Maintenance Implementation – 2013 Monitoring Results  
University of Massachusetts, Amherst, Massachusetts

Dear Ms. Tisa:

This report has been prepared to document the results from the 2013 long term monitoring activities conducted at the following buildings on the University of Massachusetts (UMass) Amherst Campus:

- Webster House – The MMIP was submitted on January 5, 2012 in accordance with Condition 16 of the EPA's PCB Decontamination and Disposal Approval under 40 CFR 761.61 (c) and 761.79 (h) dated July 4, 2011;
- Tobin Hall Deck – The Monitoring and Maintenance Implementation Plan (MMIP) was submitted on March 13, 2012 in accordance with Condition 8 of the United States Environmental Protection Agency's (EPA) PCB Risk-Based Decontamination and Disposal Approval under 40 CFR 761.61 (c) and 761.79 (h) dated February 28, 2012; monitoring activities were also conducted at those areas described in the September 2012 PCB Remediation Plan Addendum;
- Southwest Concourse – The MMIP was submitted on December 29, 2010 in accordance with Condition 13 of the EPA's Southwest Residential Area Concourse PCB Cleanup and Disposal Approval under 40 CFR 761.61 (a) and (c) and 761.79 (h) dated August 30, 2010; monitoring activities were also conducted at those areas described in the PCB Remediation Plan Amendment dated May 9, 2011;
- Field and Grayson Houses – The MMIP was submitted on April 24, 2012 as part of the PCB Remediation Plan/Close Out Document for Field and Grayson House by ATC Associates, Inc.; and
- Dubois Library Elevator Lobbies – The MMIP was submitted on March 29, 2013 in accordance with Condition 12 of the EPA's Dubois Library PCB Cleanup and Disposal Approval under 40 CFR 761.61(c), 761.62, and 761.79(h) dated April 8, 2010.

As previously discussed, the activities conducted in support of the monitoring and maintenance activities for these projects are being submitted under a single cover to streamline reporting and review of these activities.

An overall summary of the 2013 activities is provided on the following pages with details of the specific projects included in individual project reports provided as attachments to this letter.

## **MONITORING AND MAINTENANCE IMPLEMENTATION PLAN**

For each of the projects included in this report, certain building materials formerly in direct contact with or adjacent to former PCB caulking were encapsulated using liquid coatings and/or physical barriers (e.g., sheet metal cladding) as a risk-based management approach under 40 CFR 761.61(c) where it was determined that physical removal was an infeasible remedial approach. This included both porous



masonry surfaces in former direct contact with the caulking (i.e., coated) as well as a limited extent of masonry materials beyond the former joints.

Components of each MMIP including subsequent revisions based on the monitoring results and maintenance activities completed to date include the following:

- Visual inspections of the encapsulated surfaces will be performed to look for signs of encapsulant deterioration, breakages, wear, and/or signs of weathering or disturbance of the replacement caulking or other secondary physical barriers.
- Surface wipe samples of the encapsulated surfaces will be collected using a hexane-soaked wipe following the standard wipe test procedures described in 40 CFR 761.123.
- Indoor air monitoring will be conducted at the Dubois Library elevator lobbies in accordance with US EPA Compendium Method TO-10A "Determination of Pesticides and Polychlorinated Biphenyls in Ambient Air Using Low Volume Polyurethane Foam (PUF) Sampling Followed by Gas Chromatographic/Multi-Detector Detections (GC/MD)".
- Monitoring results will be compared to the evaluation criteria to determine the need and type of corrective actions.
- A monitoring report will be prepared and submitted to EPA to document the results of the visual inspections and sampling activities, as well as to provide any recommendations for corrective measures based on the results of the visual inspections or laboratory analytical results. The report will also include a statement on the continued effectiveness of the encapsulants and/or secondary physical barriers; and will include any proposed modifications to the MMIP.

### **MONITORING ACTIVITIES –2013**

Woodard & Curran performed the following monitoring activities between September and October 2013:

- Webster House – A visual inspection of the encapsulated interior elevator lobby walls and the metal cladding/window frames on the northwest building elevation was performed and three verification wipe samples collected from the interior lobby walls;
- Tobin Hall Deck – A visual inspection of the encapsulated concrete pillar surface was performed and two verification wipe samples collected;
- Southwest Concourse – A visual inspection of encapsulated exterior concrete building walls, retaining walls, and concrete within the pedestrian tunnel was conducted and 19 verification wipe samples collected from representative locations throughout the project area;
- Field and Grayson Houses – A visual inspection of encapsulated concrete parapet wall materials at the roofline of the buildings was performed; and
- Dubois Library – A visual inspection of encapsulated interior concrete building walls, ceiling, and CMU block in-fills in the elevator lobbies was conducted and seven verification wipe samples were collected from the lobby areas. In addition, nine indoor air samples were collected during each of the two rounds of indoor air sampling conducted in the lobbies (April and October).



## RESULTS

A summary of the results of the 2013 monitoring activities for each building is included in Attachments 1 through 5 to this letter. A summary of the verification wipe sample results is presented on Table 1. Complete analytical laboratory reports, along with a data validation summary, are provided in Attachment 6.

The 2013 inspection and sampling results indicate that the liquid coatings and secondary barriers continue to be effective containment barriers to residual concentrations of PCBs in the masonry.

As described in Attachments 2 and 3, relatively minor flaking and peeling were observed in the clear acrylic coatings applied to select concrete surfaces at the Tobin Hall Deck and in the Southwest Concourse Area. Wipe samples collected from areas of observed flaking and peeling indicate that PCBs were not detected above the target level of  $1.0 \mu\text{g}/100 \text{ cm}^2$ .

The next monitoring events will be performed in the summer/fall 2014 in accordance with the individual project MMIPs except as noted in the attachments (e.g., Seasonal evaluation of indoor air levels at the Dubois Library). At this time, it is anticipated that the following buildings will be added to the inspection/monitoring event:

- Sylvan Residential Area (Brown, Cashin, McNamara) – exterior façade
- Orchard Hill (Field and Grayson) – interior and exterior masonry coatings and barriers

If you have any comments, questions, or require further information, please do not hesitate to e-mail or call me at the number listed above.

Sincerely,

WOODARD & CURRAN INC.

Jeffrey A. Hamel, LSP, LEP  
Senior Vice President

cc: Terri Wolejko, UMass EH&S

Enclosures: Table 1 – Summary of Verification Wipe Sample Results  
Attachment 1 – Webster House Windows  
Attachment 2 – Tobin Hall Deck  
Attachment 3 – Southwest Concourse  
Attachment 4 – Field and Grayson Houses Parapet Wall  
Attachment 5 – Dubois Library Elevator Lobbies  
Attachment 6 – Data Validation Summary and Analytical Laboratory Reports

Table 1  
Summary of Verification Wipes for Long Term Monitoring  
University of Massachusetts Amherst

Active Monitoring Projects								
Coating/Area	Surface	2012 Verification Wipes			2013 Verification Wipes			
		Sample Date	Sample ID	Total PCBs (ug/wipe)	Sample Date	Sample ID	Total PCBs (ug/wipe)	Comment
Webster House - Elevator Hall Interior Windows								
Sika 550W	Interior CMU Block Walls	8/9/2012	LTM-WH-VWC-001	< 0.20	--	--	--	
		8/9/2012	LTM-WH-VWC-002	< 0.20	--	--	--	
		8/9/2012	LTM-WH-VWC-003	< 0.20	--	--	--	
		--	--	--	9/3/2013	LTWH-VWC-001	< 0.20	
		--	--	--	9/3/2013	LTWH-VWC-002	< 0.20	
		--	--	--	9/3/2013	LTWH-VWC-003	< 0.20	
Tobin Hall - Exterior Deck								
Sika62 Sikagard Epoxy	Concrete Pillar - South	--	--	--	10/10/2013	LTM-TH-VWC-025	< 0.20	Remediation activities for joint at pillars performed Fall 2012.
Sika 670 Clear Coat	Concrete Pillar - North	--	--	--	10/10/2013	LTM-TH-VWC-026	< 0.20	Remediation activities for joint at pillars performed Fall 2012. 2013 sample collected from area of observed flaking/peeling.
	Concrete Façade	8/9/2012	LTM-TH-VWC-004	< 0.20	--	--	--	Encapsulated concrete façade surfaces inaccessible for 2013 inspection.
Southwest Concourse - Epoxy Coatings								
Berkshire Plaza	Building Wall	8/15/2012	LTM-SWC-VWC-015	< 0.20	--	--	--	
		--	--	--	10/10/2013	LTM-SWC-VWC-033	< 0.20	
	Retaining Wall	8/15/2012	LTM-SWC-VWC-012	< 0.20	--	--	--	
		--	--	--	10/30/2013	LTM-SWC-VWC-046	< 0.20	
	Stairs	8/15/2012	LTM-SWC-VWC-013	< 0.20	--	--	--	
		--	--	--	10/10/2013	LTM-SWC-VWC-035	< 0.20	
Hampden Plaza	Building Wall	8/15/2012	LTM-SWC-VWC-005	< 0.20	--	--	--	
		--	--	--	10/10/2013	LTM-SWC-VWC-040	< 0.20	
	Retaining Wall	8/15/2012	LTM-SWC-VWC-007	< 0.20	--	--	--	
		--	--	--	10/10/2013	LTM-SWC-VWC-041	0.46	
	Stairs	8/15/2012	LTM-SWC-VWC-009	<0.20	--	--	--	
		--	--	--	10/10/2013	LTM-SWC-VWC-038	< 0.20	
Washington Plaza	Building Wall	8/20/2012	LTM-SWC-VWC-017	0.24	--	--	--	
		--	--	--	10/10/2013	LTM-SWC-VWC-028	< 0.20	
	Retaining Wall	--	--	--	--	--	--	No epoxy observed on retaining walls above grade within Washington Plaza therefore sample location not warranted.
Stairs	8/15/2012	LTM-SWC-VWC-020	1.4	10/10/2013	LTM-SWC-VWC-027	2.4	2013 sample location coincides with 2012 sample.	
Southwest Concourse - Acrylic Coatings								
Berkshire Plaza	Building Wall	8/15/2012	LTM-SWC-VWC-016	< 0.20	--	--	--	
		--	--	--	10/10/2013	LTM-SWC-VWC-036	0.34	2013 sample collected from area of observed flaking/peeling and efflorescence
	Retaining Wall	8/15/2012	LTM-SWC-VWC-011	< 0.20	--	--	--	
		--	--	--	10/10/2013	LTM-SWC-VWC-037	< 0.20	
	Stairs	8/15/2012	LTM-SWC-VWC-014	< 0.20	--	--	--	
		--	--	--	10/10/2013	LTM-SWC-VWC-032	< 0.20	
Hampden Plaza	Building Wall	8/15/2012	LTM-SWC-VWC-006	< 0.20	--	--	--	
		--	--	--	10/10/2013	LTM-SWC-VWC-039	< 0.20	
	Retaining Wall	8/15/2012	LTM-SWC-VWC-008	< 0.20	--	--	--	
		--	--	--	10/10/2013	LTM-SWC-VWC-042	< 0.20	2013 sample collected from area of observed flaking/peeling
	Stairs	8/15/2012	LTM-SWC-VWC-010	< 0.20	--	--	--	
		--	--	--	10/16/2013	LTM-SWC-VWC-045	< 0.20	

Table 1  
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University of Massachusetts Amherst

Active Monitoring Projects								
Coating/Area	Surface	2012 Verification Wipes			2013 Verification Wipes			
		Sample Date	Sample ID	Total PCBs (ug/wipe)	Sample Date	Sample ID	Total PCBs (ug/wipe)	Comment
Washington Plaza	Building Wall	8/15/2012	LTM-SWC-VWC-018	< 0.20	--	--	--	
		--	--	--	10/10/2013	LTM-SWC-VWC-031	< 0.20	
	Retaining Wall	8/15/2012	LTM-SWC-VWC-019	< 0.20	--	--	--	
		--	--	--	10/10/2013	LTM-SWC-VWC-029	< 0.20	2013 sample collected from area of observed flaking/peeling
	Stairs	8/15/2012	LTM-SWC-VWC-021	< 0.20	--	--	--	
		--	--	--	10/10/2013	LTM-SWC-VWC-030	< 0.20	
Southwest Concourse - Pedestrian Tunnel								
Sika 550W White	Expansion Joint Caulking	8/15/2012	LTM-SWC-VWC-022	1.6	10/10/2013	LTM-SWC-VWC-043	2.7	2013 sample location coincides with 2012 sample.
	Adjacent Concrete	8/15/2012	LTM-SWC-VWC-023	< 0.20	--	--	--	
		--	--	--	10/10/2013	LTM-SWC-VWC-044	< 0.20	
Dubois Library - Elevator Lobbies								
Sikagard 55W and Acrylic Latex Paint	CMU Block In-Fill				10/11/2013	DL-23E0-VWC-146	< 0.20	
					10/11/2013	DL-19E0-VWC-149	< 0.20	
					10/11/2013	DL-10E0-VWC-151	0.49	
	Structural Concrete Lobby Walls				10/11/2013	DL-4E0-VWC-152	0.49	1.5 inches from joint
					10/11/2013	DL-16E5-VWC-150	< 0.20	10 inches from joint
					10/11/2013	DL-21E3-VWC-147	< 0.20	10 inches from joint
					10/11/2013	DL-20E3-VWC-148	< 0.20	
	Ceiling							

Notes:

Samples submitted to ConTest Analytical Laboratory of East Longmeadow, Mass under the standard chain of custody.

Samples were analyzed for PCBs by EPA method 8082 with 3540C Soxhlet extraction.

Wipe samples were collected in accordance with the standard wipe test procedures of 40 CFR 761.123.



## **Attachment 1 – Webster House Windows**

**Attachment 1 – Webster House  
Long-Term Maintenance and Monitoring Program  
In-Place Management of PCB Impacted Materials  
UMass Amherst**

**Location:** Orchard Hill Residential Area

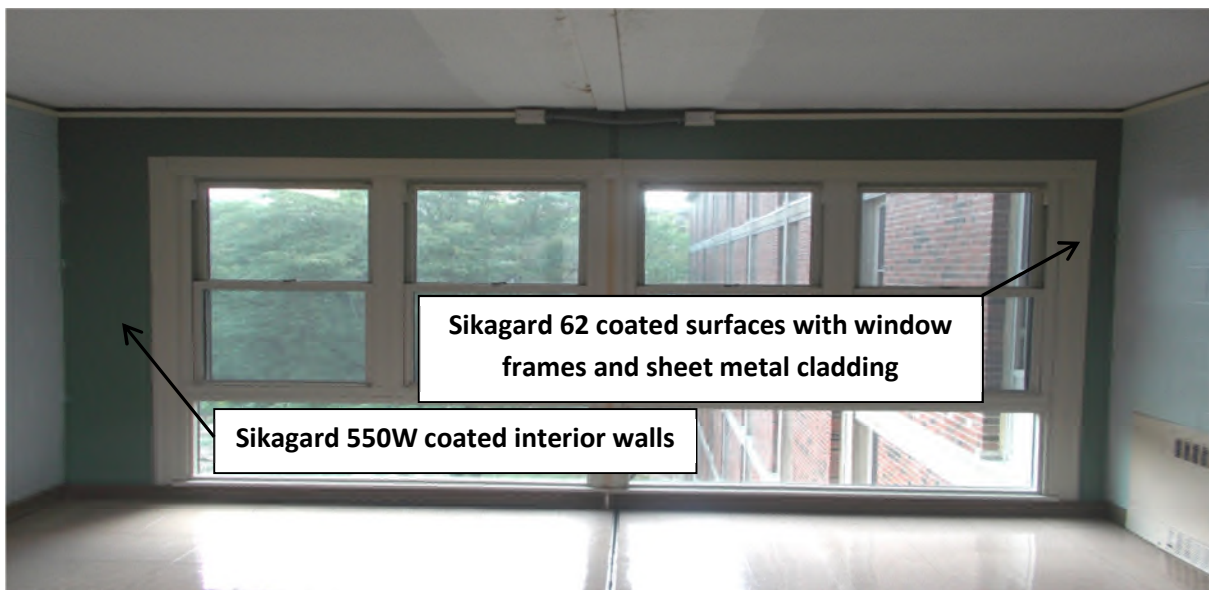
**Building:** Webster House

**Summary of Remedial Areas**

*In-Place Management:* Residual PCBs are being managed in place at concentrations > 1 ppm following window replacement activities at the following locations:

- Elevator Lobby Interior Walls (maximum residual PCB concentration in masonry 7.2 ppm) – Concrete materials formerly in direct contact with caulking and to a distance of four inches from the caulked joint were encapsulated with two coats of grey Sikagard 62 epoxy coating and subsequently covered by the newly installed metal window frames and sheet metal cladding. Remaining interior wall materials to the first 90-degree angle were encapsulated with two coats of green Sikagard 550W acrylic coating.
- Northwest Elevation Exterior Concrete Ceiling (maximum residual PCB concentration in masonry 4.3 ppm) – Materials formerly in direct contact with caulking along 100 linear feet (l.f.) of ribbon type windows on the northwest building elevation were encapsulated with two coats of grey Sikagard 62 epoxy coating and subsequently covered by the newly installed metal window frames.

The locations of the encapsulated surfaces are depicted on Figure 1. The encapsulated surfaces associated with the elevator lobby windows are shown in the photo below.



**Elevator Lobby Walls**

*Baseline Verification Data Summary:* Following remediation activities, baseline verification wipe samples were collected as follows:

- Elevator Hall Interior Walls:
  - Sikagard 62 epoxy Coated Materials – In July 2011, prior to installation of the window frames and sheet metal cladding, six verification wipe samples were collected from encapsulated surfaces. Analytical results reported PCBs as non-detect (< 0.20 µg/100 cm<sup>2</sup>) in the six samples collected.
  - Sikagard 550W Coated Materials – Six initial baseline wipe samples were collected in November 2011. Analytical results reported PCBs as non-detect (< 0.20 µg/100 cm<sup>2</sup>) in all six samples.

**Attachment 1 – Webster House  
Long-Term Maintenance and Monitoring Program  
In-Place Management of PCB Impacted Materials  
UMass Amherst**

- Northwest Elevation Exterior Concrete Ceiling Direct Contact Materials: Prior to installation of the sheet metal cladding, three verification wipe samples were collected from encapsulated surfaces. Analytical results reported PCBs as non-detect ( $< 0.20 \mu\text{g}/100 \text{ cm}^2$ ) in the three samples collected.

**Monitoring and Maintenance Implementation Plan**

The Monitoring and Maintenance Implementation Plan (MMIP) was submitted to EPA in January 2012 and included visual inspections and verification wipe sampling.

Based on the baseline sample results (all non-detect for PCBs) and encapsulated areas subsequently covered by window frames and sheet metal cladding associated with the new window installation, the only accessible coating is in areas at the interior CMU block walls in the elevator lobbies. Surface wipe samples of these encapsulated (Sikagard 550W) interior CMU block walls will be collected using a hexane-soaked wipe following the standard wipe test procedures described in 40 CFR 761.123. A total of three samples will be collected from randomly selected locations as follows:

- The specific floor and the side of the elevator hall to be sampled will be randomly selected using a random number generator;
- The location of the wipe sample on the joint will be selected by randomly selecting a number between 0 and 25 (representing the two 6.5 foot long vertical joints and the upper 12 foot long horizontal joint) with the zero point assigned to the bottom of the left vertical joint and proceeding clockwise around the window (i.e., 25 would be assigned to the bottom of the right vertical joint); and
- The distance of the wipe sample from the sheet metal cladding will then be selected by randomly selecting a number from zero to the total distance, in inches, to the first 90-degree angle.

**Monitoring Activities – August 2012**

Monitoring activities were conducted on August 9, 2012. No signs of damage were observed to the sheet metal cladding and window frames on the northwest building elevation. Sheet metal cladding and liquid coatings in the elevator lobby areas were observed to be in good condition with no signs of wear or damage. Wipe samples were collected from the coated CMU block walls on the 3<sup>rd</sup>, 5<sup>th</sup>, and 7<sup>th</sup> floors. Analytical results were all non-detect as presented in the table below.

Date of Inspection	Visual Inspection Results	Wipe Sample Identification	Wipe Sample Results ( $\mu\text{g}/100\text{cm}^2$ )
August 9, 2012	No damage or deterioration observed	LTM-WH-VWC-001	$< 0.20$
		LTM-WH-VWC-002	$< 0.20$
		LTM-WH-VWC-003	$< 0.20$

**Monitoring Activities – September 2013**

No signs of damage were observed to the sheet metal cladding and window frames on the northwest building elevation. Sheet metal cladding and liquid coatings in the elevator lobby areas were observed to be in good condition with no signs of wear or damage. Wipe samples were collected from the coated CMU block walls on the 2<sup>nd</sup>, 5<sup>th</sup>, and 6<sup>th</sup> floors. Analytical results were all non-detect as presented in the table below.

Date of Inspection	Visual Inspection Results	Wipe Sample Identification	Wipe Sample Results ( $\mu\text{g}/100\text{cm}^2$ )
September 3, 2013	No damage or deterioration observed	LTWH-VWC-001	$< 0.20$
		LTWH-VWC-002	$< 0.20$
		LTWH-VWC-003	$< 0.20$



**Attachment 1 – Webster House  
Long-Term Maintenance and Monitoring Program  
In-Place Management of PCB Impacted Materials  
UMass Amherst**

**Corrective Actions**

No corrective action required at this time.

Drawing details taken from Webster House Window Replacement drawing D-A-333-10-001711-01-T2 dated February 3, 2011 by Gale Associates, Inc. of Weymouth, Massachusetts.





## **Attachment 2 – Tobin Hall Deck**

**Attachment 2 – Tobin Hall  
Long-Term Maintenance and Monitoring Program  
In-Place Management of PCB Impacted Materials  
UMass Amherst**

**Building/Location: Tobin Hall**

**Summary of Remedial Areas**

*In-Place Management:* Residual PCBs on a building wall are being managed in place following removal of concrete decking on the west side of Tobin Hall in 2011 and concrete stairs/landing in 2012. Concrete materials that contain PCBs at concentrations above 1 ppm remain beneath a liquid encapsulating coating (residual PCB concentration in masonry reported at a concentration of 2.37 ppm). The encapsulation extends to a distance of six inches above and six inches below the former caulked joint along approximately 80 linear feet (l.f.) of the Tobin Hall building wall and along approximately seven linear feet of the concrete façade/pillar at the north and south ends of the stairway landing. Materials were encapsulated with two coats of clear Sikagard 670W acrylic coating or two coats of Sikagard 62 liquid epoxy coating (south end of the stairwell landing only). The locations of the encapsulated surfaces are depicted on Figure 1. The photo below depicts a portion of the concrete façade wall encapsulated with the Sikagard 670W acrylic coating and no longer accessible as described in the following sections.



**Concrete Wall to North of Main Stairway**

*Baseline Verification Data Summary:* Two initial baseline wipe samples were collected in August 2011 from the building wall façade encapsulated with Sikagard 670W clear acrylic coating as part of the decking removal project. Analytical results reported PCBs as non-detect ( $< 0.20 \mu\text{g}/100 \text{ cm}^2$ ) in both samples. One baseline wipe sample was collected from the epoxy coated concrete surfaces as part of the stair landing removal project in 2012. Analytical results reported PCBs as non-detect ( $< 0.20 \mu\text{g}/100 \text{ cm}^2$ ).

**Monitoring and Maintenance Implementation Plan**

The Monitoring and Maintenance Implementation Plan (MMIP) was submitted to EPA in March 2012 and included visual inspections and verification wipe sampling. As described in the May 2013 letter report, concrete surfaces encapsulated as part of the stair landing removal project were incorporated into the existing MMIP.

Verification wipe sampling of the encapsulated surfaces includes the collection of two verification wipe samples from the encapsulated surfaces (one from the northern portion of the wall and one from the southern portion of the wall). The locations will be randomly selected using a number representing the length of the individual joints in feet. Wipe samples will be collected using a hexane-soaked wipe following the standard wipe test procedures described in 40 CFR 761.123 over a 100 square centimeter surface area.

**Attachment 2 – Tobin Hall**  
**Long-Term Maintenance and Monitoring Program**  
**In-Place Management of PCB Impacted Materials**  
**UMass Amherst**

**Monitoring Activities – August 2012**

On August 9, 2012, coated concrete materials remaining above grade were inspected for signs of deterioration or damage to the Sikagard 670W clear coat. The southern portion of the coated areas was not accessible due to the installation of an asphalt pedestrian walkway to a level above the extent of the coating. Along the northern wall, the coating was observed to be in good condition with one small, isolated area of limited deterioration directly adjacent to a hose connection possibly due to physical impacts to the coating during connection and disconnection of the hoses during construction activities in the area. Analytical results from one verification wipe sample collected from the northern side of the encapsulated area indicated that PCBs were non-detect ( $< 0.20 \mu\text{g}/100\text{cm}^2$ ).

**Corrective Actions**

As described in the 2012 Long Term Maintenance and Monitoring Report, repairs to the area observed to be damaged by the hose connection were to be conducted as part of maintenance activities in 2013; however, as part of the final restoration/construction activities associated with the Commonwealth Honors construction project, four foot high retaining walls were constructed to the north and south of the former stair landing eliminating access to the damaged area observed in 2012 as well as the majority of the encapsulated surfaces identified as containing  $> 1$  ppm PCBs (see photo below and Figure 1). Given the current inaccessibility of these materials and the low concentrations of residual PCBs in the concrete, repairs to the existing liquid coatings will not be conducted.

In addition, and as described in the PCB Remediation Completion report submitted for the stair landing project, the clear coat applied to concrete above the former caulked joints was observed to be flaking and peeling in select areas. However, additional coatings were not applied in 2013 prior to the completion of the retaining walls. Monitoring of the area was conducted as part of the 2013 activities as described below.

**Monitoring Activities – October 2013**

On October 10, 2013 accessible coatings applied to concrete materials were inspected for signs of deterioration or damage. The majority of the concrete façade identified as containing residual PCBs  $> 1$  ppm to the north and south of the stair landing was not accessible for inspection due to the installation of new retaining walls and planting beds as described above and as shown in the photo below.

The remaining exposed encapsulated concrete façade was limited to a total of approximately 3.5 square feet of concrete at the northern and southern ends of the stair landing (i.e., seven feet of former joint to a distance of six inches above the former joints). A summary of the exposed concrete with coatings and the wipe sampling conducted is as follows:

- Southern Façade Area - Sikagard 62 liquid epoxy coating was observed to be in good condition with no signs of damage or wear. Results of the verification wipe sample collected from the epoxy coated surfaces indicated that PCBs were non-detect ( $< 0.20 \mu\text{g}/100\text{cm}^2$ ); and
- Northern Façade Area - Sikagard 670W clear coat encapsulant was found to be flaking and peeling in select sections of the concrete as observed following the application of the coatings in Fall 2012; a verification wipe sample was collected from the flaking area and analytical results indicated that PCBs were non-detect ( $< 0.20 \mu\text{g}/100\text{cm}^2$ ).

**Attachment 2 – Tobin Hall  
Long-Term Maintenance and Monitoring Program  
In-Place Management of PCB Impacted Materials  
UMass Amherst**

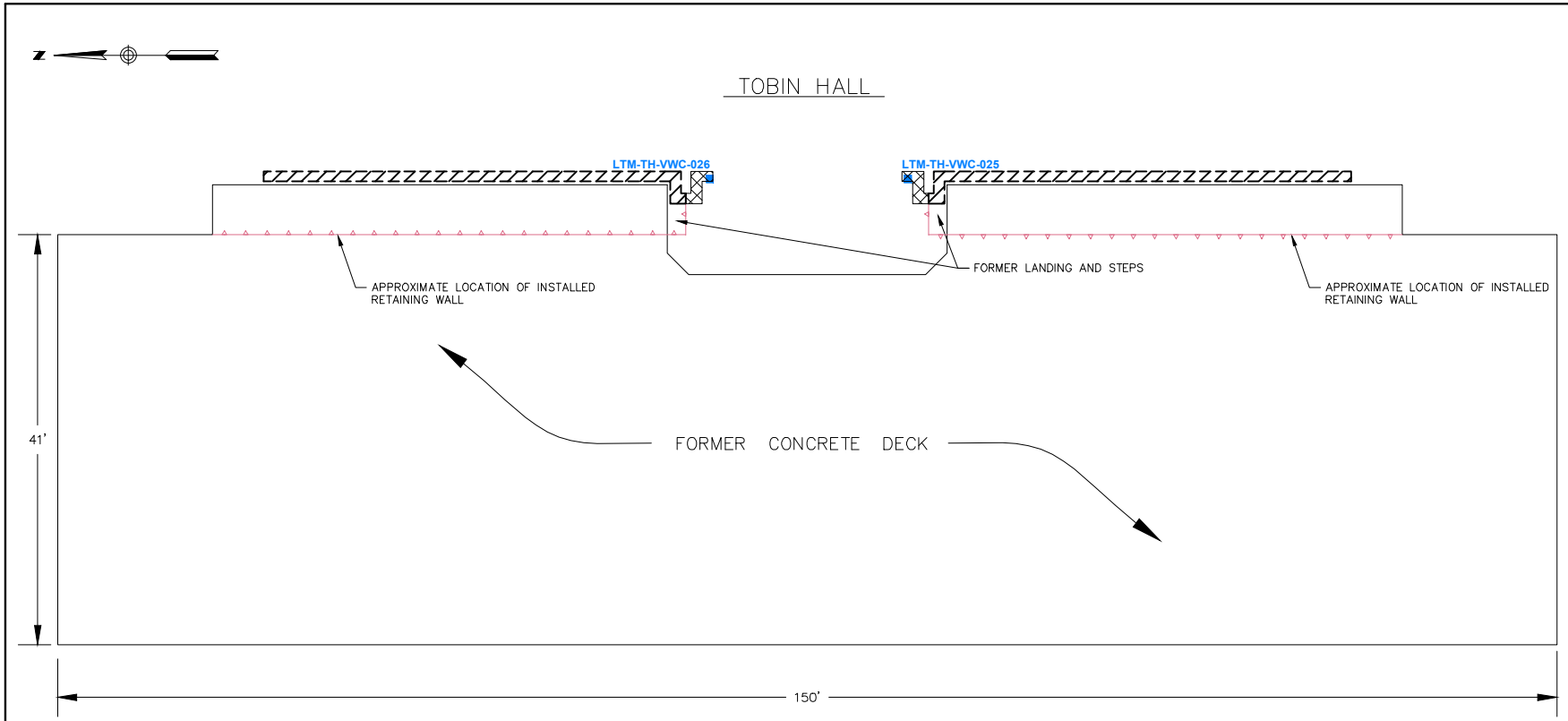


**Northern Side of Stair Landing**

**Corrective Actions**

Based on the results of verification wipe sampling which indicate that PCBs were non-detect in the wipe samples collected and the limited area of accessible concrete subject to this MMIP, no corrective actions are proposed to be conducted in this area. Continued monitoring of the accessible concrete surfaces will be conducted as part of 2014 monitoring activities.





#### LEGEND



AREA OF TOBIN HALL CONCRETE ENCAPSULATION CURRENTLY INACCESSIBLE DUE TO INSTALLATION OF RETAINING WALL AND PLANTING BED (ENCAPSULATION APPLIED TO A DISTANCE OF 6" ABOVE AND BELOW THE FORMER CAULKED JOINT).



AREA OF TOBIN HALL CONCRETE ENCAPSULATION TO A DISTANCE OF 6" ABOVE AND 6" BELOW CAULKED JOINT CURRENTLY ACCESSIBLE AT LOCATIONS ABOVE THE FORMER JOINT.

LTM-TH-VWC-025 ■ VERIFICATION WIPE SAMPLE LOCATION AND IDENTIFIER



BAR SCALE  
3/32" = 1'-0"

CHECK GRAPHIC SCALE BEFORE USING

 <b>WOODWARD &amp; CURRAN</b> <small>40 SHATTUCK ROAD, SUITE 110 ANDOVER, MASSACHUSETTS 01810 F   www.woodardcurran.com COMMITMENT &amp; INTEGRITY DRIVE RESULTS</small>	
<b>ENCAPSULATED BUILDING SURFACES AND VERIFICATION WIPE SAMPLE LOCATION</b>	
DESIGNED BY: GJF DRAWN BY: PF	CHECKED BY: JAH 225996-LTM-TOBIN-FIGURE 1.DWG
UNIVERSITY OF MASSACHUSETTS AMHERST, MASSACHUSETTS	
<b>2013 TOBIN HALL PCB MMP REPORT</b>	
JOB NO: 225695 DATE: DECEMBER 2013 SCALE: AS NOTED	
<b>FIGURE 1</b>	



## **Attachment 3 – Southwest Concourse**



**Attachment 3 – Southwest Concourse Area  
Long-Term Maintenance and Monitoring Program  
In-Place Management of PCB Impacted Materials  
UMass Amherst**

**Location:** Southwest Concourse Area

**Areas:** Hampshire Plaza, Berkshire Plaza, Washington Plaza, MacKimme House/Stonewall Center

**Summary of Remedial Areas**

*In-Place Management:* Residual PCBs on building walls and retaining walls are being managed in place at concentrations > 1 ppm following removal of caulking, soils, and concrete decking along retaining walls and ground level structures throughout the Southwest Concourse Area as follows:

- Retaining Walls and Ground Level Structures (maximum residual PCB concentrations in masonry 292 parts per million [ppm])
  - Planned Sub-grade areas – Concrete materials formerly in direct contact with the caulked joint, to a minimum distance of 12 inches below the caulked joint, and to a distance equivalent to the planned final finished grade above the caulked joint (if the final grade was above the former caulked joint) were encapsulated with two coats of tan Sikagard 62 colored epoxy.
  - Planned Above-grade areas – Concrete materials to a minimum distance of 12 inches above the caulked joint or planned finished grade were encapsulated with two coats of clear Sikagard 670W acrylic coating.
- Concrete Ceiling of Pedestrian Tunnel (max residual PCB concentration in masonry of 309 ppm) – Concrete materials formerly in direct contact with the caulking and to a lateral distance of 12 inches from the caulked joint were encapsulated with two coats of tan Sikagard 62 epoxy coating. Following application of the epoxy, a new bead of caulking was installed within the joint and a final top coat of a white elastomeric acrylic coating was applied to the entire tunnel ceiling.

The locations of the encapsulated surfaces are depicted on Figure 1 and typical applications are shown in the photos below.



**Typical Retaining Wall Application**



**Typical Stair Application  
(shadow from railing visible as dark area)**

**Attachment 3 – Southwest Concourse Area  
Long-Term Maintenance and Monitoring Program  
In-Place Management of PCB Impacted Materials  
UMass Amherst**

Baseline Verification Data Summary: Initial baseline wipe samples were collected in July and August 2010 (majority of the Southwest Concourse Area) and in July and August 2011 (areas included in the PCB Remediation Plan Amendment). A summary of analytical results from the baseline sampling is as follows:

- Sikagard 62 Epoxy Encapsulated Surfaces – 67 of 69 samples reported as non-detect (the two samples of former direct contact materials in the pedestrian tunnel reported PCBs at concentrations of 7.16 and 24  $\mu\text{g}/100\text{ cm}^2$ ; however, these areas were subsequently covered with a new bead of caulking and a final acrylic coat).
- Sikagard 670W Acrylic Coating Encapsulated Surfaces – 64 of 64 samples collected from above grade locations were reported as non-detect ( $< 1.0\text{ }\mu\text{g}/100\text{ cm}^2$ ).
- Encapsulated Concrete Building Foundations (July and August 2011) – 6 of 7 samples collected at grade (both epoxy and clear coated surfaces) reported as non-detect and one sample reported at a concentration of 4  $\mu\text{g}/100\text{ cm}^2$ ; however, materials in this area were recoated and results from the follow-up wipe samples indicated PCBs were non-detect ( $< 1.0\text{ }\mu\text{g}/100\text{ cm}^2$ ).

**Monitoring and Maintenance Implementation Plan**

The Monitoring and Maintenance Implementation Plan (MMIP) was submitted to EPA in December 2010 with a final response to comments on the plan submitted in January 2011. The MMIP includes visual inspection and wipe sampling of encapsulated surfaces to be conducted during each event. A summary of the inspection and monitoring requirements is as follows:

Verification wipe sampling for each of the encapsulated surfaces will be conducted using a hexane-soaked wipe following the standard wipe test procedures described in 40 CFR 761.123. Samples will be collected as follows:

- Concrete Structures (retaining walls and ground surface structures):
  - Sub-grade areas (Sikagard 62 epoxy) – Given the inaccessibility to these areas and that all 67 baseline wipe samples were non-detect for PCBs, no long term monitoring samples were proposed from these areas. However, due to modifications to the final site grade during construction, areas encapsulated with the Sikagard 62 liquid epoxy coating remain visible above grade over select portions of the Southwest Concourse. As such, both visual inspections of the epoxy coating and collection of verification wipe samples have been added to the program similar to the planned above grade areas; and
  - Above-grade areas (Sikagard 670W acrylic) – Nine wipe samples from randomly selected locations throughout the concourse area are to be collected. One sample will be collected from each type of concrete structure (retaining walls, building walls, walls along stairs) within each of the three major subdivisions of the concourse area (Hampshire Plaza, Berkshire Plaza, and Washington Plaza).
- Concrete Ceiling of the Pedestrian Tunnel – Two wipe samples will be collected from materials within the tunnel as follows:
  - One sample from the new caulking; and
  - One sample from the adjacent coated concrete.

**Monitoring Activities – August 2012**

Visual inspection and verification wipe sampling of encapsulated surfaces was conducted in accordance with the MMIP as described above between August 15, 2012 and August 20, 2012 and on January 4, 2013. Results of the monitoring activities are summarized below:

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*Visual Inspection:* Results of the visual inspections are as follows:

- Sikagard 62 Liquid Epoxy: The visual inspection conducted found no evidence of significant peeling, breakage, or brittleness of the coating. However, some damage was observed at a few isolated exterior locations. Areas of observed deterioration appear to be related to physical impacts to the coating (e.g., impacts from a metal grate at the Kennedy House). Locations of these areas are depicted on Figure 1.
  - Sikagard 670W: Visual inspection of the clear acrylic coating indicated that the coating remains in good condition over the majority of the encapsulated surfaces. Where present, areas of flaking and peeling were limited to isolated areas typically 4 to 6 inches in size (some areas were observed up to 1 foot in size). More widespread flaking and peeling was observed at two locations: the concrete retaining wall north of the Cance House, and the concrete building wall on the northeast face of the southwest end of the MacKimme House. In addition, areas of flaking and peeling of the Sikagard 670W on the concrete building wall on the southeast corner of the Crampton House appeared to be co-located with areas of visible concrete efflorescence (note, concrete efflorescence was also observed on this building wall outside the limits of the clear coat application).
- The locations in which flaking and peeling were observed are depicted on Figure 1 (Note: the areas depicted are intended to indicate concrete surfaces on which limited areas of flaking and peeling described above were observed).
- Concrete Ceiling of Pedestrian Tunnel: Visual inspection indicated that the coatings and caulking installed within the joint were in good condition. No deterioration was observed.



*Verification Wipe Samples:* Verification wipe samples were collected from concrete surfaces coated with the Sikagard 62 liquid epoxy coating and the Sikagard 670W clear acrylic coating in the Southwest Concourse area and from concrete coated with the Sikagard 62 liquid epoxy coating, caulking, and a final elastomeric acrylic coating in the pedestrian tunnel. Wipe samples were collected from coated surfaces without observed flaking and peeling. The locations of the verification wipe samples are presented on Figure 1. Analytical results are presented in Table 1 of the letter report. A summary of the samples collected is as follows:

- Sikagard 62 Liquid Epoxy: Wipe samples were collected from representative locations within each of the three main plazas in the Southwest Concourse area. A total of eight wipe samples were collected from concrete retaining walls (2 samples), building walls (3 samples), and concrete along stairs (3 samples). Analytical results were as follows:
  - PCBs were either non-detect (six samples at  $< 0.20 \mu\text{g}/100 \text{ cm}^2$ ) or at a concentration  $< 1 \mu\text{g}/100 \text{ cm}^2$  (total PCBs reported as  $0.24 \mu\text{g}/100 \text{ cm}^2$ ) in seven of the eight samples collected; and
  - PCBs were reported at a concentration  $> 1$  and  $< 10 \mu\text{g}/100 \text{ cm}^2$  in sample LTM-SWC-VWC-020 collected from concrete along a stairway in the Washington Plaza with a reported concentration of  $1.4 \mu\text{g}/100 \text{ cm}^2$ .

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- Sikagard 670W: One wipe sample was collected from each of the three main divisions of concrete surfaces in each of the three plazas within the Southwest Concourse area (total of nine samples). Analytical results indicated that PCBs were non-detect ( $< 0.20 \mu\text{g}/100 \text{ cm}^2$ ) in all nine samples collected.
- Concrete Ceiling of Pedestrian Tunnel: One wipe sample was collected from the caulked joint and one wipe sample was collected from coated concrete adjacent to the joint. Analytical results indicated that PCBs were non-detect ( $< 0.20 \mu\text{g}/100 \text{ cm}^2$ ) in the sample collected from the adjacent concrete and  $1.6 \mu\text{g}/100 \text{ cm}^2$  in the sample from the new caulking.

**Corrective Actions**

As described in the 2012 report, pilot test activities were to be conducted on areas of flaking and peeling to evaluate alternatives for additional coatings; however, these activities were not conducted in 2013. As noted in the sections below, flaking and peeling of the acrylic coating was not observed to have increased between 2012 and 2013 and verification wipe samples were collected in 2013 from areas of flaking and peeling to determine residual PCB concentrations at these areas (see below for a summary of the results).

**Monitoring Activities – October 2013**

Visual inspection and verification wipe sampling of encapsulated surfaces was conducted in accordance with the MMIP as described above on October 10, 2013. Results of the monitoring activities are summarized below:

*Visual Inspection:* Results of the visual inspections are as follows:

- Sikagard 62 Liquid Epoxy: The visual inspection conducted found no evidence of significant peeling, breakage, or brittleness of the coating. However, some damage was observed at a few isolated exterior locations. Areas of observed damage appear to be related to physical impacts to the coating, consistent with the 2012 epoxy inspections. Locations of these areas are depicted on Figure 1.
- Sikagard 670W: Visual inspection of the clear acrylic coating indicated that the coating condition remains consistent with August 2012 observations with little to no change in the extent of the observed flaking and peeling. The locations in which isolated flaking and peeling were observed are depicted on Figure 1.
- Concrete Ceiling of Pedestrian Tunnel: Visual inspection indicated that the coatings and caulking installed within the joint were in good condition. No deterioration was observed.

*Verification Wipe Samples:* Verification wipe samples were collected from concrete surfaces coated with the Sikagard 62 liquid epoxy coating and the Sikagard 670W clear acrylic coating in the Southwest Concourse area and from concrete coated with the Sikagard 62 liquid epoxy coating, caulking, and a final elastomeric acrylic coating in the pedestrian tunnel. The locations of the verification wipe samples are presented on Figure 1. Analytical results are presented in Table 1 of the letter report. A summary of the samples collected is as follows:

- Sikagard 62 Liquid Epoxy: Wipe samples were collected from representative locations within each of the three main plazas in the Southwest Concourse area. A total of eight wipe samples were collected from concrete retaining walls (2 samples [no epoxy on retaining walls is exposed in the Washington Plaza], building walls (3 samples), and concrete along stairs (3 samples). Analytical results were as follows:
  - PCBs were either non-detect (six samples at  $< 0.20 \mu\text{g}/100\text{cm}^2$ ) or at a concentration  $< 1 \mu\text{g}/100\text{cm}^2$  (total PCBs reported as  $0.46 \mu\text{g}/100 \text{ cm}^2$ ) in seven of the eight samples collected; and
  - PCBs were reported at a concentration  $> 1$  and  $< 10 \mu\text{g}/100 \text{ cm}^2$  in sample LTM-SWC-VWC-027 collected from concrete along a stairway in the Washington Plaza with a reported concentration of  $2.4 \mu\text{g}/100 \text{ cm}^2$ . This result is consistent with the results from wipe sampling of the same area in 2012 where PCBs were reported at a concentration of  $1.4 \mu\text{g}/100\text{cm}^2$ .

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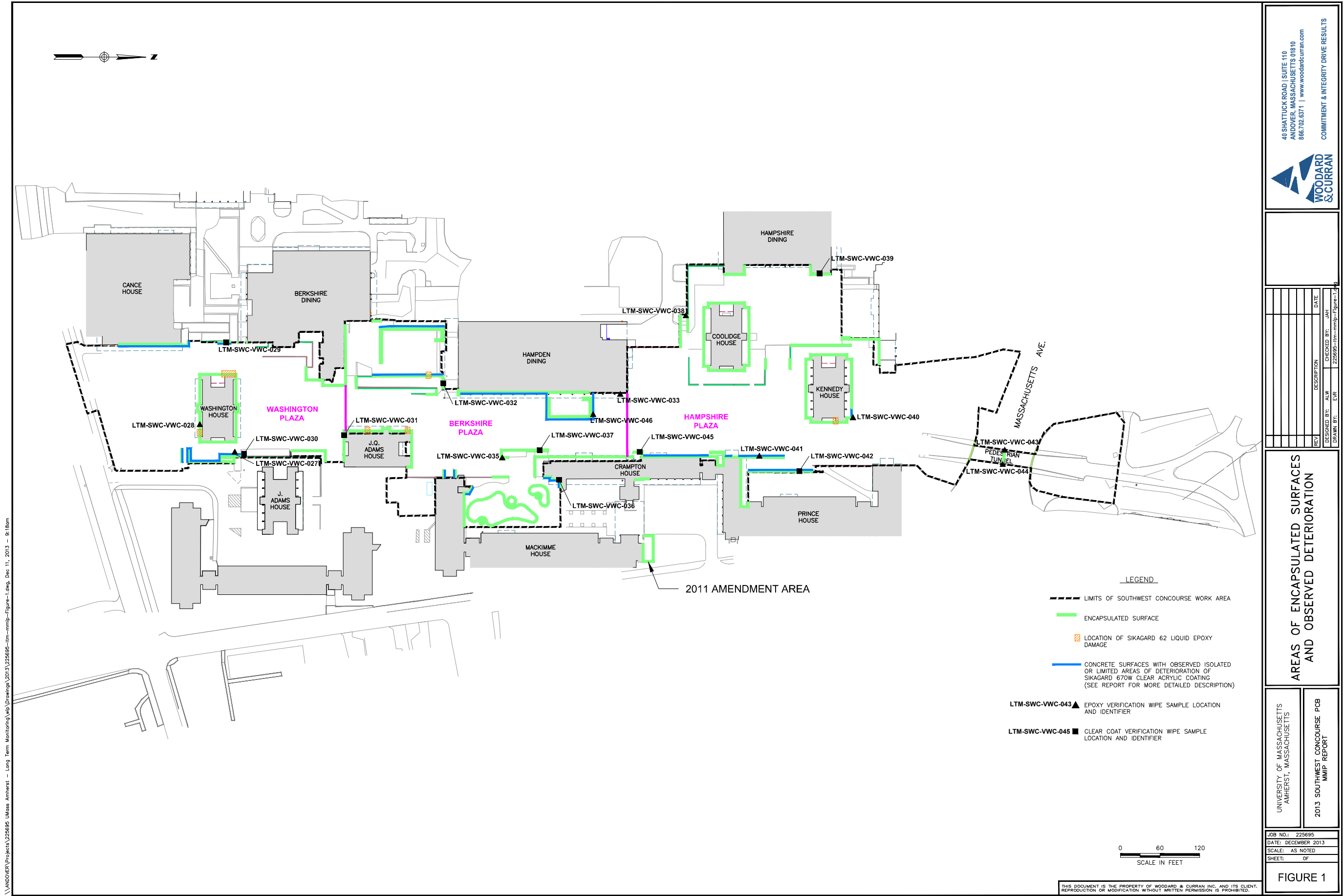
- Sikagard 670W: One wipe sample was collected from each of the three main divisions of concrete surfaces in each of the three plazas within the Southwest Concourse area (total of nine samples). Of these, three were collected from areas of observed flaking/peeling of the coating. Analytical results from the six samples collected from areas with intact clear coating indicated that PCBs were non-detect ( $< 0.20 \mu\text{g}/100\text{cm}^2$ ). Analytical results from the three samples collected from areas of observed flaking/peeling indicated that PCBs were non-detect (2 samples at  $< 0.20 \mu\text{g}/100\text{cm}^2$ ) and present at a concentration of  $0.34 \mu\text{g}/100\text{cm}^2$ . The sample with the reported concentration of  $0.34 \mu\text{g}/100\text{cm}^2$  was collected at a location with observed efflorescence from the concrete building wall.
- Concrete Ceiling of Pedestrian Tunnel: One wipe sample was collected from the caulked joint and one wipe sample was collected from coated concrete adjacent to the joint. Analytical results were consistent with those reported in 2012 and indicated that PCBs were non-detect ( $< 0.20 \mu\text{g}/100 \text{ cm}^2$ ) in the sample collected from the adjacent concrete and  $2.7 \mu\text{g}/100 \text{ cm}^2$  in the sample from the new caulking.

Based on these results, the liquid coatings applied to concrete surfaces in the Southwest Concourse and the pedestrian tunnel continue to be effective in encapsulating residual PCBs in masonry. The two samples which detected PCBs  $> 1 \mu\text{g}/100 \text{ cm}^2$  ( $2.4$  and  $2.7 \mu\text{g}/100 \text{ cm}^2$ ) will continue to be monitored. Both of these areas have a lower probability of access given their location (Pedestrian Tunnel ceiling and lower portion of a stairway).

#### **Corrective Actions**

As described in the 2012 long term monitoring and maintenance report, a pilot test was planned to be conducted in 2013 to evaluate alternatives for additional coatings based on the observed flaking and peeling of the clear coat in some areas. To date UMass is still evaluating options for different coatings that could be used on these masonry surfaces. Given the minimal additional flaking and peeling observed between 2012 and 2013, it is believed that these areas observed to date are due to conditions at the time of application and not weathering of the coating over time. As such, and based on the limited flaking and peeling in select areas that has been observed along with the results of the wipe testing described above (all results non-detect or  $< 1 \mu\text{g}/100\text{cm}^2$ ), these areas will continue to be included for monitoring during 2014, as the coating evaluation continues.

Areas of observed damage to the Sikagard 62 epoxy coating will be repaired and recoated as part of maintenance activities in the Southwest Concourse.





## **Attachment 4 – Field and Grayson Houses Parapet Wall**



**Attachment 4 – Field and Grayson Houses  
Long-Term Maintenance and Monitoring Program  
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**Location:** Orchard Hill Residential Area

**Building:** Field and Grayson Houses

**Summary of Remedial Areas**

*In-Place Management:* PCBs are being managed in place at concentrations > 1 ppm following the removal of caulking from parapet wall masonry joints (total of approximately 290 linear feet) as part of the roof repair activities conducted in 2010 at the Field and Grayson Houses. Two coats of Sikagard 62 liquid epoxy coating were applied to concrete materials formerly in direct contact with and to a distance of 6 inches from the joints in either direction.



*Baseline Verification Data Summary:* Initial wipe samples were collected in August 2010 following application of the Sikagard 62 epoxy. Analytical results from the 26 wipe samples collected indicated that PCBs were non-detect (24 samples at < 0.20  $\mu\text{g}/100\text{cm}^2$ ) or < 1  $\mu\text{g}/100\text{cm}^2$  (2 samples with total PCBs reported at concentrations of 0.44 and 0.90  $\mu\text{g}/100\text{cm}^2$ ).

**Monitoring and Maintenance Implementation Plan**

Plan submitted to EPA in the PCB Remediation Plan/Close Out Document on April 24, 2012. As described in these documents, long term monitoring is to consist of visual inspection of masonry joints along the roof lines annually from the ground. Due to the access restrictions and limited to no accessibility to these areas, verification wipe samples



**Attachment 4 – Field and Grayson Houses**  
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are not included in the long term monitoring. In areas where damage or deterioration of the encapsulant or caulking is observed, additional coatings will be applied.

**Monitoring Activities – August 2012**

On August 9, 2012, coated concrete materials were inspected for signs of deterioration or damage to the Sikagard 62 liquid epoxy coating. No areas of damaged, flaking, or peeling were observed. No corrective actions were required based on this inspection.

**Monitoring Activities – September 2013**

On September 3, 2013, coated concrete materials were inspected for signs of deterioration or damage to the Sikagard 62 liquid epoxy coating. The visual inspection found no evidence of deterioration of the coating. However, some damage was observed at one joint on the west elevation of the Field House.

**Corrective Actions**

Apply additional Sikagard 62 epoxy coating to the damaged area at the isolated roof line location on the west elevation of the Field House when accessing that area as part of routine maintenance activities.



## **Attachment 5 – Dubois Library Elevator Lobbies**

**Attachment 5 – Dubois Library  
Long-Term Maintenance and Monitoring Program  
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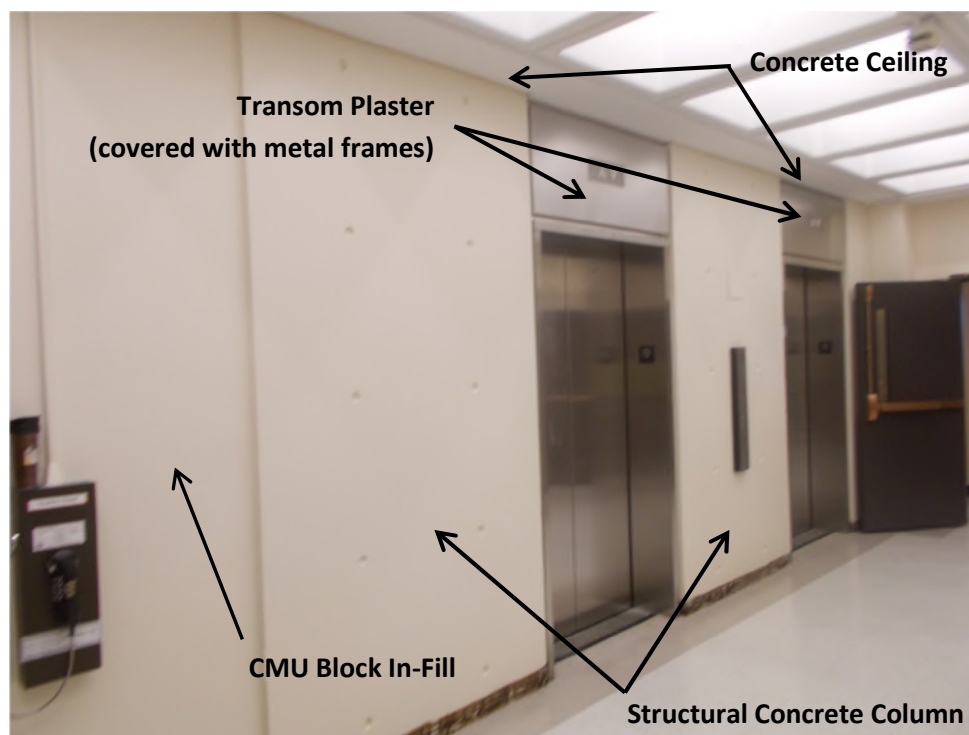
**Location:** W.E.B Dubois Library

**Summary of Remedial Areas**

*In-Place Management:* Residual PCBs are being managed in place at concentrations > 1 ppm following abatement activities at the following locations located within the elevator lobbies:

- CMU Block In-Fill Materials – All CMU block in-fill materials were encapsulated with Sika 550W acrylic coating followed by a final coat of interior latex paint.
- Transom Plaster – Plaster materials throughout the elevator lobbies were encapsulated with Sika 550W acrylic coating followed by a final coat of interior latex paint. Metal cladding was installed over the encapsulated transom plaster materials in accordance with project requirements.
- Concrete Ceiling – Concrete materials formerly in direct contact with the caulking and out to the corner of the concrete ceiling (or within 12 inches of the caulked joint) were encapsulated with Sika 550W acrylic coating followed by a final coat of interior latex paint. All remaining elevator lobby ceiling materials beyond the corner were covered with latex paint.
- Structural Concrete Columns – Concrete materials formerly in direct contact with the caulking and out to the first 90-degree angle (or within approximately 2 inches of the caulked joint) were encapsulated with Sika 550W acrylic coating followed by a final coat of interior latex paint. Portions of the elevator door recesses were also covered with metal frames associated with the new elevator doors. All materials on the face of the structural concrete column beyond the corner were encapsulated with latex paint.

The encapsulated surfaces associated with the elevator lobby abatement activities are shown in the photo below.



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Baseline Verification Wipe Data Summary: Initial baseline wipes were collected August 28, 2012. A summary of analytical results from the baseline sampling is as follows:

- CMU Block In-Fill materials: Three verification wipes samples were collected from CMU block in-fill surfaces following the application of the Sika 550W acrylic coating followed by a latex coating. Analytical results reported PCBs as non-detect ( $< 0.20 \mu\text{g}/100 \text{ cm}^2$ ) in the three wipes samples.
- Transom Plaster: One verification wipe sample was collected from transom plaster surfaces following the application of the Sika 550W acrylic coating followed by a latex coating. Analytical results indicated that PCBs were present below the encapsulation criteria of  $1 \mu\text{g}/100 \text{ cm}^2$  with a reported concentration of  $0.72 \mu\text{g}/100 \text{ cm}^2$ .
- Concrete Ceiling: One verification wipe sample was collected from concrete ceiling surfaces following the application of the Sika 550W acrylic coating followed by a latex coating. Analytical results reported PCBs as non-detect ( $< 0.20 \mu\text{g}/100 \text{ cm}^2$ ).
- Structural Concrete Columns – Three wipe samples were collected from encapsulated structural concrete materials following the application of the Sika 550W acrylic coating followed by a latex coating. Two wipe samples were collected from the parallel face of the structural concrete (facing the lobby) at a distance of 10 inches from the former caulked joint. Analytical results from these two samples indicated that PCBs were non-detected ( $< 0.20 \mu\text{g}/100 \text{ cm}^2$ ). One sample was collected at a distance of two inches from the former caulked joint along the perpendicular face of the structural concrete (i.e., within the elevator recess). Analytical results indicated that PCBs were present at a concentration of  $4.6 \mu\text{g}/100 \text{ cm}^2$  in this sample (sample DL-4E0-VWC-100 collected from the fourth floor).

Indoor Air Sampling Data Summary: Indoor air samples were collected on August 28, 2012 as part of the initial post-remediation sampling. Analytical results indicated that PCBs were present at concentrations of 0.690, 0.977, and  $1.146 \mu\text{g}/\text{m}^3$  in the three samples collected. As described in the MMIP, these results were above EPA's published guidance for indoor air levels for schools and below the risk-based project specific action level of  $1.180 \mu\text{g}/\text{m}^3$ .

As part of the development of the MMIP and to gain an understanding of indoor air levels in the different floors of the library as well as over the different seasons to assess variations over time, an expanded indoor air sampling program, which including the collection of samples from nine lobby areas, was developed and implemented on October 16, 2012. Results from the expanded round of sampling indicated that PCBs were present at concentrations up to  $0.542 \mu\text{g}/\text{m}^3$ .

### **Monitoring and Maintenance Implementation Plan**

The Monitoring and Maintenance Implementation Plan (MMIP) was submitted to EPA in March 2013 and included visual inspections of encapsulated surfaces, verification wipe sampling, and indoor air sampling. A summary of the inspection and monitoring requirements is as follows:

Verification Wipe Sampling: Verification wipe samples of the encapsulated surfaces will be collected using a hexane-soaked wipe following the standard wipe test procedures described in 40 CFR 761.123. A total of seven samples will be collected from randomly selected locations as follows:

- CMU Block In-Fill Materials – Three verification wipe samples will be collected from encapsulated masonry block in-fills on three randomly selected floors. The location of the wipe sample on the in-fill will be randomly selected using a random number generator based on the total height and width of the in-fill;
- Structural Concrete/Lobby Walls – Three verification wipe samples will be collected from structural concrete/lobby wall materials on three randomly selected floors. The location of each wipe sample will be selected as follows:
  - The associated elevator shaft will be randomly selected:

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- The location of the wipe along the former joints will be randomly selected using a random number generator with the “zero” point being located on the lower left hand corner and proceeding clockwise along the former joints; and
- One wipe sample will be collected at a distance of 1.5 inches from the former caulked joint (i.e., within the return of the elevator door recess, prior to the first 90-degree angle). Two wipe samples will be collected at a distance of 10 inches from the former joint (the higher number of samples is based on the higher likelihood of direct contact with the lobby walls compared to the relatively small [1.5 inch wide] elevator door recess).
- Ceiling – One verification sample will be collected from ceiling materials on a randomly selected floor. The location of the wipe will be selected as follows:
  - The elevator shaft will be randomly selected; and
  - The location of the wipe along the former joint will be randomly selected using a random number generator with the “zero” point being located on the left end of the former joint.
- Transom Plaster – The final construction includes the installation of sheet metal cladding over the existing transom plaster. No verification wipe samples will be collected due to the lack of direct contact exposure pathway to the transom plaster.

Indoor Air Sampling: Based on the existing data set, which indicated that PCBs were present in indoor air samples at concentrations above the EPA’s published guidance for indoor air levels for schools of  $0.450 \mu\text{g}/\text{m}^3$  but below the project specific risk-based action level developed for the elevator lobbies ( $1.18 \mu\text{g}/\text{m}^3$ ), two rounds of indoor air monitoring were conducted in 2013 to gain an understanding of indoor air levels across the different floors of the library and over the different seasonal variations in ambient temperature and ventilation configuration.

The first sampling event was conducted in Winter / early Spring to monitor indoor air conditions during periods of colder ambient temperatures and with the ventilation system dampers are in a more closed position (less outside make-up air). The second sampling event was conducted in the Fall to monitor indoor air conditions during a period of moderate ambient air temperatures when the ventilation system dampers are more open (more outside make-up air). During each event, indoor air samples were collected from the nine locations previously sampled in October 2012 for comparison purposes to previous results over time. These locations include the 4<sup>th</sup>, 5<sup>th</sup>, 8<sup>th</sup>, 13<sup>th</sup>, 15<sup>th</sup>, 18<sup>th</sup>, 19<sup>th</sup>, 23<sup>rd</sup>, and 26<sup>th</sup> floors. In addition to the above samples, one background air sample, collected from outside the library, and one duplicate sample were collected during each event as part of the QA/QC procedures associated with the sample collection procedures.

Indoor air samples were collected in accordance with the US EPA Compendium Method TO-10A “Determination of Pesticides and Polychlorinated Biphenyls in Ambient Air Using Low Volume Polyurethane Foam (PUF) Sampling Followed by Gas Chromatographic/Multi-Detector Detection (GC/MD)”. Samples were submitted to a certified analytical laboratory for PCB Homolog Analysis via US EPA Method 680A with a laboratory reporting limit of  $< 0.10 \mu\text{g}/\text{m}^3$ .

**Visual Inspection and Verification Wipe Sampling Monitoring Activities – October 2013**

Visual inspections and verification wipe sampling of the encapsulated materials was conducted on October 11, 2013 in accordance with the MMIP as described above. Results of the monitoring activities are summarized below:

- CMU Block In-Fill materials – Liquid coatings applied to the CMU block in-fills within the elevator lobbies were observed to be in good condition with no signs of wear or damage. Three verification wipe samples were collected from the coated CMU block in-fill materials on the 10<sup>th</sup>, 19<sup>th</sup>, and 23<sup>rd</sup> floors. Analytical results indicated that PCBs were not present above the encapsulation goal of  $1 \mu\text{g}/100 \text{ cm}^2$ . Two samples were

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non-detect for PCBs ( $< 0.20 \mu\text{g}/100 \text{ cm}^2$ ) and one verification wipe sample contained PCBs at a concentration of  $0.49 \mu\text{g}/100 \text{ cm}^2$ .

- Structural Concrete Columns – Visual inspection found no evidence of deterioration of the coatings applied to the structural concrete columns; however, some physical wearing of the top coat of the latex paint (potentially due to rubbing of the wall surface by trash cans or other objects) was observed. Three verification wipe samples were collected for PCB analyses. Two verification wipe samples collected at a distance of 10 inches from the joint on the 16<sup>th</sup> and 21<sup>st</sup> floors were reported as non-detect for PCBs ( $< 0.20 \mu\text{g}/100 \text{ cm}^2$ ). One verification wipe sample collected at a distance of 1.5 inches from the joint on the 4<sup>th</sup> floor contained PCBs with a reported concentration of  $0.49 \mu\text{g}/100 \text{ cm}^2$ . This sample was collected from the same area as the baseline verification sample which detected  $4.6 \mu\text{g}/100 \text{ cm}^2$ .
- Concrete Ceiling – Visual inspection found no evidence of deterioration of the coatings applied to the concrete ceiling. One verification wipe sample was collected from the 20<sup>th</sup> floor at a distance of six inches from the joint. Analytical results indicated that PCBs were non-detect ( $< 0.20 \mu\text{g}/100 \text{ cm}^2$ ).

### **Indoor Air Sampling Results – April and October 2013**

Results from the two rounds of indoor air sampling are summarized on Table 5-1, along with all previous indoor air sample results, and were as follows:

- April 5, 2013 – Analytical results indicated that total PCBs were present at concentrations ranging from  $0.154$  to  $0.406 \mu\text{g}/\text{m}^3$  with an average PCB concentration of  $0.253 \mu\text{g}/\text{m}^3$ ; and
- October 11, 2013 – Analytical results indicated that total PCBs were present at concentrations ranging from  $0.191$  to  $0.959 \mu\text{g}/\text{m}^3$  with an average PCB concentration of  $0.525 \mu\text{g}/\text{m}^3$ .
- Analytical results from the ambient air samples collected outside of the library indicated that PCBs were non-detect ( $< 0.005 \mu\text{g}/\text{m}^3$ ) during both sampling events.

Results from the indoor air sampling events are proposed to be compared to the project specific risk-based action level and EPA's published guidance as follows:

- Total PCBs  $< 0.450 \mu\text{g}/\text{m}^3$  – continued monitoring to determine if results are consistent throughout the year; potentially cease indoor air monitoring if results are sustained over multiple events;
- Total PCBs  $> 0.450 \mu\text{g}/\text{m}^3$  and  $< 1.18 \mu\text{g}/\text{m}^3$  – evaluate data for any trends that may be evident, continue semi-annual monitoring of indoor air concentrations; and
- Total PCBs  $> 1.18 \mu\text{g}/\text{m}^3$  – evaluate results and present proposed actions to EPA.

As indicated on Table 5-1 and above, the maximum and average concentrations continue to be in the  $0.450$  to  $1.18 \mu\text{g}/\text{m}^3$  continued monitoring range.

The indoor air sample results collected post-remediation are graphically depicted on the attached chart. Two key factors that may be influencing indoor air levels include ambient outside temperatures and the amount of outside make-up air introduced into the building during normal operations of the building's HVAC system. Variations in these factors are seen under three main conditions:

1. Colder temperatures with the ventilation system dampers generally in a more closed configuration to provide less outside make-up air (Winter/early Spring);
2. Warmer temperatures with the ventilation system dampers generally in a more closed configuration to provide less outside make-up air (Summer); and
3. Moderate temperatures with the ventilation system dampers generally in a more open configuration to provide more outside make-up air (Spring and Fall).

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As shown on the attached chart, the higher concentrations of PCBs in indoor air coincided with higher ambient temperatures; whereas the outside make-up air configuration appears to be less of a factor.

**Corrective Actions**

Based on the 2013 monitoring activities, no corrective actions are proposed at this time and monitoring activities will continue in 2014. The 2014 activities will consist of visual inspections, surface wipe samples (same program as 2013), and indoor air sampling. Based on the 2012 and 2013 indoor air results, three rounds of sampling will be conducted to capture indoor air conditions under each of the three temperature/ventilation conditions described above. Samples will be collected in February (cooler temperatures), July (warmer temperatures) and October (moderate temperatures). Given the consistency in the sample results between ventilation zones and floors, the number of samples is proposed to change from 10 samples (9 floors 1 ambient) to 5 (4 floors 1 ambient), consisting of 2 floors per ventilation zone (see Table 5-1) biasing to floors with previous data and higher concentrations. Specific floors to be sampled include floors 4 and 13 (Zone 1) and floors 19 and 23 (Zone 2).

**Table 5-1  
Summary of Indoor Air Sample Results  
Dubois Library  
Amherst, Massachusetts**

Lobby Floor	Air Sample	PCB Concentration (µg/cartridge)	Flow Rate (L/Minute)	Duration (minutes)	Total PCB Concentration (µg/m <sup>3</sup> )
<b>Project Specific Risk-Based Action Level: 1.18 µg/m<sup>3</sup></b>					
<b>Pre PCB Remediation Indoor Air Samples January 15, 2010</b>					
4	DL-4E-IAS-088	0.198	2.58	121	0.629
15	DL-15E-IAS-085	0.146	2.6	127	0.442
18	DL-18E-IAS-082	0.193	2.57	128	0.580
Outdoors	N/A	N/A	N/A	N/A	N/A
QA/QC Sample - Field Duplicate					
N/A	N/A	N/A	N/A	NA/	N/A
<b>Post PCB Remediation Indoor Air Samples August 28, 2012</b>					
4	DL-4E-IAS-108	0.41	2.6	240	0.690
15	DL-15E-IAS-109	0.68	2.6	240	1.146
18	DL-18E-IAS-110	0.58	2.6	240	0.977
Outdoors	DL-OUT-IAS-112	< 0.005	2.6	250	< 0.005 <sup>1</sup>
QA/QC Sample - Field Duplicate					
18	DL-18ED-IAS-111	0.56	2.6	240	0.928
<b>Post PCB Remediation Indoor Air Samples October 16, 2012</b>					
<b>Zone 1 Ventilation</b>					
4	DL-4E-IAS-113	0.34	2.64	241	0.542
5	DL-5E-IAS-114	0.21	2.65	242	0.332
8	DL-8E-IAS-115	0.25	2.66	242	0.394
13	DL-13E-IAS-116	0.052	2.65	244	0.082 J <sup>1</sup>
<b>Zone 2 Ventilation</b>					
15	DL-15E-IAS-117	0.053	2.64	244	0.084 J <sup>1</sup>
18	DL-18E-IAS-118	0.31	2.62	246	0.488
19	DL-19E-IAS-119	0.1	2.68	246	0.154 J/UJ
23	DL-23E-IAS-120	0.26	2.66	248	0.4
26	DL-26E-IAS-121	0.0091	2.65	250	0.014 J/UJ
Outdoors	DL-OUT-IAS-122	< 0.005	2.66	240	< 0.005
QA/QC Sample - Field Duplicate					
13	DL-13ED-IAS-123	0.37	2.64	244	0.583
<b>Post PCB Remediation Indoor Air Samples April 5, 2013</b>					
<b>Zone 1 Ventilation</b>					
4	DL-4E-IAS-124	0.21	2.62	245	0.327
5	DL-5E-IAS-125	0.11	2.62	245	0.171
8	DL-8E-IAS-126	0.13	2.62	241	0.206
13	DL-13E-IAS-127	0.23	2.62	242	0.362
<b>Zone 2 Ventilation</b>					
15	DL-15E-IAS-128	0.13	2.62	243	0.204
18	DL-18E-IAS-129	0.14	2.62	243	0.220
19	DL-19E-IAS-130	0.26	2.62	244	0.406
23	DL-23E-IAS-131	0.15	2.62	246	0.232
26	DL-26E-IAS-132	0.1	2.62	248	0.154
Outdoors	DL-OUT-IAS-134	< 0.005	2.62	243	< 0.005
QA/QC Sample - Field Duplicate					
4	DL-4ED-IAS-133	0.2	2.62	242	0.315



**Table 5-1**  
**Summary of Indoor Air Sample Results**  
**Dubois Library**  
**Amherst, Massachusetts**

Lobby Floor	Air Sample	PCB Concentration (µg/cartridge)	Flow Rate (L/Minute)	Duration (minutes)	Total PCB Concentration (µg/m <sup>3</sup> )
<b>Project Specific Risk-Based Action Level: 1.18 µg/m<sup>3</sup></b>					
<b>Post PCB Remediation Indoor Air Samples</b>					
<b>October 11, 2013</b>					
<b>Zone 1 Ventilation</b>					
4	DL-4E-IAS-135	0.33	2.63	240	0.529 J
5	DL-5E-IAS-136	0.12	2.63	241	0.191
8	DL-8E-IAS-137	0.22	2.64	240	0.351
13	DL-13E-IAS-138	0.50	2.62	240	0.803
<b>Zone 2 Ventilation</b>					
15	DL-15E-IAS-139	0.30	2.63	241	0.478
18	DL-18E-IAS-145	0.31	2.63	240	0.496
19	DL-19E-IAS-140	0.60	2.64	240	0.959
23	DL-23E-IAS-141	0.35	2.62	242	0.559
26	DL-26E-IAS-142	0.23	2.65	242	0.362
Outdoors	DL-OUT-IAS-144	0.00	2.60	240	< 0.0081
<b>QA/QC Sample - Field Duplicate</b>					
4	DL-4ED-IAS-143	0.21	2.63	241	0.335

**Notes:**

Project Specific Risk-based Action Level as specified in the *Risk-Based Disposal and Cleanup PCB Remediation Plan* for the Dubois Library dated March 2010.

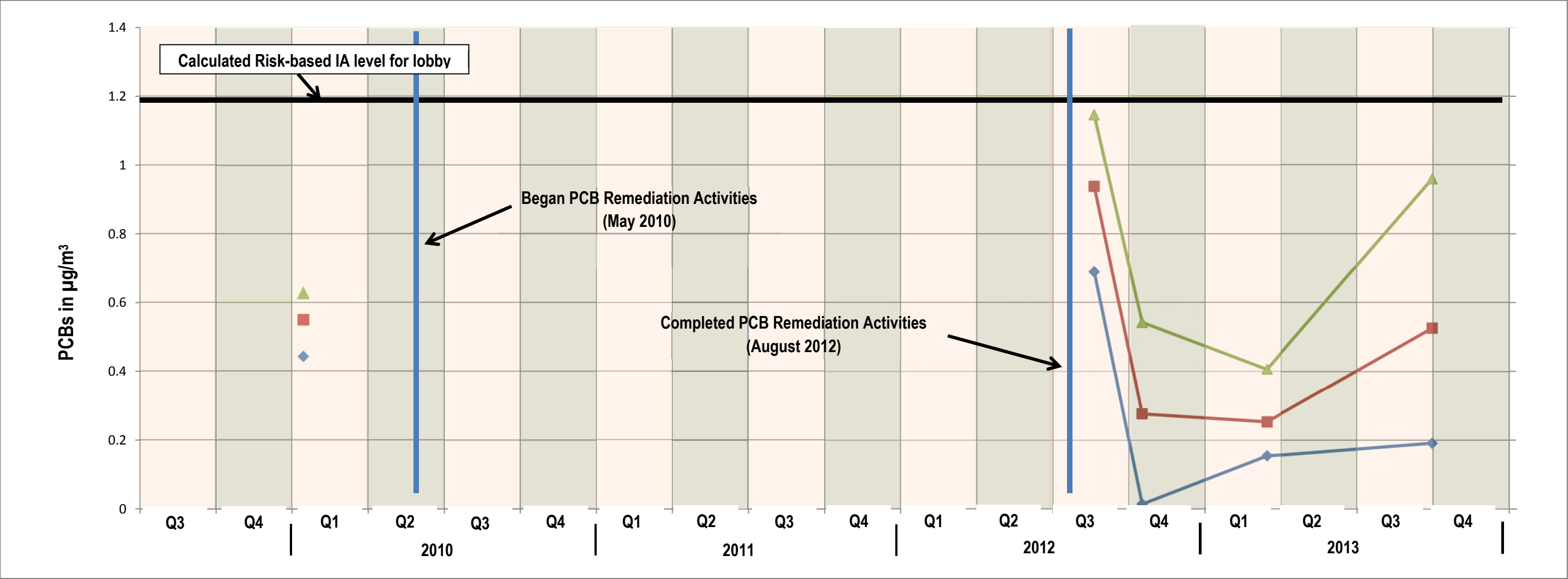
Air samples collected in accordance with USEPA Compendium Method TO-10A "Determination of Pesticides and Polychlorinated Biphenyls In Ambient Air Using Low Volume Polyurethane Foam (PUF) Sampling Followed by Gas Chromatographic/Multi-Detector Detection (GC/MD)" and submitted for laboratory analysis of PCBs homologs.

µg/m<sup>3</sup> = micrograms per cubic meter

J/UJ = Analytical results qualified as estimated based on external data validation of individual homolog groups.

1. Total PCB results calculated from individual homolog groups including non-detect results. Individual homolog group non-detect results have been rejected due to low surrogate recoveries for these samples.

Attachment 5-1  
 Summary of Indoor Air Sampling Data – Dubois Library  
 UMass Amherst



**Legend**

- |  |  |   |
|--|--|---|
| <div style="display: flex; align-items: center; margin-bottom: 10px;"> <div style="width: 20px; height: 20px; background-color: #f9d7bc; border: 1px solid black; margin-right: 5px;"></div> <div>Approximate timing of ventilation system dampers maintained in “closed” configuration.</div> </div> <div style="display: flex; align-items: center;"> <div style="width: 20px; height: 20px; background-color: #d7e3bc; border: 1px solid black; margin-right: 5px;"></div> <div>Approximate timing of ventilation system dampers maintained in “open” configuration.</div> </div> | <div style="display: flex; align-items: center; margin-bottom: 10px;"> <div style="width: 15px; height: 15px; background-color: #8ebf42; margin-right: 5px;"></div> <div>Maximum PCB concentration in indoor air per event</div> </div> <div style="display: flex; align-items: center; margin-bottom: 10px;"> <div style="width: 15px; height: 15px; background-color: #a52a2a; margin-right: 5px;"></div> <div>Average PCB concentration in indoor air per event</div> </div> <div style="display: flex; align-items: center;"> <div style="width: 15px; height: 15px; background-color: #4682b4; margin-right: 5px;"></div> <div>Minimum PCB concentration in indoor air per event</div> </div> | <div style="display: flex; align-items: center; margin-bottom: 10px;"> <div style="width: 5px; height: 20px; background-color: #4169e1; margin-right: 5px;"></div> <div>Limits of PCB Remediation Activities</div> </div> <div>µg/m³ = micrograms per cubic meter</div> |
|--|--|---|



## **Attachment 6 – Data Validation Summary and Analytical Laboratory Reports**

April 11, 2013

George Franklin  
Woodard & Curran - Andover, MA  
40 Shattuck Road., Suite 110  
Andover, MA 01810

Project Location: UMA Dubois Library IAQ  
Client Job Number:  
Project Number: 222955  
Laboratory Work Order Number: 13D0272

Enclosed are results of analyses for samples received by the laboratory on April 5, 2013. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, reading "Meghan E. Kelley". The signature is written in a cursive, flowing style.

Meghan E. Kelley  
Project Manager

Woodard & Curran - Andover, MA  
40 Shattuck Road., Suite 110  
Andover, MA 01810  
ATTN: George Franklin

REPORT DATE: 4/11/2013

PURCHASE ORDER NUMBER:

PROJECT NUMBER: 222955

**ANALYTICAL SUMMARY**

WORK ORDER NUMBER: 13D0272

The results of analyses performed on the following samples submitted to the CON-TEST Analytical Laboratory are found in this report.

PROJECT LOCATION: UMA Dubois Library IAQ

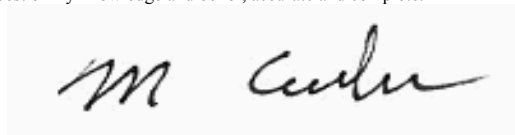
FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
DL-4E-IAS-124	13D0272-01	Indoor air		TO-10A/EPA 680 Modified	
DL-5E-IAS-125	13D0272-02	Indoor air		TO-10A/EPA 680 Modified	
DL-8E-IAS-126	13D0272-03	Indoor air		TO-10A/EPA 680 Modified	
DL-13E-IAS-127	13D0272-04	Indoor air		TO-10A/EPA 680 Modified	
DL-15E-IAS-128	13D0272-05	Indoor air		TO-10A/EPA 680 Modified	
DL-18E-IAS-129	13D0272-06	Indoor air		TO-10A/EPA 680 Modified	
DL-19E-IAS-130	13D0272-07	Indoor air		TO-10A/EPA 680 Modified	
DL-23E-IAS-131	13D0272-08	Indoor air		TO-10A/EPA 680 Modified	
DL-26E-IAS-132	13D0272-09	Indoor air		TO-10A/EPA 680 Modified	
DL-4ED-IAS-133	13D0272-10	Indoor air		TO-10A/EPA 680 Modified	
DL-OUT-IAS-134	13D0272-11	Indoor air		TO-10A/EPA 680 Modified	

#### CASE NARRATIVE SUMMARY

All reported results are within defined laboratory quality control objectives unless listed below or otherwise qualified in this report.

The results of analyses reported only relate to samples submitted to the Con-Test Analytical Laboratory for testing.

I certify that the analyses listed above, unless specifically listed as subcontracted, if any, were performed under my direction according to the approved methodologies listed in this document, and 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.

A handwritten signature in black ink, appearing to read "M. Erickson", is displayed on a light gray rectangular background.

Michael A. Erickson  
Laboratory Director

# ANALYTICAL RESULTS

Project Location: UMA Dubois Library IAQ

Date Received: 4/5/2013

Field Sample #: DL-4E-IAS-124

Sample ID: 13D0272-01

Sample Matrix: Indoor air

Sampled: 4/5/2013 15:30

Sample Description/Location:

Sub Description/Location:

Flow Controller ID:

Sample Type:

Air Volume L: 641.9

Work Order: 13D0272

## TO-10A/EPA 680 Modified

Analyte	Total µg		Flag	ug/m3		Dilution	Date/Time Analyzed	Analyst
	Results	RL		Results	RL			
Monochlorobiphenyls	0.0051	0.0010		0.0079	0.0016	1	4/10/13 12:55	CJM
Dichlorobiphenyls	0.010	0.0010		0.016	0.0016	1	4/10/13 12:55	CJM
Trichlorobiphenyls	0.029	0.0010		0.045	0.0016	1	4/10/13 12:55	CJM
Tetrachlorobiphenyls	0.068	0.0020		0.11	0.0031	1	4/10/13 12:55	CJM
Pentachlorobiphenyls	0.075	0.0020		0.12	0.0031	1	4/10/13 12:55	CJM
Hexachlorobiphenyls	0.023	0.0020		0.035	0.0031	1	4/10/13 12:55	CJM
Heptachlorobiphenyls	0.0048	0.0030		0.0074	0.0047	1	4/10/13 12:55	CJM
Octachlorobiphenyls	ND	0.0030		ND	0.0047	1	4/10/13 12:55	CJM
Nonachlorobiphenyls	ND	0.0050		ND	0.0078	1	4/10/13 12:55	CJM
Decachlorobiphenyl	ND	0.0050		ND	0.0078	1	4/10/13 12:55	CJM
Total Polychlorinated biphenyls	0.21			0.33		1	4/10/13 12:55	CJM

Surrogates	% Recovery	% REC Limits	
Tetrachloro-m-xylene	87.2	50-125	4/10/13 12:55

## ANALYTICAL RESULTS

Project Location: UMA Dubois Library IAQ

Date Received: 4/5/2013

Field Sample #: DL-5E-IAS-125

Sample ID: 13D0272-02

Sample Matrix: Indoor air

Sampled: 4/5/2013 15:29

Sample Description/Location:

Sub Description/Location:

Flow Controller ID:

Sample Type:

Air Volume L: 641.9

Work Order: 13D0272

## TO-10A/EPA 680 Modified

Analyte	Total µg		Flag	ug/m3		Dilution	Date/Time		Analyst
	Results	RL		Results	RL		Analyzed		
Monochlorobiphenyls	0.0053	0.0010		0.0083	0.0016	1	4/10/13	13:25	CJM
Dichlorobiphenyls	0.0090	0.0010		0.014	0.0016	1	4/10/13	13:25	CJM
Trichlorobiphenyls	0.019	0.0010		0.030	0.0016	1	4/10/13	13:25	CJM
Tetrachlorobiphenyls	0.035	0.0020		0.055	0.0031	1	4/10/13	13:25	CJM
Pentachlorobiphenyls	0.030	0.0020		0.046	0.0031	1	4/10/13	13:25	CJM
Hexachlorobiphenyls	0.011	0.0020		0.016	0.0031	1	4/10/13	13:25	CJM
Heptachlorobiphenyls	ND	0.0030		ND	0.0047	1	4/10/13	13:25	CJM
Octachlorobiphenyls	ND	0.0030		ND	0.0047	1	4/10/13	13:25	CJM
Nonachlorobiphenyls	ND	0.0050		ND	0.0078	1	4/10/13	13:25	CJM
Decachlorobiphenyl	ND	0.0050		ND	0.0078	1	4/10/13	13:25	CJM
Total Polychlorinated biphenyls	0.11			0.17		1	4/10/13	13:25	CJM

Surrogates	% Recovery	% REC Limits	
Tetrachloro-m-xylene	90.6	50-125	4/10/13 13:25



# ANALYTICAL RESULTS

Project Location: UMA Dubois Library IAQ

Date Received: 4/5/2013

Field Sample #: DL-8E-IAS-126

Sample ID: 13D0272-03

Sample Matrix: Indoor air

Sampled: 4/5/2013 15:28

Sample Description/Location:

Sub Description/Location:

Flow Controller ID:

Sample Type:

Air Volume L: 631.42

Work Order: 13D0272

## TO-10A/EPA 680 Modified

Analyte	Total µg		Flag	ug/m3		Dilution	Date/Time		Analyst
	Results	RL		Results	RL		Analyzed		
Monochlorobiphenyls	0.0058	0.0010		0.0092	0.0016	1	4/10/13	13:55	CJM
Dichlorobiphenyls	0.011	0.0010		0.017	0.0016	1	4/10/13	13:55	CJM
Trichlorobiphenyls	0.021	0.0010		0.033	0.0016	1	4/10/13	13:55	CJM
Tetrachlorobiphenyls	0.040	0.0020		0.064	0.0032	1	4/10/13	13:55	CJM
Pentachlorobiphenyls	0.036	0.0020		0.058	0.0032	1	4/10/13	13:55	CJM
Hexachlorobiphenyls	0.011	0.0020		0.017	0.0032	1	4/10/13	13:55	CJM
Heptachlorobiphenyls	ND	0.0030		ND	0.0048	1	4/10/13	13:55	CJM
Octachlorobiphenyls	ND	0.0030		ND	0.0048	1	4/10/13	13:55	CJM
Nonachlorobiphenyls	ND	0.0050		ND	0.0079	1	4/10/13	13:55	CJM
Decachlorobiphenyl	ND	0.0050		ND	0.0079	1	4/10/13	13:55	CJM
Total Polychlorinated biphenyls	0.13			0.20		1	4/10/13	13:55	CJM

Surrogates	% Recovery	% REC Limits	
Tetrachloro-m-xylene	76.9	50-125	4/10/13 13:55

# ANALYTICAL RESULTS

Project Location: UMA Dubois Library IAQ

Date Received: 4/5/2013

Field Sample #: DL-13E-IAS-127

Sample ID: 13D0272-04

Sample Matrix: Indoor air

Sampled: 4/5/2013 15:27

Sample Description/Location:

Sub Description/Location:

Flow Controller ID:

Sample Type:

Air Volume L: 634.04

Work Order: 13D0272

## TO-10A/EPA 680 Modified

Analyte	Total µg		Flag	ug/m3		Dilution	Date/Time		Analyst
	Results	RL		Results	RL		Analyzed		
Monochlorobiphenyls	0.0041	0.0010		0.0065	0.0016	1	4/10/13	14:24	CJM
Dichlorobiphenyls	0.0091	0.0010		0.014	0.0016	1	4/10/13	14:24	CJM
Trichlorobiphenyls	0.031	0.0010		0.049	0.0016	1	4/10/13	14:24	CJM
Tetrachlorobiphenyls	0.084	0.0020		0.13	0.0032	1	4/10/13	14:24	CJM
Pentachlorobiphenyls	0.089	0.0020		0.14	0.0032	1	4/10/13	14:24	CJM
Hexachlorobiphenyls	0.013	0.0020		0.020	0.0032	1	4/10/13	14:24	CJM
Heptachlorobiphenyls	ND	0.0030		ND	0.0047	1	4/10/13	14:24	CJM
Octachlorobiphenyls	ND	0.0030		ND	0.0047	1	4/10/13	14:24	CJM
Nonachlorobiphenyls	ND	0.0050		ND	0.0079	1	4/10/13	14:24	CJM
Decachlorobiphenyl	ND	0.0050		ND	0.0079	1	4/10/13	14:24	CJM
Total Polychlorinated biphenyls	0.23			0.36		1	4/10/13	14:24	CJM
Surrogates	% Recovery			% REC Limits					
Tetrachloro-m-xylene	73.9			50-125			4/10/13	14:24	

# ANALYTICAL RESULTS

Project Location: UMA Dubois Library IAQ

Sample Description/Location:

Work Order: 13D0272

Date Received: 4/5/2013

Sub Description/Location:

Field Sample #: DL-15E-IAS-128

Sample ID: 13D0272-05

Flow Controller ID:

Sample Matrix: Indoor air

Sample Type:

Sampled: 4/5/2013 15:26

Air Volume L: 636.66

## TO-10A/EPA 680 Modified

Analyte	Total µg		Flag	ug/m3		Dilution	Date/Time		Analyst
	Results	RL		Results	RL		Analyzed		
Monochlorobiphenyls	0.0090	0.0010		0.014	0.0016	1	4/10/13	14:54	CJM
Dichlorobiphenyls	0.013	0.0010		0.021	0.0016	1	4/10/13	14:54	CJM
Trichlorobiphenyls	0.027	0.0010		0.043	0.0016	1	4/10/13	14:54	CJM
Tetrachlorobiphenyls	0.042	0.0020		0.066	0.0031	1	4/10/13	14:54	CJM
Pentachlorobiphenyls	0.035	0.0020		0.055	0.0031	1	4/10/13	14:54	CJM
Hexachlorobiphenyls	0.0078	0.0020		0.012	0.0031	1	4/10/13	14:54	CJM
Heptachlorobiphenyls	ND	0.0030		ND	0.0047	1	4/10/13	14:54	CJM
Octachlorobiphenyls	ND	0.0030		ND	0.0047	1	4/10/13	14:54	CJM
Nonachlorobiphenyls	ND	0.0050		ND	0.0079	1	4/10/13	14:54	CJM
Decachlorobiphenyl	ND	0.0050		ND	0.0079	1	4/10/13	14:54	CJM
Total Polychlorinated biphenyls	0.13			0.21		1	4/10/13	14:54	CJM

Surrogates	% Recovery	% REC Limits	
Tetrachloro-m-xylene	80.7	50-125	4/10/13 14:54

# ANALYTICAL RESULTS

Project Location: UMA Dubois Library IAQ

Date Received: 4/5/2013

Field Sample #: DL-18E-IAS-129

Sample ID: 13D0272-06

Sample Matrix: Indoor air

Sampled: 4/5/2013 15:25

Sample Description/Location:

Sub Description/Location:

Flow Controller ID:

Sample Type:

Air Volume L: 636.66

Work Order: 13D0272

## TO-10A/EPA 680 Modified

Analyte	Total µg		Flag	ug/m3		Dilution	Date/Time		Analyst
	Results	RL		Results	RL		Analyzed		
Monochlorobiphenyls	0.011	0.0010		0.018	0.0016	1	4/10/13	15:24	CJM
Dichlorobiphenyls	0.014	0.0010		0.021	0.0016	1	4/10/13	15:24	CJM
Trichlorobiphenyls	0.030	0.0010		0.047	0.0016	1	4/10/13	15:24	CJM
Tetrachlorobiphenyls	0.044	0.0020		0.068	0.0031	1	4/10/13	15:24	CJM
Pentachlorobiphenyls	0.035	0.0020		0.055	0.0031	1	4/10/13	15:24	CJM
Hexachlorobiphenyls	0.0096	0.0020		0.015	0.0031	1	4/10/13	15:24	CJM
Heptachlorobiphenyls	ND	0.0030		ND	0.0047	1	4/10/13	15:24	CJM
Octachlorobiphenyls	ND	0.0030		ND	0.0047	1	4/10/13	15:24	CJM
Nonachlorobiphenyls	ND	0.0050		ND	0.0079	1	4/10/13	15:24	CJM
Decachlorobiphenyl	ND	0.0050		ND	0.0079	1	4/10/13	15:24	CJM
Total Polychlorinated biphenyls	0.14			0.23		1	4/10/13	15:24	CJM
Surrogates	% Recovery			% REC Limits					
Tetrachloro-m-xylene	84.0			50-125			4/10/13	15:24	

# ANALYTICAL RESULTS

Project Location: UMA Dubois Library IAQ

Date Received: 4/5/2013

Field Sample #: DL-19E-IAS-130

Sample ID: 13D0272-07

Sample Matrix: Indoor air

Sampled: 4/5/2013 15:24

Sample Description/Location:

Sub Description/Location:

Flow Controller ID:

Sample Type:

Air Volume L: 639.28

Work Order: 13D0272

## TO-10A/EPA 680 Modified

Analyte	Total µg		Flag	ug/m3		Dilution	Date/Time		Analyst
	Results	RL		Results	RL		Analyzed		
Monochlorobiphenyls	0.0081	0.0010		0.013	0.0016	1	4/10/13	15:54	CJM
Dichlorobiphenyls	0.015	0.0010		0.024	0.0016	1	4/10/13	15:54	CJM
Trichlorobiphenyls	0.047	0.0010		0.073	0.0016	1	4/10/13	15:54	CJM
Tetrachlorobiphenyls	0.085	0.0020		0.13	0.0031	1	4/10/13	15:54	CJM
Pentachlorobiphenyls	0.092	0.0020		0.14	0.0031	1	4/10/13	15:54	CJM
Hexachlorobiphenyls	0.017	0.0020		0.026	0.0031	1	4/10/13	15:54	CJM
Heptachlorobiphenyls	ND	0.0030		ND	0.0047	1	4/10/13	15:54	CJM
Octachlorobiphenyls	ND	0.0030		ND	0.0047	1	4/10/13	15:54	CJM
Nonachlorobiphenyls	ND	0.0050		ND	0.0078	1	4/10/13	15:54	CJM
Decachlorobiphenyl	ND	0.0050		ND	0.0078	1	4/10/13	15:54	CJM
Total Polychlorinated biphenyls	0.26			0.41		1	4/10/13	15:54	CJM
Surrogates	% Recovery			% REC Limits					
Tetrachloro-m-xylene	66.6			50-125			4/10/13	15:54	

## ANALYTICAL RESULTS

Project Location: UMA Dubois Library IAQ

Date Received: 4/5/2013

Field Sample #: DL-23E-IAS-131

Sample ID: 13D0272-08

Sample Matrix: Indoor air

Sampled: 4/5/2013 15:22

Sample Description/Location:

Sub Description/Location:

Flow Controller ID:

Sample Type:

Air Volume L: 644.52

Work Order: 13D0272

## TO-10A/EPA 680 Modified

Analyte	Total µg		Flag	ug/m3		Dilution	Date/Time		Analyst
	Results	RL		Results	RL		Analyzed		
Monochlorobiphenyls	0.0094	0.0010		0.015	0.0016	1	4/10/13	16:24	CJM
Dichlorobiphenyls	0.012	0.0010		0.018	0.0016	1	4/10/13	16:24	CJM
Trichlorobiphenyls	0.027	0.0010		0.042	0.0016	1	4/10/13	16:24	CJM
Tetrachlorobiphenyls	0.048	0.0020		0.074	0.0031	1	4/10/13	16:24	CJM
Pentachlorobiphenyls	0.041	0.0020		0.063	0.0031	1	4/10/13	16:24	CJM
Hexachlorobiphenyls	0.0080	0.0020		0.012	0.0031	1	4/10/13	16:24	CJM
Heptachlorobiphenyls	ND	0.0030		ND	0.0047	1	4/10/13	16:24	CJM
Octachlorobiphenyls	ND	0.0030		ND	0.0047	1	4/10/13	16:24	CJM
Nonachlorobiphenyls	ND	0.0050		ND	0.0078	1	4/10/13	16:24	CJM
Decachlorobiphenyl	ND	0.0050		ND	0.0078	1	4/10/13	16:24	CJM
Total Polychlorinated biphenyls	0.15			0.23		1	4/10/13	16:24	CJM

Surrogates	% Recovery	% REC Limits	
Tetrachloro-m-xylene	76.9	50-125	4/10/13 16:24

## ANALYTICAL RESULTS

Project Location: UMA Dubois Library IAQ

Date Received: 4/5/2013

Field Sample #: DL-26E-IAS-132

Sample ID: 13D0272-09

Sample Matrix: Indoor air

Sampled: 4/5/2013 15:20

Sample Description/Location:

Sub Description/Location:

Flow Controller ID:

Sample Type:

Air Volume L: 649.76

Work Order: 13D0272

## TO-10A/EPA 680 Modified

Analyte	Total µg		Flag	ug/m3		Dilution	Date/Time		Analyst
	Results	RL		Results	RL		Analyzed		
Monochlorobiphenyls	0.0059	0.0010		0.0091	0.0015	1	4/10/13 16:54	CJM	
Dichlorobiphenyls	0.0082	0.0010		0.013	0.0015	1	4/10/13 16:54	CJM	
Trichlorobiphenyls	0.016	0.0010		0.025	0.0015	1	4/10/13 16:54	CJM	
Tetrachlorobiphenyls	0.032	0.0020		0.050	0.0031	1	4/10/13 16:54	CJM	
Pentachlorobiphenyls	0.031	0.0020		0.048	0.0031	1	4/10/13 16:54	CJM	
Hexachlorobiphenyls	0.0068	0.0020		0.010	0.0031	1	4/10/13 16:54	CJM	
Heptachlorobiphenyls	ND	0.0030		ND	0.0046	1	4/10/13 16:54	CJM	
Octachlorobiphenyls	ND	0.0030		ND	0.0046	1	4/10/13 16:54	CJM	
Nonachlorobiphenyls	ND	0.0050		ND	0.0077	1	4/10/13 16:54	CJM	
Decachlorobiphenyl	ND	0.0050		ND	0.0077	1	4/10/13 16:54	CJM	
Total Polychlorinated biphenyls	0.10			0.16		1	4/10/13 16:54	CJM	
Surrogates	% Recovery			% REC Limits					
Tetrachloro-m-xylene	69.2			50-125			4/10/13 16:54		

# ANALYTICAL RESULTS

Project Location: UMA Dubois Library IAQ

Date Received: 4/5/2013

Field Sample #: DL-4ED-IAS-133

Sample ID: 13D0272-10

Sample Matrix: Indoor air

Sampled: 4/5/2013 15:30

Sample Description/Location:

Sub Description/Location:

Flow Controller ID:

Sample Type:

Air Volume L: 634.04

Work Order: 13D0272

## TO-10A/EPA 680 Modified

Analyte	Total µg		Flag	ug/m3		Dilution	Date/Time		Analyst
	Results	RL		Results	RL		Analyzed		
Monochlorobiphenyls	0.0046	0.0010		0.0073	0.0016	1	4/10/13	17:23	CJM
Dichlorobiphenyls	0.0094	0.0010		0.015	0.0016	1	4/10/13	17:23	CJM
Trichlorobiphenyls	0.027	0.0010		0.042	0.0016	1	4/10/13	17:23	CJM
Tetrachlorobiphenyls	0.064	0.0020		0.10	0.0032	1	4/10/13	17:23	CJM
Pentachlorobiphenyls	0.070	0.0020		0.11	0.0032	1	4/10/13	17:23	CJM
Hexachlorobiphenyls	0.022	0.0020		0.035	0.0032	1	4/10/13	17:23	CJM
Heptachlorobiphenyls	0.0041	0.0030		0.0065	0.0047	1	4/10/13	17:23	CJM
Octachlorobiphenyls	ND	0.0030		ND	0.0047	1	4/10/13	17:23	CJM
Nonachlorobiphenyls	ND	0.0050		ND	0.0079	1	4/10/13	17:23	CJM
Decachlorobiphenyl	ND	0.0050		ND	0.0079	1	4/10/13	17:23	CJM
Total Polychlorinated biphenyls	0.20			0.32		1	4/10/13	17:23	CJM

Surrogates	% Recovery	% REC Limits	
Tetrachloro-m-xylene	77.3	50-125	4/10/13 17:23



# ANALYTICAL RESULTS

Project Location: UMA Dubois Library IAQ

Date Received: 4/5/2013

Field Sample #: DL-OUT-IAS-134

Sample ID: 13D0272-11

Sample Matrix: Indoor air

Sampled: 4/5/2013 15:35

Sample Description/Location:

Sub Description/Location:

Flow Controller ID:

Sample Type:

Air Volume L: 636.66

Work Order: 13D0272

## TO-10A/EPA 680 Modified

Analyte	Total µg		Flag	ug/m3		Dilution	Date/Time		Analyst
	Results	RL		Results	RL		Analyzed		
Monochlorobiphenyls	ND	0.0010		ND	0.0016	1	4/10/13	17:53	CJM
Dichlorobiphenyls	ND	0.0010		ND	0.0016	1	4/10/13	17:53	CJM
Trichlorobiphenyls	ND	0.0010		ND	0.0016	1	4/10/13	17:53	CJM
Tetrachlorobiphenyls	ND	0.0020		ND	0.0031	1	4/10/13	17:53	CJM
Pentachlorobiphenyls	ND	0.0020		ND	0.0031	1	4/10/13	17:53	CJM
Hexachlorobiphenyls	ND	0.0020		ND	0.0031	1	4/10/13	17:53	CJM
Heptachlorobiphenyls	ND	0.0030		ND	0.0047	1	4/10/13	17:53	CJM
Octachlorobiphenyls	ND	0.0030		ND	0.0047	1	4/10/13	17:53	CJM
Nonachlorobiphenyls	ND	0.0050		ND	0.0079	1	4/10/13	17:53	CJM
Decachlorobiphenyl	ND	0.0050		ND	0.0079	1	4/10/13	17:53	CJM
Total Polychlorinated biphenyls	0.0			0		1	4/10/13	17:53	CJM

Surrogates	% Recovery	% REC Limits	
Tetrachloro-m-xylene	78.2	50-125	4/10/13 17:53

**Sample Extraction Data****Prep Method: SW-846 3540C-TO-10A/EPA 680 Modified**

Lab Number [Field ID]	Batch	Initial [Cartridge	Final [mL]	Date
13D0272-01 [DL-4E-IAS-124]	B070604	1.00	1.00	04/09/13
13D0272-02 [DL-5E-IAS-125]	B070604	1.00	1.00	04/09/13
13D0272-03 [DL-8E-IAS-126]	B070604	1.00	1.00	04/09/13
13D0272-04 [DL-13E-IAS-127]	B070604	1.00	1.00	04/09/13
13D0272-05 [DL-15E-IAS-128]	B070604	1.00	1.00	04/09/13
13D0272-06 [DL-18E-IAS-129]	B070604	1.00	1.00	04/09/13
13D0272-07 [DL-19E-IAS-130]	B070604	1.00	1.00	04/09/13
13D0272-08 [DL-23E-IAS-131]	B070604	1.00	1.00	04/09/13
13D0272-09 [DL-26E-IAS-132]	B070604	1.00	1.00	04/09/13
13D0272-10 [DL-4ED-IAS-133]	B070604	1.00	1.00	04/09/13
13D0272-11 [DL-OUT-IAS-134]	B070604	1.00	1.00	04/09/13

**QUALITY CONTROL**
**PCB Homologues by GC/MS with Soxhlet Extraction - Quality Control**

Analyte	Total µg		ug/m3		Spike Level	Source	%REC	%REC	RPD	RPD	Flag
	Results	RL	Results	RL	Total µg	Result	%REC	Limits	RPD	Limit	

**Batch B070604 - SW-846 3540C**
**Blank (B070604-BLK2)**

Prepared: 04/09/13 Analyzed: 04/10/13

Monochlorobiphenyls	ND	0.0010
Dichlorobiphenyls	ND	0.0010
Trichlorobiphenyls	ND	0.0010
Tetrachlorobiphenyls	ND	0.0020
Pentachlorobiphenyls	ND	0.0020
Hexachlorobiphenyls	ND	0.0020
Heptachlorobiphenyls	ND	0.0030
Octachlorobiphenyls	ND	0.0030
Nonachlorobiphenyls	ND	0.0050
Decachlorobiphenyl	ND	0.0050
Total Polychlorinated biphenyls	0.0	

Surrogate: Tetrachloro-m-xylene 0.155 0.200 77.4 50-125

**LCS (B070604-BS1)**

Prepared: 04/09/13 Analyzed: 04/10/13

Monochlorobiphenyls	0.17	0.0010	0.200	86.2	40-140
Dichlorobiphenyls	0.17	0.0010	0.200	87.1	40-140
Trichlorobiphenyls	0.19	0.0010	0.200	92.7	40-140
Tetrachlorobiphenyls	0.38	0.0020	0.400	95.9	40-140
Pentachlorobiphenyls	0.37	0.0020	0.400	92.6	40-140
Hexachlorobiphenyls	0.35	0.0020	0.400	88.4	40-140
Heptachlorobiphenyls	0.54	0.0030	0.600	90.5	40-140
Octachlorobiphenyls	0.53	0.0030	0.600	88.8	40-140
Nonachlorobiphenyls	0.96	0.0050	1.00	96.2	40-140
Decachlorobiphenyl	0.94	0.0050	1.00	93.8	40-140

Surrogate: Tetrachloro-m-xylene 0.204 0.200 102 50-125

**LCS Dup (B070604-BSD1)**

Prepared: 04/09/13 Analyzed: 04/10/13

Monochlorobiphenyls	0.17	0.0010	0.200	84.5	40-140	2.02	50
Dichlorobiphenyls	0.17	0.0010	0.200	86.9	40-140	0.298	50
Trichlorobiphenyls	0.18	0.0010	0.200	91.8	40-140	0.983	50
Tetrachlorobiphenyls	0.38	0.0020	0.400	94.4	40-140	1.60	50
Pentachlorobiphenyls	0.38	0.0020	0.400	94.6	40-140	2.20	50
Hexachlorobiphenyls	0.36	0.0020	0.400	90.7	40-140	2.58	50
Heptachlorobiphenyls	0.56	0.0030	0.600	93.3	40-140	3.05	50
Octachlorobiphenyls	0.55	0.0030	0.600	92.4	40-140	4.00	50
Nonachlorobiphenyls	1.0	0.0050	1.00	103	40-140	6.47	50
Decachlorobiphenyl	1.0	0.0050	1.00	105	40-140	11.2	50

Surrogate: Tetrachloro-m-xylene 0.185 0.200 92.5 50-125

**FLAG/QUALIFIER SUMMARY**

- \* QC result is outside of established limits.
- † Wide recovery limits established for difficult compound.
- ‡ Wide RPD limits established for difficult compound.
- # Data exceeded client recommended or regulatory level

Percent recoveries and relative percent differences (RPDs) are determined by the software using values in the calculation which have not been rounded.



Company Name: Woodward & Lothrop

Address: 40 Shorthall Rd Suite

Audover, Mass

Attention: J Hamed, G Frankha, R R. inard

Project Location: UMA Dubai's Library IAAQ

Sampled By: Kim Rinal

**Proposal Provided? (For Billing purposes)**

	<input type="checkbox"/> yes	<input type="checkbox"/> no	proposal date
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DATA DELIVERY (check one):				
OFAX	<input checked="" type="checkbox"/> EMAIL	<input type="checkbox"/> WEBSITE	CLIENT	
Fax #	Jurnal e mondial curarea, com			
Email:	jurnal@e-mondial.ro			
Format:	<input checked="" type="checkbox"/> EXCEL	<input checked="" type="checkbox"/> PDF	<input type="checkbox"/> GIS KEY	<input type="checkbox"/> OTHER
Date Sampled	ONLY USE WHEN USING PUMPS			
Start	Stop	Total	Flow Rate	Volume

[illegible]

Field ID	Sample Description	Media	Lab #	Date Time	Date Time	Minutes Sampled	M <sup>3</sup> /Min. or L / Min.	Liters or M <sup>3</sup>	Matrix Code*	EPA 6	Flow Control
DL-4E-IA5-124		PvF	01	4/5/13	0330 -0735	245	2.62	641.9	IA	✓	
DL-5E-IA5-125		PvF	02		0329 -0734	245	2.62	641.9	IA	✓	
DL-8E-IA5-126		PvF	03		0328 -0728	241	2.62	631.42	IA	✓	
DL-13E-IA5-127		PvF	04		0327 -0729	242	2.62	634.04	IA	✓	
DL-15E-IA5-128		PvF	05	4/5/13	0326 -0719	243	2.62	636.66	IA	✓	
DL-18E-IA5-129		PvF	06		0325 -0728	243	2.62	636.66	IA	✓	
DL-19E-IA5-130		PvF	07		0324 -0728	244	2.62	639.28	IA	✓	
DL-23E-IA5-131		PvF	08		0322 -0728	246	2.62	644.52	IA	✓	

**CLIENT COMMENTS:**

① PuFs to be analyzed for PCB homologs by EPA 6804

②  $RL < 0.10 \text{ ug/m}^3$

Relinquished by (signature) KAZIM W3C Date/Time: 4/5/13 1700

Received by: (signature) *[Signature]*  
Date/Time: 4/5/13 12:00

Relinquished by: (signature)	Date/Time:
------------------------------	------------

Received by: (signature)	Date/Time:
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## Turnaround \*\*

☒ ~~7 Day~~

☐ 10-Day  
☒ Other **S**

**RUSH \***

\*24-Hr ☐ \*48-Hr  
\*72-Hr ☐ \*4-Day

### **Special Requirements**

ns: \_\_\_\_\_

Improvement/RCP? ☐ Y ☐ N

☐ Data Package ☐ ☐ IN  
 (Surcharge Applies)

Detection Limits: 20.10 us

**\*Matrix Code:**

SG= SOIL GAS

IA = INDOOR AIR

SS = SUB SLAF

D = DUP  
BI - BI ANK

**\*\*Media Codes:**

**S=**summa can

**TB**=tedlar bag

$P = P_{UF}$   
 $T = \text{tube}$

F= filter



Phone: 413-525-2332  
Fax: 413-525-6405  
Email: info@contestlabs.com  
www.contestlabs.com

# AIR SAMPLE CHAIN OF CUSTODY RECORD

39 SPRUCE ST  
EAST LONGMEADOW, MA 01028

Page 2 of 2

Company Name: Woodward & Lozano  
Address: 440 Shoreline Road

Attention: Andrew, Mass

Project Location: UMA Dibous Library, FA  
Sampled By: Kim Rinal

Proposal Provided? (For Billing purposes)

☐ yes ☐ no

Telephone: 1300072  
Project # 222955  
Client PO #

DATA DELIVERY (check one):  
☐ FAX ☒ EMAIL ☐ WEBSITE CLIENT

Fax #: see page 1  
Email:

Format: ☒ EXCEL ☐ PDF ☐ GIS KEY ☐ OTHER

Date Sampled ☐ ONLY USE WHEN USING PUMPS

Field ID	Sample Description	Media	Lab #	Date Time	Stop Time	Total Minutes Sampled	Flow Rate M <sup>3</sup> /Min. or L / Min.	Volume Liters or M <sup>3</sup>	Matrix Code*
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DL-26E-FA5-132	PVF		09	4/5/13	0320	248	2.62	649.76	IA
DL-4ED-FA5-133	PVF		10	4/5/13	0330	242	2.62	634.04	IA
DL-0VF-FA5-134	PVF		11	4/5/13	0335	243	2.62	636.66	IA

Laboratory Comments: DL PVFs to be analyzed for PCB Homologs by EPA 680A  
2 DL ± 0.10 ug/m<sup>3</sup>

CLIENT COMMENTS:

ANALYSIS REQUESTED	"Hg"	Please fill out completely, sign, date and retain the yellow copy for your record
I n i t i a l s	P r e s e r v e d	Summa canisters w retained for a minim of 14 days after sampling date prior cleaning.
		Summa Canister ID
I n i t i a l s	P r e s e r v e d	Flow Contro ID

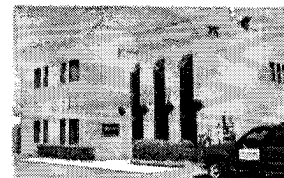
Relinquished by: (signature) [Signature] Date/Time: 4/5/13 1700  
Received by: (signature) [Signature] Date/Time: 4/5/13 19:00  
Relinquished by: (signature) Date/Time:  
Received by: (signature) Date/Time:

Turnaround \*\*  
☐ 7-Day  
☒ 10-Day  
☐ 14-Day  
☐ 24-Hr ☐ 48-Hr  
☐ 72-Hr ☐ 4-Day  
Approval Required

Special Requirements  
Regulations:  
Data Enhancement/RCPP? ☐ Y ☐ N  
Enhanced Data Package ☐ Y ☐ N  
(Surcharge Applies)  
Required Detection Limits: 40.10 ug/m<sup>3</sup>  
Other:

Matrix Code: IA= INDOOR AIR  
SG= SQL GAS  
AMB= AMBIENT  
SS= SUB SLAB  
D= DUP  
BL= BLANK  
O= other  
Media Codes:  
S= Summa can  
TB= Tedlar bag  
P= PUF  
F= filter  
C= cassette  
O= Other

39 Spruce St.  
East Longmeadow, MA. 01028  
P: 413-525-2332  
F: 413-525-6405  
www.contestlabs.com



## Sample Receipt Checklist

CLIENT NAME: Woodard & Curran RECEIVED BY: KKM DATE: 4/5/13

1) Was the chain(s) of custody relinquished and signed? Yes No No CoC Included

2) Does the chain agree with the samples?

Yes No

If not, explain:

3) Are all the samples in good condition?

Yes No

If not, explain:

4) How were the samples received:

On Ice ☒ Direct from Sampling ☐ Ambient ☐ In Cooler(s) ☒

Were the samples received in Temperature Compliance of (2-6°C)? Yes No N/A

Temperature °C by Temp blank \_\_\_\_\_ Temperature °C by Temp gun 5.3

5) Are there Dissolved samples for the lab to filter?

Yes No

Who was notified \_\_\_\_\_ Date \_\_\_\_\_ Time \_\_\_\_\_

6) Are there any RUSH or SHORT HOLDING TIME samples?

Yes No

Who was notified \_\_\_\_\_ Date \_\_\_\_\_ Time \_\_\_\_\_

7) Location where samples are stored:

19

Permission to subcontract samples? Yes No  
(Walk-in clients only) if not already approved  
Client Signature: \_\_\_\_\_

8) Do all samples have the proper Acid pH: Yes No N/A

9) Do all samples have the proper Base pH: Yes No N/A

10) Was the PC notified of any discrepancies with the CoC vs the samples: Yes No N/A

### Containers received at Con-Test

	# of containers		# of containers
1 Liter Amber		8 oz amber/clear jar	
500 mL Amber		4 oz amber/clear jar	
250 mL Amber (8oz amber)		2 oz amber/clear jar	
1 Liter Plastic		Air Cassette	
500 mL Plastic		Hg/Hopcalite Tube	
250 mL plastic		Plastic Bag / Ziploc	
40 mL Vial - type listed below		PM 2.5 / PM 10	
Colisure / bacteria bottle		PUF Cartridge	<u>11</u>
Dissolved Oxygen bottle		SOC Kit	
Encore		TO-17 Tubes	
Flashpoint bottle		Non-ConTest Container	
Perchlorate Kit		Other glass jar	
Other		Other	

Laboratory Comments:

40 mL vials: # HCl \_\_\_\_\_ # Methanol \_\_\_\_\_

Time and Date Frozen:

Doc# 277 # Bisulfate \_\_\_\_\_ # DI Water \_\_\_\_\_

Rev. 3 May 2012 # Thiosulfate \_\_\_\_\_ Unpreserved



September 10, 2013

George Franklin  
Woodard & Curran - Andover, MA  
40 Shattuck Road., Suite 110  
Andover, MA 01810

Project Location: UMass LTMM  
Client Job Number:  
Project Number: 225971  
Laboratory Work Order Number: 13I0083

Enclosed are results of analyses for samples received by the laboratory on September 4, 2013. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Meghan E. Kelley  
Project Manager

Woodard & Curran - Andover, MA  
40 Shattuck Road., Suite 110  
Andover, MA 01810  
ATTN: George Franklin

REPORT DATE: 9/10/2013

PURCHASE ORDER NUMBER:

PROJECT NUMBER: 225971

#### ANALYTICAL SUMMARY

WORK ORDER NUMBER: 1310083

The results of analyses performed on the following samples submitted to the CON-TEST Analytical Laboratory are found in this report.

PROJECT LOCATION: UMass LTMM

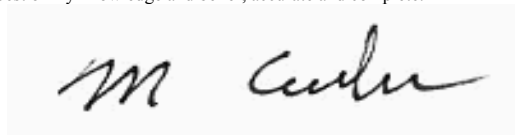
FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
LTWH-VWC-001	1310083-01	Wipe		SW-846 8082A	
LTWH-VWC-002	1310083-02	Wipe		SW-846 8082A	
LTWH-VWC-003	1310083-03	Wipe		SW-846 8082A	

#### CASE NARRATIVE SUMMARY

All reported results are within defined laboratory quality control objectives unless listed below or otherwise qualified in this report.

The results of analyses reported only relate to samples submitted to the Con-Test Analytical Laboratory for testing.

I certify that the analyses listed above, unless specifically listed as subcontracted, if any, were performed under my direction according to the approved methodologies listed in this document, and 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.

A handwritten signature in black ink, appearing to read "M. Erickson", is displayed on a light gray rectangular background.

Michael A. Erickson  
Laboratory Director

Project Location: UMass LTMM

Sample Description:

Work Order: 1310083

Date Received: 9/4/2013

Field Sample #: LTWH-VWC-001

Sampled: 9/3/2013 11:23

Sample ID: 1310083-01

Sample Matrix: Wipe

**Polychlorinated Biphenyls with 3540 Soxhlet Extraction**

Analyte	Results	RL	Units	Dilution	Flag	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	9/5/13	9/6/13 13:35	MJC
Aroclor-1221 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	9/5/13	9/6/13 13:35	MJC
Aroclor-1232 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	9/5/13	9/6/13 13:35	MJC
Aroclor-1242 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	9/5/13	9/6/13 13:35	MJC
Aroclor-1248 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	9/5/13	9/6/13 13:35	MJC
Aroclor-1254 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	9/5/13	9/6/13 13:35	MJC
Aroclor-1260 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	9/5/13	9/6/13 13:35	MJC
Aroclor-1262 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	9/5/13	9/6/13 13:35	MJC
Aroclor-1268 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	9/5/13	9/6/13 13:35	MJC
Surrogates	% Recovery	Recovery Limits	Flag						
Decachlorobiphenyl [1]	105	30-150							
Decachlorobiphenyl [2]	105	30-150							
Tetrachloro-m-xylene [1]	98.4	30-150							
Tetrachloro-m-xylene [2]	102	30-150							

Project Location: UMass LTMM

Sample Description:

Work Order: 1310083

Date Received: 9/4/2013

Field Sample #: LTWH-VWC-002

Sampled: 9/3/2013 11:36

Sample ID: 1310083-02

Sample Matrix: Wipe

**Polychlorinated Biphenyls with 3540 Soxhlet Extraction**

Analyte	Results	RL	Units	Dilution	Flag	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	9/5/13	9/6/13 13:48	MJC
Aroclor-1221 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	9/5/13	9/6/13 13:48	MJC
Aroclor-1232 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	9/5/13	9/6/13 13:48	MJC
Aroclor-1242 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	9/5/13	9/6/13 13:48	MJC
Aroclor-1248 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	9/5/13	9/6/13 13:48	MJC
Aroclor-1254 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	9/5/13	9/6/13 13:48	MJC
Aroclor-1260 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	9/5/13	9/6/13 13:48	MJC
Aroclor-1262 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	9/5/13	9/6/13 13:48	MJC
Aroclor-1268 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	9/5/13	9/6/13 13:48	MJC
Surrogates	% Recovery	Recovery Limits	Flag						
Decachlorobiphenyl [1]	106	30-150							
Decachlorobiphenyl [2]	105	30-150							
Tetrachloro-m-xylene [1]	98.3	30-150							
Tetrachloro-m-xylene [2]	101	30-150							

Project Location: UMass LTMM

Sample Description:

Work Order: 1310083

Date Received: 9/4/2013

Field Sample #: LTWH-VWC-003

Sampled: 9/3/2013 11:41

Sample ID: 1310083-03

Sample Matrix: Wipe

**Polychlorinated Biphenyls with 3540 Soxhlet Extraction**

Analyte	Results	RL	Units	Dilution	Flag	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	9/5/13	9/6/13 14:00	MJC
Aroclor-1221 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	9/5/13	9/6/13 14:00	MJC
Aroclor-1232 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	9/5/13	9/6/13 14:00	MJC
Aroclor-1242 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	9/5/13	9/6/13 14:00	MJC
Aroclor-1248 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	9/5/13	9/6/13 14:00	MJC
Aroclor-1254 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	9/5/13	9/6/13 14:00	MJC
Aroclor-1260 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	9/5/13	9/6/13 14:00	MJC
Aroclor-1262 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	9/5/13	9/6/13 14:00	MJC
Aroclor-1268 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	9/5/13	9/6/13 14:00	MJC
Surrogates	% Recovery	Recovery Limits	Flag						
Decachlorobiphenyl [1]	92.7	30-150							
Decachlorobiphenyl [2]	91.8	30-150							
Tetrachloro-m-xylene [1]	86.7	30-150							
Tetrachloro-m-xylene [2]	89.3	30-150							

**Sample Extraction Data**

**Prep Method: SW-846 3540C-SW-846 8082A**

Lab Number [Field ID]	Batch	Initial [Wipe]	Final [mL]	Date
1310083-01 [LTWH-VWC-001]	B080168	1.00	10.0	09/05/13
1310083-02 [LTWH-VWC-002]	B080168	1.00	10.0	09/05/13
1310083-03 [LTWH-VWC-003]	B080168	1.00	10.0	09/05/13

**QUALITY CONTROL**
**Polychlorinated Biphenyls with 3540 Soxhlet Extraction - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch B080168 - SW-846 3540C**
**Blank (B080168-BLK1)**

Prepared: 09/05/13 Analyzed: 09/06/13

Aroclor-1016	ND	0.20	µg/Wipe							
Aroclor-1016 [2C]	ND	0.20	µg/Wipe							
Aroclor-1221	ND	0.20	µg/Wipe							
Aroclor-1221 [2C]	ND	0.20	µg/Wipe							
Aroclor-1232	ND	0.20	µg/Wipe							
Aroclor-1232 [2C]	ND	0.20	µg/Wipe							
Aroclor-1242	ND	0.20	µg/Wipe							
Aroclor-1242 [2C]	ND	0.20	µg/Wipe							
Aroclor-1248	ND	0.20	µg/Wipe							
Aroclor-1248 [2C]	ND	0.20	µg/Wipe							
Aroclor-1254	ND	0.20	µg/Wipe							
Aroclor-1254 [2C]	ND	0.20	µg/Wipe							
Aroclor-1260	ND	0.20	µg/Wipe							
Aroclor-1260 [2C]	ND	0.20	µg/Wipe							
Aroclor-1262	ND	0.20	µg/Wipe							
Aroclor-1262 [2C]	ND	0.20	µg/Wipe							
Aroclor-1268	ND	0.20	µg/Wipe							
Aroclor-1268 [2C]	ND	0.20	µg/Wipe							
Surrogate: Decachlorobiphenyl	2.20		µg/Wipe	2.00		110	30-150			
Surrogate: Decachlorobiphenyl [2C]	2.17		µg/Wipe	2.00		108	30-150			
Surrogate: Tetrachloro-m-xylene	2.00		µg/Wipe	2.00		100	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	2.03		µg/Wipe	2.00		102	30-150			

**LCS (B080168-BS1)**

Prepared: 09/05/13 Analyzed: 09/06/13

Aroclor-1016	0.50	0.20	µg/Wipe	0.500		100	40-140			
Aroclor-1016 [2C]	0.50	0.20	µg/Wipe	0.500		99.7	40-140			
Aroclor-1260	0.49	0.20	µg/Wipe	0.500		97.8	40-140			
Aroclor-1260 [2C]	0.48	0.20	µg/Wipe	0.500		95.8	40-140			
Surrogate: Decachlorobiphenyl	1.99		µg/Wipe	2.00		99.5	30-150			
Surrogate: Decachlorobiphenyl [2C]	1.96		µg/Wipe	2.00		98.1	30-150			
Surrogate: Tetrachloro-m-xylene	1.86		µg/Wipe	2.00		93.2	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	1.88		µg/Wipe	2.00		94.2	30-150			

**LCS Dup (B080168-BSD1)**

Prepared: 09/05/13 Analyzed: 09/06/13

Aroclor-1016	0.56	0.20	µg/Wipe	0.500		112	40-140	11.6	30	
Aroclor-1016 [2C]	0.56	0.20	µg/Wipe	0.500		111	40-140	11.1	30	
Aroclor-1260	0.56	0.20	µg/Wipe	0.500		111	40-140	12.9	30	
Aroclor-1260 [2C]	0.55	0.20	µg/Wipe	0.500		110	40-140	13.8	30	
Surrogate: Decachlorobiphenyl	2.24		µg/Wipe	2.00		112	30-150			
Surrogate: Decachlorobiphenyl [2C]	2.22		µg/Wipe	2.00		111	30-150			
Surrogate: Tetrachloro-m-xylene	2.06		µg/Wipe	2.00		103	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	2.10		µg/Wipe	2.00		105	30-150			



**FLAG/QUALIFIER SUMMARY**

- \* QC result is outside of established limits.
- † Wide recovery limits established for difficult compound.
- ‡ Wide RPD limits established for difficult compound.
- # Data exceeded client recommended or regulatory level

Percent recoveries and relative percent differences (RPDs) are determined by the software using values in the calculation which have not been rounded.

No results have been blank subtracted unless specified in the case narrative section.

# CERTIFICATIONS

## Certified Analyses included in this Report

### Analyte

### Certifications

## No certified Analyses included in this Report

The CON-TEST Environmental Laboratory operates under the following certifications and accreditations:

Code	Description	Number	Expires
AIHA	AIHA-LAP, LLC	100033	02/1/2014
MA	Massachusetts DEP	M-MA100	06/30/2014
CT	Connecticut Department of Public Health	PH-0567	09/30/2013
NY	New York State Department of Health	10899 NELAP	04/1/2014
NH-S	New Hampshire Environmental Lab	2516 NELAP	02/5/2014
RI	Rhode Island Department of Health	LAO00112	12/30/2013
NC	North Carolina Div. of Water Quality	652	12/31/2013
NJ	New Jersey DEP	MA007 NELAP	06/30/2014
FL	Florida Department of Health	E871027 NELAP	06/30/2014
VT	Vermont Department of Health Lead Laboratory	LL015036	07/30/2014
WA	State of Washington Department of Ecology	C2065	02/23/2014
ME	State of Maine	2011028	06/9/2015
VA	Commonwealth of Virginia	460217	12/14/2013
NH-P	New Hampshire Environmental Lab	2557 NELAP	09/6/2012



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Telephone: 978 557 8130

Project # 225695

**Client PO#**

**DATA DELIVERY** (check all that apply)  
☐ FAX ☒ EMAIL ☐ WEBSITE

Fax #

Email: gtrankin@hawaii1

Format: ☒ PDF ☐ EXCEL ☐ GIS  
☐ OTHER \_\_\_\_\_

V= viral  
S=summa can  
T=tedlar bag  
O=Other

**\*\*Preservation**

I = Iced  
H = HCL  
M = Methanol  
N = Nitric Acid  
S = Sulfuric Acid  
B = Sodium bisulfate  
X = Na hydroxide  
T = Na thiosulfate  
O = Other

**\*Matrix Code:**

GW= groundwater  
WW= wastewater

**Please use the following codes to let Con-T test know if a specific sample may be high in concentration in Matrix/Conc. Code Box:**

H - High; M - Medium; L - Low; C - Clean; U - Unknown

☐ Turnaround 7-Day

10-Day

☒ Other ~~2 DAY~~  
RUSH †

	24-Hr	48-Hr
1	0.00	0.00
2	0.00	0.00
3	0.00	0.00
4	0.00	0.00
5	0.00	0.00
6	0.00	0.00
7	0.00	0.00
8	0.00	0.00
9	0.00	0.00
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72-Hr  $\square$  4-Day

## Detection Limit Requirements

## Is your project MCP or RCP ?

- ☐ MCP Analytical Certification Form Required
- ☐ RCP Analysis Certification Form Required
- ☐ MA State DW Form Required PWSID #

**ACCREDITED IN ACCORDANCE WITH**  
**ne lac**  
**ACCREDITED LABORATORY**  
**AIHA**  
Environmental Lead  
and Chemical Hygiene  
Level 2 Training  
Unit 12320010

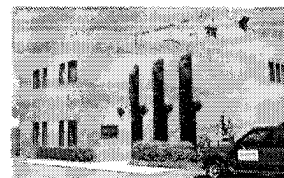
**NELAC & AIHA Certified**  
**WRE/DRE Certified**

PLEASE BE CAREFUL NOT TO CONTAMINATE THIS DOCUMENT

39 Spruce St.  
East Longmeadow, MA. 01028  
P: 413-525-2332  
F: 413-525-6405  
www.contestlabs.com



Page 1 of 2



## Sample Receipt Checklist

CLIENT NAME: Woodard & Curran RECEIVED BY: JMH DATE: 9/4/13

1) Was the chain(s) of custody relinquished and signed? Yes No No CoC Included

2) Does the chain agree with the samples?

If not, explain:

3) Are all the samples in good condition?

If not, explain:

4) How were the samples received:

On Ice ☒ Direct from Sampling ☐ Ambient ☐ In Cooler(s) ☒

Were the samples received in Temperature Compliance of (2-6°C)? Yes No N/A

Temperature °C by Temp blank \_\_\_\_\_ Temperature °C by Temp gun 4.1°C

5) Are there Dissolved samples for the lab to filter?

Yes No

Who was notified \_\_\_\_\_ Date \_\_\_\_\_ Time \_\_\_\_\_

6) Are there any RUSH or SHORT HOLDING TIME samples?

Yes No

Who was notified \_\_\_\_\_ Date \_\_\_\_\_ Time \_\_\_\_\_

7) Location where samples are stored:

19

Permission to subcontract samples? Yes No  
(Walk-in clients only) if not already approved  
Client Signature: \_\_\_\_\_

8) Do all samples have the proper Acid pH: Yes No N/A

9) Do all samples have the proper Base pH: Yes No N/A

10) Was the PC notified of any discrepancies with the CoC vs the samples: Yes No N/A

### Containers received at Con-Test

	# of containers		# of containers
1 Liter Amber		8 oz amber/clear jar	
500 mL Amber		4 oz amber/clear jar	<u>3</u>
250 mL Amber (8oz amber)		2 oz amber/clear jar	
1 Liter Plastic		Plastic Bag / Ziploc	
500 mL Plastic		SOC Kit	
250 mL plastic		Non-ConTest Container	
40 mL Vial - type listed below		Perchlorate Kit	
Colisure / bacteria bottle		Flashpoint bottle	
Dissolved Oxygen bottle		Other glass jar	
Encore		Other	

Laboratory Comments:

40 mL vials: # HCl \_\_\_\_\_ # Methanol \_\_\_\_\_

Doc# 277 # Bisulfate \_\_\_\_\_ # DI Water \_\_\_\_\_

Rev. 4 August 2013 # Thiosulfate \_\_\_\_\_ Unpreserved

Time and Date Frozen:

Page 2 of 2  
**Login Sample Receipt Checklist**  
 (Rejection Criteria Listing - Using Sample Acceptance Policy)  
 Any False statement will be brought to the attention of Client

Question	Answer (True/False)	Comment
	T/F/NA	
1) The cooler's custody seal, if present, is intact.	NA	
2) The cooler or samples do not appear to have been compromised or tampered with.	T	
3) Samples were received on ice.	T	
4) Cooler Temperature is acceptable.	T	
5) Cooler Temperature is recorded.	T	
6) COC is filled out in ink and legible.	T	
7) COC is filled out with all pertinent information.	T	
8) Field Sampler's name present on COC.	T	
9) There are no discrepancies between the sample IDs on the container and the COC.	T	
10) Samples are received within Holding Time.	T	
11) Sample containers have legible labels.	T	
12) Containers are not broken or leaking.	T	
13) Air Cassettes are not broken/open.	NA	
14) Sample collection date/times are provided.	T	
15) Appropriate sample containers are used.	T	
16) Proper collection media used.	T	
17) No headspace sample bottles are completely filled.	NA	
18) There is sufficient volume for all requested analyses, including any requested MS/MSDs.	T	
19) Trip blanks provided if applicable.	NA	
20) VOA sample vials do not have head space or bubble is <6mm (1/4") in diameter.	NA	
21) Samples do not require splitting or compositing.	T	

Doc #277 Rev. 4 August 2013      Who notified of False statements?  
 Log-In Technician Initials: JMK

Date/Time: 9/4/13 1835

**13I0083-01** LTWH-VWC-001

Analyte	Results		%RPD
Surrogates			
Tetrachloro-m-xylene	1.97	2.03139	3.07
Decachlorobiphenyl	2.10	2.09428	0.273

**13I0083-02** LTWH-VWC-002

Analyte	Results		%RPD
Surrogates			
Decachlorobiphenyl	2.11	2.10929	0.0337
Tetrachloro-m-xylene	1.97	2.02145	2.58

**13I0083-03** LTWH-VWC-003

Analyte	Results		%RPD
Surrogates			
Decachlorobiphenyl	1.85	1.83687	0.712
Tetrachloro-m-xylene	1.73	1.78521	3.14

**B080168-BLK1** Blank

Analyte	Results		%RPD
Surrogates			
Tetrachloro-m-xylene	2.00	2.03067	1.52
Decachlorobiphenyl	2.20	2.16953	1.39

**B080168-BS1** LCS

Analyte	Results		%RPD
Aroclor-1260	0.49	0.47875	2.32
Aroclor-1016	0.50	0.49847	0.306
Surrogates			
Decachlorobiphenyl	1.99	1.96228	1.4
Tetrachloro-m-xylene	1.86	1.88478	1.32

**B080168-BSD1** LCS Dup

Analyte	Results		%RPD
Aroclor-1016	0.56	0.55689	0.557
Aroclor-1260	0.56	0.54947	1.9
Surrogates			
Tetrachloro-m-xylene	2.06	2.09882	1.87
Decachlorobiphenyl	2.24	2.21795	0.989

October 22, 2013

George Franklin  
Woodard & Curran - Andover, MA  
40 Shattuck Road., Suite 110  
Andover, MA 01810

Project Location: UMASS Dubois Library  
Client Job Number:  
Project Number: 225695  
Laboratory Work Order Number: 13J0483

Enclosed are results of analyses for samples received by the laboratory on October 11, 2013. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Meghan E. Kelley  
Project Manager

Woodard & Curran - Andover, MA  
40 Shattuck Road., Suite 110  
Andover, MA 01810  
ATTN: George Franklin

REPORT DATE: 10/22/2013

PURCHASE ORDER NUMBER:

PROJECT NUMBER: 225695

**ANALYTICAL SUMMARY**

WORK ORDER NUMBER: 13J0483

The results of analyses performed on the following samples submitted to the CON-TEST Analytical Laboratory are found in this report.

PROJECT LOCATION: UMASS Dubois Library

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
DL-4E-IAS-135	13J0483-01	Indoor air		TO-10A/EPA 680 Modified	
DL-5E-IAS-136	13J0483-02	Indoor air		TO-10A/EPA 680 Modified	
DL-8E-IAS-137	13J0483-03	Indoor air		TO-10A/EPA 680 Modified	
DL-13E-IAS-138	13J0483-04	Indoor air		TO-10A/EPA 680 Modified	
DL-15E-IAS-139	13J0483-05	Indoor air		TO-10A/EPA 680 Modified	
DL-19E-IAS-140	13J0483-06	Indoor air		TO-10A/EPA 680 Modified	
DL-23E-IAS-141	13J0483-07	Indoor air		TO-10A/EPA 680 Modified	
DL-26E-IAS-142	13J0483-08	Indoor air		TO-10A/EPA 680 Modified	
DL-4ED-IAS-143	13J0483-09	Indoor air		TO-10A/EPA 680 Modified	
DL-OUT-IAS-144	13J0483-10	Indoor air		TO-10A/EPA 680 Modified	
DL-18E-IAS-145	13J0483-11	Indoor air		TO-10A/EPA 680 Modified	



**CASE NARRATIVE SUMMARY**

All reported results are within defined laboratory quality control objectives unless listed below or otherwise qualified in this report.

**TO-10A/EPA 680 Modified****Qualifications:**

Internal standard area >150% of associated calibration internal standard area. Reanalysis resulted in similar internal standard non-conformance.

**Analyte & Samples(s) Qualified:****Chrysene-d12**

13J0483-02[DL-5E-IAS-136]

The results of analyses reported only relate to samples submitted to the Con-Test Analytical Laboratory for testing.

I certify that the analyses listed above, unless specifically listed as subcontracted, if any, were performed under my direction according to the approved methodologies listed in this document, and 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.



Daren J. Damboragian  
Laboratory Manager

## ANALYTICAL RESULTS

Project Location: UMASS Dubois Library

Date Received: 10/11/2013

Field Sample #: DL-4E-IAS-135

Sample ID: 13J0483-01

Sample Matrix: Indoor air

Sampled: 10/11/2013 07:28

Sample Description/Location:

Sub Description/Location:

Flow Controller ID:

Sample Type:

Air Volume L: 630.24

Work Order: 13J0483

## TO-10A/EPA 680 Modified

Analyte	Total µg		Flag/Qual	ug/m3		Dilution	Date/Time		
	Results	RL		Results	RL		Analyzed	Analyst	
Monochlorobiphenyls	0.010	0.0010		0.017	0.0016	1	10/22/13	10:29	CJM
Dichlorobiphenyls	0.021	0.0010		0.033	0.0016	1	10/22/13	10:29	CJM
Trichlorobiphenyls	0.050	0.0010		0.079	0.0016	1	10/22/13	10:29	CJM
Tetrachlorobiphenyls	0.10	0.0020		0.16	0.0032	1	10/22/13	10:29	CJM
Pentachlorobiphenyls	0.10	0.0020		0.16	0.0032	1	10/22/13	10:29	CJM
Hexachlorobiphenyls	0.036	0.0020		0.057	0.0032	1	10/22/13	10:29	CJM
Heptachlorobiphenyls	0.0083	0.0030		0.013	0.0048	1	10/22/13	10:29	CJM
Octachlorobiphenyls	ND	0.0030		ND	0.0048	1	10/22/13	10:29	CJM
Nonachlorobiphenyls	ND	0.0050		ND	0.0079	1	10/22/13	10:29	CJM
Decachlorobiphenyl	ND	0.0050		ND	0.0079	1	10/22/13	10:29	CJM
Total Polychlorinated biphenyls	0.33			0.53		1	10/22/13	10:29	CJM

Surrogates	% Recovery	% REC Limits	
Tetrachloro-m-xylene	64.6	50-125	10/22/13 10:29

## ANALYTICAL RESULTS

Project Location: UMASS Dubois Library

Date Received: 10/11/2013

Field Sample #: DL-5E-IAS-136

Sample ID: 13J0483-02

Sample Matrix: Indoor air

Sampled: 10/11/2013 07:26

Sample Description/Location:

Sub Description/Location:

Work Order: 13J0483

Flow Controller ID:

Sample Type:

Air Volume L: 633.83

## TO-10A/EPA 680 Modified

Analyte	Total µg		Flag/Qual	ug/m3		Dilution	Date/Time		
	Results	RL		Results	RL		Analyzed	Analyst	
Monochlorobiphenyls	0.0078	0.0010		0.012	0.0016	1	10/22/13	15:54	CJM
Dichlorobiphenyls	0.0096	0.0010		0.015	0.0016	1	10/22/13	15:54	CJM
Trichlorobiphenyls	0.024	0.0010		0.038	0.0016	1	10/22/13	15:54	CJM
Tetrachlorobiphenyls	0.040	0.0020		0.064	0.0032	1	10/22/13	15:54	CJM
Pentachlorobiphenyls	0.027	0.0020		0.043	0.0032	1	10/22/13	15:54	CJM
Hexachlorobiphenyls	0.012	0.0020		0.019	0.0032	1	10/22/13	15:54	CJM
Heptachlorobiphenyls	ND	0.0030		ND	0.0047	1	10/22/13	15:54	CJM
Octachlorobiphenyls	ND	0.0030		ND	0.0047	1	10/22/13	15:54	CJM
Nonachlorobiphenyls	ND	0.0050		ND	0.0079	1	10/22/13	15:54	CJM
Decachlorobiphenyl	ND	0.0050		ND	0.0079	1	10/22/13	15:54	CJM
Total Polychlorinated biphenyls	0.12			0.19		1	10/22/13	15:54	CJM

Surrogates	% Recovery	% REC Limits	
Tetrachloro-m-xylene	54.0	50-125	10/22/13 15:54

## ANALYTICAL RESULTS

Project Location: UMASS Dubois Library

Date Received: 10/11/2013

Field Sample #: DL-8E-IAS-137

Sample ID: 13J0483-03

Sample Matrix: Indoor air

Sampled: 10/11/2013 07:22

Sample Description/Location:

Sub Description/Location:

Flow Controller ID:

Sample Type:

Air Volume L: 633.36

Work Order: 13J0483

## TO-10A/EPA 680 Modified

Analyte	Total µg		Flag/Qual	ug/m3		Dilution	Date/Time		
	Results	RL		Results	RL		Analyzed	Analyst	
Monochlorobiphenyls	0.013	0.0010		0.020	0.0016	1	10/22/13	11:28	CJM
Dichlorobiphenyls	0.021	0.0010		0.033	0.0016	1	10/22/13	11:28	CJM
Trichlorobiphenyls	0.040	0.0010		0.064	0.0016	1	10/22/13	11:28	CJM
Tetrachlorobiphenyls	0.065	0.0020		0.10	0.0032	1	10/22/13	11:28	CJM
Pentachlorobiphenyls	0.055	0.0020		0.087	0.0032	1	10/22/13	11:28	CJM
Hexachlorobiphenyls	0.018	0.0020		0.029	0.0032	1	10/22/13	11:28	CJM
Heptachlorobiphenyls	0.0038	0.0030		0.0059	0.0047	1	10/22/13	11:28	CJM
Octachlorobiphenyls	ND	0.0030		ND	0.0047	1	10/22/13	11:28	CJM
Nonachlorobiphenyls	ND	0.0050		ND	0.0079	1	10/22/13	11:28	CJM
Decachlorobiphenyl	ND	0.0050		ND	0.0079	1	10/22/13	11:28	CJM
Total Polychlorinated biphenyls	0.22			0.34		1	10/22/13	11:28	CJM

Surrogates	% Recovery	% REC Limits	
Tetrachloro-m-xylene	60.9	50-125	10/22/13 11:28

# ANALYTICAL RESULTS

Project Location: UMASS Dubois Library

Date Received: 10/11/2013

Field Sample #: DL-13E-IAS-138

Sample ID: 13J0483-04

Sample Matrix: Indoor air

Sampled: 10/11/2013 07:17

Sample Description/Location:

Sub Description/Location:

Flow Controller ID:

Sample Type:

Air Volume L: 629.76

Work Order: 13J0483

## TO-10A/EPA 680 Modified

Analyte	Total µg		Flag/Qual	ug/m3		Dilution	Date/Time		
	Results	RL		Results	RL		Analyzed	Analyst	
Monochlorobiphenyls	0.0095	0.0010		0.015	0.0016	1	10/22/13	11:58	CJM
Dichlorobiphenyls	0.028	0.0010		0.045	0.0016	1	10/22/13	11:58	CJM
Trichlorobiphenyls	0.079	0.0010		0.13	0.0016	1	10/22/13	11:58	CJM
Tetrachlorobiphenyls	0.19	0.0020		0.30	0.0032	1	10/22/13	11:58	CJM
Pentachlorobiphenyls	0.17	0.0020		0.26	0.0032	1	10/22/13	11:58	CJM
Hexachlorobiphenyls	0.026	0.0020		0.041	0.0032	1	10/22/13	11:58	CJM
Heptachlorobiphenyls	ND	0.0030		ND	0.0048	1	10/22/13	11:58	CJM
Octachlorobiphenyls	ND	0.0030		ND	0.0048	1	10/22/13	11:58	CJM
Nonachlorobiphenyls	ND	0.0050		ND	0.0079	1	10/22/13	11:58	CJM
Decachlorobiphenyl	ND	0.0050		ND	0.0079	1	10/22/13	11:58	CJM
Total Polychlorinated biphenyls	0.50			0.79		1	10/22/13	11:58	CJM

Surrogates	% Recovery	% REC Limits	
Tetrachloro-m-xylene	83.6	50-125	10/22/13 11:58

## ANALYTICAL RESULTS

Project Location: UMASS Dubois Library

Date Received: 10/11/2013

Field Sample #: DL-15E-IAS-139

Sample ID: 13J0483-05

Sample Matrix: Indoor air

Sampled: 10/11/2013 07:15

Sample Description/Location:

Sub Description/Location:

Work Order: 13J0483

Flow Controller ID:

Sample Type:

Air Volume L: 634.79

## TO-10A/EPA 680 Modified

Analyte	Total µg		Flag/Qual	ug/m3		Dilution	Date/Time		
	Results	RL		Results	RL		Analyzed	Analyst	
Monochlorobiphenyls	0.024	0.0010		0.037	0.0016	1	10/22/13	12:27	CJM
Dichlorobiphenyls	0.032	0.0010		0.050	0.0016	1	10/22/13	12:27	CJM
Trichlorobiphenyls	0.063	0.0010		0.099	0.0016	1	10/22/13	12:27	CJM
Tetrachlorobiphenyls	0.096	0.0020		0.15	0.0032	1	10/22/13	12:27	CJM
Pentachlorobiphenyls	0.065	0.0020		0.10	0.0032	1	10/22/13	12:27	CJM
Hexachlorobiphenyls	0.019	0.0020		0.030	0.0032	1	10/22/13	12:27	CJM
Heptachlorobiphenyls	0.0035	0.0030		0.0055	0.0047	1	10/22/13	12:27	CJM
Octachlorobiphenyls	ND	0.0030		ND	0.0047	1	10/22/13	12:27	CJM
Nonachlorobiphenyls	ND	0.0050		ND	0.0079	1	10/22/13	12:27	CJM
Decachlorobiphenyl	ND	0.0050		ND	0.0079	1	10/22/13	12:27	CJM
Total Polychlorinated biphenyls	0.30			0.47		1	10/22/13	12:27	CJM

Surrogates	% Recovery	% REC Limits	
Tetrachloro-m-xylene	65.6	50-125	10/22/13 12:27

# ANALYTICAL RESULTS

Project Location: UMASS Dubois Library

Sample Description/Location:

Work Order: 13J0483

Date Received: 10/11/2013

Sub Description/Location:

Field Sample #: DL-19E-IAS-140

Sample ID: 13J0483-06

Sample Matrix: Indoor air

Flow Controller ID:

Sampled: 10/11/2013 07:10

Sample Type:

Air Volume L: 632.64

## TO-10A/EPA 680 Modified

Analyte	Total µg		Flag/Qual	ug/m3		Dilution	Date/Time		
	Results	RL		Results	RL		Analyzed	Analyst	
Monochlorobiphenyls	0.026	0.0010		0.042	0.0016	1	10/22/13	12:57	CJM
Dichlorobiphenyls	0.043	0.0010		0.069	0.0016	1	10/22/13	12:57	CJM
Trichlorobiphenyls	0.12	0.0010		0.19	0.0016	1	10/22/13	12:57	CJM
Tetrachlorobiphenyls	0.19	0.0020		0.31	0.0032	1	10/22/13	12:57	CJM
Pentachlorobiphenyls	0.18	0.0020		0.29	0.0032	1	10/22/13	12:57	CJM
Hexachlorobiphenyls	0.030	0.0020		0.048	0.0032	1	10/22/13	12:57	CJM
Heptachlorobiphenyls	ND	0.0030		ND	0.0047	1	10/22/13	12:57	CJM
Octachlorobiphenyls	ND	0.0030		ND	0.0047	1	10/22/13	12:57	CJM
Nonachlorobiphenyls	ND	0.0050		ND	0.0079	1	10/22/13	12:57	CJM
Decachlorobiphenyl	ND	0.0050		ND	0.0079	1	10/22/13	12:57	CJM
Total Polychlorinated biphenyls	0.60			0.94		1	10/22/13	12:57	CJM

Surrogates	% Recovery	% REC Limits	
Tetrachloro-m-xylene	80.3	50-125	10/22/13 12:57

## ANALYTICAL RESULTS

Project Location: UMASS Dubois Library

Date Received: 10/11/2013

Field Sample #: DL-23E-IAS-141

Sample ID: 13J0483-07

Sample Matrix: Indoor air

Sampled: 10/11/2013 07:05

Sample Description/Location:

Sub Description/Location:

Flow Controller ID:

Sample Type:

Air Volume L: 633.31

Work Order: 13J0483

## TO-10A/EPA 680 Modified

Analyte	Total µg		Flag/Qual	ug/m3		Dilution	Date/Time		
	Results	RL		Results	RL		Analyzed	Analyst	
Monochlorobiphenyls	0.027	0.0010		0.043	0.0016	1	10/22/13	13:27	CJM
Dichlorobiphenyls	0.035	0.0010		0.056	0.0016	1	10/22/13	13:27	CJM
Trichlorobiphenyls	0.073	0.0010		0.12	0.0016	1	10/22/13	13:27	CJM
Tetrachlorobiphenyls	0.11	0.0020		0.18	0.0032	1	10/22/13	13:27	CJM
Pentachlorobiphenyls	0.087	0.0020		0.14	0.0032	1	10/22/13	13:27	CJM
Hexachlorobiphenyls	0.018	0.0020		0.029	0.0032	1	10/22/13	13:27	CJM
Heptachlorobiphenyls	ND	0.0030		ND	0.0047	1	10/22/13	13:27	CJM
Octachlorobiphenyls	ND	0.0030		ND	0.0047	1	10/22/13	13:27	CJM
Nonachlorobiphenyls	ND	0.0050		ND	0.0079	1	10/22/13	13:27	CJM
Decachlorobiphenyl	ND	0.0050		ND	0.0079	1	10/22/13	13:27	CJM
Total Polychlorinated biphenyls	0.35			0.56		1	10/22/13	13:27	CJM

Surrogates	% Recovery	% REC Limits	
Tetrachloro-m-xylene	78.8	50-125	10/22/13 13:27



# ANALYTICAL RESULTS

Project Location: UMASS Dubois Library

Sample Description/Location:

Work Order: 13J0483

Date Received: 10/11/2013

Sub Description/Location:

Field Sample #: DL-26E-IAS-142

Sample ID: 13J0483-08

Sample Matrix: Indoor air

Flow Controller ID:

Sampled: 10/11/2013 07:02

Sample Type:

Air Volume L: 641.3

## TO-10A/EPA 680 Modified

Analyte	Total µg		Flag/Qual	ug/m3		Dilution	Date/Time		Analyst
	Results	RL		Results	RL		Analyzed		
Monochlorobiphenyls	0.017	0.0010		0.026	0.0016	1	10/22/13 16:24	CJM	
Dichlorobiphenyls	0.023	0.0010		0.036	0.0016	1	10/22/13 16:24	CJM	
Trichlorobiphenyls	0.044	0.0010		0.068	0.0016	1	10/22/13 16:24	CJM	
Tetrachlorobiphenyls	0.073	0.0020		0.11	0.0031	1	10/22/13 16:24	CJM	
Pentachlorobiphenyls	0.058	0.0020		0.090	0.0031	1	10/22/13 16:24	CJM	
Hexachlorobiphenyls	0.013	0.0020		0.021	0.0031	1	10/22/13 16:24	CJM	
Heptachlorobiphenyls	ND	0.0030		ND	0.0047	1	10/22/13 16:24	CJM	
Octachlorobiphenyls	ND	0.0030		ND	0.0047	1	10/22/13 16:24	CJM	
Nonachlorobiphenyls	ND	0.0050		ND	0.0078	1	10/22/13 16:24	CJM	
Decachlorobiphenyl	ND	0.0050		ND	0.0078	1	10/22/13 16:24	CJM	
Total Polychlorinated biphenyls	0.23			0.35		1	10/22/13 16:24	CJM	

Surrogates	% Recovery	% REC Limits	
Tetrachloro-m-xylene	78.8	50-125	10/22/13 16:24

## ANALYTICAL RESULTS

Project Location: UMASS Dubois Library

Date Received: 10/11/2013

Field Sample #: DL-4ED-IAS-143

Sample ID: 13J0483-09

Sample Matrix: Indoor air

Sampled: 10/11/2013 07:29

Sample Description/Location:

Sub Description/Location:

Flow Controller ID:

Sample Type:

Air Volume L: 633.35

Work Order: 13J0483

## TO-10A/EPA 680 Modified

Analyte	Total µg		Flag/Qual	ug/m3		Dilution	Date/Time		Analyst
	Results	RL		Results	RL		Analyzed		
Monochlorobiphenyls	0.0080	0.0010		0.013	0.0016	1	10/22/13	14:26	CJM
Dichlorobiphenyls	0.015	0.0010		0.024	0.0016	1	10/22/13	14:26	CJM
Trichlorobiphenyls	0.033	0.0010		0.052	0.0016	1	10/22/13	14:26	CJM
Tetrachlorobiphenyls	0.067	0.0020		0.11	0.0032	1	10/22/13	14:26	CJM
Pentachlorobiphenyls	0.062	0.0020		0.098	0.0032	1	10/22/13	14:26	CJM
Hexachlorobiphenyls	0.021	0.0020		0.033	0.0032	1	10/22/13	14:26	CJM
Heptachlorobiphenyls	0.0044	0.0030		0.0069	0.0047	1	10/22/13	14:26	CJM
Octachlorobiphenyls	ND	0.0030		ND	0.0047	1	10/22/13	14:26	CJM
Nonachlorobiphenyls	ND	0.0050		ND	0.0079	1	10/22/13	14:26	CJM
Decachlorobiphenyl	ND	0.0050		ND	0.0079	1	10/22/13	14:26	CJM
Total Polychlorinated biphenyls	0.21			0.33		1	10/22/13	14:26	CJM

Surrogates	% Recovery	% REC Limits	
Tetrachloro-m-xylene	67.2	50-125	10/22/13 14:26

## ANALYTICAL RESULTS

Project Location: UMASS Dubois Library

Date Received: 10/11/2013

Field Sample #: DL-OUT-IAS-144

Sample ID: 13J0483-10

Sample Matrix: Indoor air

Sampled: 10/11/2013 07:30

Sample Description/Location:

Sub Description/Location:

Work Order: 13J0483

Flow Controller ID:

Sample Type:

Air Volume L: 624

## TO-10A/EPA 680 Modified

Analyte	Total µg		Flag/Qual	ug/m3		Dilution	Date/Time		
	Results	RL		Results	RL		Analyzed	Analyst	
Monochlorobiphenyls	ND	0.0010		ND	0.0016	1	10/22/13	14:56	CJM
Dichlorobiphenyls	ND	0.0010		ND	0.0016	1	10/22/13	14:56	CJM
Trichlorobiphenyls	ND	0.0010		ND	0.0016	1	10/22/13	14:56	CJM
Tetrachlorobiphenyls	ND	0.0020		ND	0.0032	1	10/22/13	14:56	CJM
Pentachlorobiphenyls	ND	0.0020		ND	0.0032	1	10/22/13	14:56	CJM
Hexachlorobiphenyls	ND	0.0020		ND	0.0032	1	10/22/13	14:56	CJM
Heptachlorobiphenyls	ND	0.0030		ND	0.0048	1	10/22/13	14:56	CJM
Octachlorobiphenyls	ND	0.0030		ND	0.0048	1	10/22/13	14:56	CJM
Nonachlorobiphenyls	ND	0.0050		ND	0.008	1	10/22/13	14:56	CJM
Decachlorobiphenyl	ND	0.0050		ND	0.008	1	10/22/13	14:56	CJM
Total Polychlorinated biphenyls	0.0			0		1	10/22/13	14:56	CJM

Surrogates	% Recovery	% REC Limits	
Tetrachloro-m-xylene	71.2	50-125	10/22/13 14:56

# ANALYTICAL RESULTS

Project Location: UMASS Dubois Library

Date Received: 10/11/2013

Field Sample #: DL-18E-IAS-145

Sample ID: 13J0483-11

Sample Matrix: Indoor air

Sampled: 10/11/2013 07:40

Sample Description/Location:

Sub Description/Location:

Flow Controller ID:

Sample Type:

Air Volume L: 631.44

Work Order: 13J0483

## TO-10A/EPA 680 Modified

Analyte	Total µg		Flag/Qual	ug/m3		Dilution	Date/Time		Analyst
	Results	RL		Results	RL		Analyzed		
Monochlorobiphenyls	0.027	0.0010		0.043	0.0016	1	10/22/13	15:25	CJM
Dichlorobiphenyls	0.033	0.0010		0.052	0.0016	1	10/22/13	15:25	CJM
Trichlorobiphenyls	0.066	0.0010		0.10	0.0016	1	10/22/13	15:25	CJM
Tetrachlorobiphenyls	0.090	0.0020		0.14	0.0032	1	10/22/13	15:25	CJM
Pentachlorobiphenyls	0.069	0.0020		0.11	0.0032	1	10/22/13	15:25	CJM
Hexachlorobiphenyls	0.019	0.0020		0.030	0.0032	1	10/22/13	15:25	CJM
Heptachlorobiphenyls	0.0048	0.0030		0.0076	0.0048	1	10/22/13	15:25	CJM
Octachlorobiphenyls	ND	0.0030		ND	0.0048	1	10/22/13	15:25	CJM
Nonachlorobiphenyls	ND	0.0050		ND	0.0079	1	10/22/13	15:25	CJM
Decachlorobiphenyl	ND	0.0050		ND	0.0079	1	10/22/13	15:25	CJM
Total Polychlorinated biphenyls	0.31			0.49		1	10/22/13	15:25	CJM

Surrogates	% Recovery	% REC Limits	
Tetrachloro-m-xylene	63.6	50-125	10/22/13 15:25

### Sample Extraction Data

Prep Method: SW-846 3540C-TO-10A/EPA 680 Modified

Lab Number [Field ID]	Batch	Initial [Cartridge	Final [mL]	Date
13J0483-01 [DL-4E-IAS-135]	B083048	1.00	1.00	10/16/13
13J0483-02 [DL-5E-IAS-136]	B083048	1.00	1.00	10/16/13
13J0483-03 [DL-8E-IAS-137]	B083048	1.00	1.00	10/16/13
13J0483-04 [DL-13E-IAS-138]	B083048	1.00	1.00	10/16/13
13J0483-05 [DL-15E-IAS-139]	B083048	1.00	1.00	10/16/13
13J0483-06 [DL-19E-IAS-140]	B083048	1.00	1.00	10/16/13
13J0483-07 [DL-23E-IAS-141]	B083048	1.00	1.00	10/16/13
13J0483-08 [DL-26E-IAS-142]	B083048	1.00	1.00	10/16/13
13J0483-09 [DL-4ED-IAS-143]	B083048	1.00	1.00	10/16/13
13J0483-10 [DL-OUT-IAS-144]	B083048	1.00	1.00	10/16/13
13J0483-11 [DL-18E-IAS-145]	B083048	1.00	1.00	10/16/13

**QUALITY CONTROL**
**PCB Homologues by GC/MS with Soxhlet Extraction - Quality Control**

Analyte	Total µg		ug/m3		Spike Level	Source	%REC	%REC	RPD	RPD	Flag/Qual
	Results	RL	Results	RL	Total µg	Result	%REC	Limits	RPD	Limit	

**Batch B083048 - SW-846 3540C**
**Blank (B083048-BLK1)**

Prepared: 10/16/13 Analyzed: 10/22/13

Monochlorobiphenyls	ND	0.0010
Dichlorobiphenyls	ND	0.0010
Trichlorobiphenyls	ND	0.0010
Tetrachlorobiphenyls	ND	0.0020
Pentachlorobiphenyls	ND	0.0020
Hexachlorobiphenyls	ND	0.0020
Heptachlorobiphenyls	ND	0.0030
Octachlorobiphenyls	ND	0.0030
Nonachlorobiphenyls	ND	0.0050
Decachlorobiphenyl	ND	0.0050
Total Polychlorinated biphenyls	0.0	

Surrogate: Tetrachloro-m-xylene 0.155 0.200 77.3 50-125

**LCS (B083048-BS1)**

Prepared: 10/16/13 Analyzed: 10/21/13

Monochlorobiphenyls	0.19	0.0010	0.200	93.1	40-140
Dichlorobiphenyls	0.19	0.0010	0.200	97.4	40-140
Trichlorobiphenyls	0.20	0.0010	0.200	98.9	40-140
Tetrachlorobiphenyls	0.40	0.0020	0.400	100	40-140
Pentachlorobiphenyls	0.40	0.0020	0.400	100	40-140
Hexachlorobiphenyls	0.38	0.0020	0.400	95.0	40-140
Heptachlorobiphenyls	0.58	0.0030	0.600	95.9	40-140
Octachlorobiphenyls	0.56	0.0030	0.600	93.3	40-140
Nonachlorobiphenyls	1.0	0.0050	1.00	100	40-140
Decachlorobiphenyl	0.94	0.0050	1.00	93.8	40-140

Surrogate: Tetrachloro-m-xylene 0.184 0.200 92.0 50-125

**LCS Dup (B083048-BSD1)**

Prepared: 10/16/13 Analyzed: 10/22/13

Monochlorobiphenyls	0.13	0.0010	0.200	63.7	40-140	37.5	50
Dichlorobiphenyls	0.14	0.0010	0.200	71.5	40-140	30.7	50
Trichlorobiphenyls	0.16	0.0010	0.200	77.7	40-140	24.0	50
Tetrachlorobiphenyls	0.32	0.0020	0.400	79.8	40-140	22.8	50
Pentachlorobiphenyls	0.34	0.0020	0.400	84.4	40-140	17.1	50
Hexachlorobiphenyls	0.32	0.0020	0.400	80.6	40-140	16.4	50
Heptachlorobiphenyls	0.51	0.0030	0.600	84.2	40-140	13.0	50
Octachlorobiphenyls	0.52	0.0030	0.600	87.1	40-140	6.87	50
Nonachlorobiphenyls	0.96	0.0050	1.00	95.6	40-140	4.85	50
Decachlorobiphenyl	0.91	0.0050	1.00	91.0	40-140	3.07	50

Surrogate: Tetrachloro-m-xylene 0.134 0.200 66.8 50-125

**FLAG/QUALIFIER SUMMARY**

*	QC result is outside of established limits.
†	Wide recovery limits established for difficult compound.
‡	Wide RPD limits established for difficult compound.
#	Data exceeded client recommended or regulatory level
	Percent recoveries and relative percent differences (RPDs) are determined by the software using values in the calculation which have not been rounded.
	No results have been blank subtracted unless specified in the case narrative section.
Z-01	Internal standard area >150% of associated calibration internal standard area. Reanalysis resulted in similar internal standard non-conformance.

# CERTIFICATIONS

## Certified Analyses included in this Report

Analyte	Certifications
---------	----------------

### TO-10A/EPA 680 Modified in Air

Total Polychlorinated biphenyls AIHA

The CON-TEST Environmental Laboratory operates under the following certifications and accreditations:

Code	Description	Number	Expires
AIHA	AIHA-LAP, LLC	100033	02/1/2014
MA	Massachusetts DEP	M-MA100	06/30/2014
CT	Connecticut Department of Public Health	PH-0567	09/30/2015
NY	New York State Department of Health	10899 NELAP	04/1/2014
NH-S	New Hampshire Environmental Lab	2516 NELAP	02/5/2014
RI	Rhode Island Department of Health	LAO00112	12/30/2013
NC	North Carolina Div. of Water Quality	652	12/31/2013
NJ	New Jersey DEP	MA007 NELAP	06/30/2014
FL	Florida Department of Health	E871027 NELAP	06/30/2014
VT	Vermont Department of Health Lead Laboratory	LL015036	07/30/2014
WA	State of Washington Department of Ecology	C2065	02/23/2014
ME	State of Maine	2011028	06/9/2015
VA	Commonwealth of Virginia	460217	12/14/2013
NH-P	New Hampshire Environmental Lab	2557 NELAP	09/6/2014





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Phone: 413-525-2332  
Fax: 413-525-6405  
Email: info@contestlabs.com  
www.contestlabs.com

# AIR SAMPLE CHAIN OF CUSTODY

39 SPRUCE ST  
EAST LONGMEADOW, MA 01028

Page 2 of 2

Company Name: W + C Andrews  
Address: see page 1

Telephone: ( )  
Project # 225695  
Client PO #

Attention: J. Howard, G. Franklin, K. Leonard

Project Location: Unmass Dubois Library  
Sampled By: Kim Leonard

Proposal Provided? (For Billing purposes)

☐ yes ☐ no

proposal date

DATA DELIVERY (check one):  
☐ FAX ☒ EMAIL ☐ WEBSITE CLIENT

Fax # :  
Email: Kim.L@unmass.edu

Format: ☐ EXCEL ☐ PDF ☐ GIS KEY ☐ OTHER

Date Sampled ☐ ONLY USE WHEN USING PUMPS

Start Stop Total Flow Rate Volume Matrix

Date / Date / Minutes M<sup>3</sup>/Min. or L / Min. M<sup>3</sup> or L

Time / Time / Sampled L / Min. M<sup>3</sup> or L

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Time / Time / Sampled L / Min. M<sup>3</sup> or L

Time / Time / Sampled L / Min. M<sup>3</sup> or L

ANALYSIS REQUESTED

"Hg"  
Please fill out completely, sign, date and retain the yellow copy for your record  
Summa canisters are flow controllers must be returned within 14 days of receipt or rental fee will apply.  
Summa canisters will be retained for a minimum of 14 days after sampling date prior to cleaning.

Summa Canister ID  
Flow Control ID

Summa Canister ID  
Flow Control ID

Summa Canister ID  
Flow Control ID

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Summa Canister ID  
Flow Control ID

Laboratory Comments:

See page 1

CLIENT COMMENTS:

Turnaround \*\*

☐ 7-Day

☐ 10-Day

☒ Other: 5

☐ \*24-Hr

☐ \*48-Hr

☐ \*72-Hr

☐ \*4-Day

☐ Approval Required

Special Requirements

Regulations: ☐ Y ☐ N

Data Enhancement/RCP? ☐ Y ☐ N

Enhanced Data Package ☐ Y ☐ N

(Surcharge Applies)

Required Detection Limits: 5

Other: 5

\*Matrix Code:

SG = SOIL GAS

IA = INDOOR AIR

AMB = AMBIENT

SS = SUB SLAB

D = DUP

BL = BLANK

O = Other

\*\*Media Codes:

S = Summa can

TB = Tedlar bag

P = PUB

T = Tube

F = Filter

C = Cassette

O = Other

TURNAROUND TIME STARTS AT 9:00 A.M. THE DAY AFTER SAMPLE RECEIPT UNLESS THERE ARE QUESTIONS ON YOUR CHAIN. IF THIS FORM IS NOT FILLED OUT COMPLETELY OR IS INCORRECT, TURNAROUND TIME WILL NOT START UNTIL ALL QUESTIONS ARE ANSWERED BY OUR CLIENT.

AIHA, NELAP & WBE/DBE Certified

Page 2 of 2  
**Login Sample Receipt Checklist**  
**(Rejection Criteria Listing - Using Sample Acceptance Policy)**  
**Any False statement will be brought to the attention of Client**

Question	Answer (True/False)	Comment
	T/F/NA	
1) The cooler's custody seal, if present, is intact.	NA	
2) The cooler or samples do not appear to have been compromised or tampered with.	T	
3) Samples were received on ice.	T	
4) Cooler Temperature is acceptable.	T	
5) Cooler Temperature is recorded.	T	
6) COC is filled out in ink and legible.	T	
7) COC is filled out with all pertinent information.	T	
8) Field Sampler's name present on COC.	T	
9) There are no discrepancies between the sample IDs on the container and the COC.	T	
10) Samples are received within Holding Time.	T	
11) Sample containers have legible labels.	T	
12) Containers are not broken or leaking.	T	
13) Air Cassettes are not broken/open.	NA	
14) Sample collection date/times are provided.	T	
15) Appropriate sample containers are used.	T	
16) Proper collection media used.	T	
17) No headspace sample bottles are completely filled.	NA	
18) There is sufficient volume for all requested analyses, including any requested MS/MSDs.	NA	
19) Trip blanks provided if applicable.	NA	
20) VOA sample vials do not have head space or bubble is <6mm (1/4") in diameter.	NA	
21) Samples do not require splitting or compositing.	T	

Doc #278 Rev. 3 August 2013

Who notified of False statements?  
 Log-In Technician Initials: CFC

Date/Time:  
 Date/Time:

10/11/13



Page 1 of 2

39 Spruce St.  
East Longmeadow, MA.  
01028  
P: 413-525-2332  
F: 413-525-6405

**AIR Only Receipt Checklist**

CLIENT NAME: Woodard & Curran RECEIVED BY: CEC DATE: 10/11/13

1) Was the chain(s) of custody relinquished and signed? ☒ Yes ☐ No

2) Does the chain agree with the samples?  
If not, explain: ☒ Yes ☐ No

3) Are all the samples in good condition?  
If not, explain: ☒ Yes ☐ No

4) Are there any samples "On Hold"?

Yes ☒ No ☐ Stored where:

5) Are there any RUSH or SHORT HOLDING TIME samples?

Yes ☒ No ☐

Who was notified \_\_\_\_\_ Date \_\_\_\_\_ Time \_\_\_\_\_

6) Location where samples are stored:

19

Permission to subcontract samples? Yes ☐ No ☒  
(Walk-in clients only) if not already approved  
Client Signature: \_\_\_\_\_

7) Temperature °C by Temp blank \_\_\_\_\_ Temperature °C by Temp gun \_\_\_\_\_

**Containers received at Con-Test**

	# of Containers	Types (Size, Duration)
Summa Cans (TO-14/TO-15/APH)		
Tedlar Bags		
TO-17 Tubes		
Regulators		
Restrictors		
Hg/Hopcalite Tube (NIOSH 6009)		
(TO-4A/ TO-10A/TO-13) PUFs	<u>11</u>	<u>Low Vol</u>
PCB Florisil Tubes (NIOSH 5503)		
Air cassette		
PM 2.5/PM 10		
TO-11A Cartridges		
Other		

Unused Summas/PUF Media:

Unused Regulators:

1) Was all media (used & unused) checked into the WASP?

2) Were all returned summa cans, Restrictors & Regulators and PUF's documented as returned in the Air Lab Inbound/Outbound Excel Spreadsheet?

Laboratory Comments: 100813-01-11

October 21, 2013

George Franklin  
Woodard & Curran - Andover, MA  
40 Shattuck Road., Suite 110  
Andover, MA 01810

Project Location: UMass LT MMin  
Client Job Number:  
Project Number: 225695  
Laboratory Work Order Number: 13J0566

Enclosed are results of analyses for samples received by the laboratory on October 15, 2013. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink that reads "Meghan E. Kelley". The signature is written in a cursive, flowing style.

Meghan E. Kelley  
Project Manager

Woodard & Curran - Andover, MA  
40 Shattuck Road., Suite 110  
Andover, MA 01810  
ATTN: George Franklin

REPORT DATE: 10/21/2013

PURCHASE ORDER NUMBER:

PROJECT NUMBER: 225695

**ANALYTICAL SUMMARY**

WORK ORDER NUMBER: 13J0566

The results of analyses performed on the following samples submitted to the CON-TEST Analytical Laboratory are found in this report.

PROJECT LOCATION: UMass LT MMin

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
LTM-TH-VWC-025	13J0566-01	Wipe		SW-846 8082A	
LTM-TH-VWC-026	13J0566-02	Wipe		SW-846 8082A	
LTM-SWC-VWC-027	13J0566-03	Wipe		SW-846 8082A	
LTM-SWC-VWC-028	13J0566-04	Wipe		SW-846 8082A	
LTM-SWC-VWC-029	13J0566-05	Wipe		SW-846 8082A	
LTM-SWC-VWC-030	13J0566-06	Wipe		SW-846 8082A	
LTM-SWC-VWC-031	13J0566-07	Wipe		SW-846 8082A	
LTM-SWC-VWC-032	13J0566-08	Wipe		SW-846 8082A	
LTM-SWC-VWC-033	13J0566-09	Wipe		SW-846 8082A	
LTM-SWC-VWCD-034	13J0566-10	Wipe		SW-846 8082A	
LTM-SWC-VWC-035	13J0566-11	Wipe		SW-846 8082A	
LTM-SWC-VWC-036	13J0566-12	Wipe		SW-846 8082A	
LTM-SWC-VWC-037	13J0566-13	Wipe		SW-846 8082A	
LTM-SWC-VWC-038	13J0566-14	Wipe		SW-846 8082A	
LTM-SWC-VWC-039	13J0566-15	Wipe		SW-846 8082A	
LTM-SWC-VWC-040	13J0566-16	Wipe		SW-846 8082A	
LTM-SWC-VWC-041	13J0566-17	Wipe		SW-846 8082A	
LTM-SWC-VWC-042	13J0566-18	Wipe		SW-846 8082A	
LTM-SWC-VWK-043	13J0566-19	Wipe		SW-846 8082A	
LTM-SWC-VWC-044	13J0566-20	Wipe		SW-846 8082A	
LTM-SWC-VWC-045	13J0566-21	Wipe		SW-846 8082A	

**CASE NARRATIVE SUMMARY**

All reported results are within defined laboratory quality control objectives unless listed below or otherwise qualified in this report.

**SW-846 8082A****Qualifications:**

Laboratory fortified blank duplicate RPD is outside of control limits. Reduced precision is anticipated for any reported value for this compound.

**Analyte & Samples(s) Qualified:****Aroclor-1016, Aroclor-1016 [2C], Aroclor-1260, Aroclor-1260 [2C]**

13J0566-21[LTM-SWC-VWC-045], B083135-BLK1, B083135-BS1, B083135-BSD1

The results of analyses reported only relate to samples submitted to the Con-Test Analytical Laboratory for testing.

I certify that the analyses listed above, unless specifically listed as subcontracted, if any, were performed under my direction according to the approved methodologies listed in this document, and 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.



Daren J. Damboragian  
Laboratory Manager

Project Location: UMass LT MMin

Sample Description:

Work Order: 13J0566

Date Received: 10/15/2013

Field Sample #: LTM-TH-VWC-025

Sampled: 10/10/2013 10:40

Sample ID: 13J0566-01

Sample Matrix: Wipe

**Polychlorinated Biphenyls with 3540 Soxhlet Extraction**

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 10:48	JMB
Aroclor-1221 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 10:48	JMB
Aroclor-1232 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 10:48	JMB
Aroclor-1242 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 10:48	JMB
Aroclor-1248 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 10:48	JMB
Aroclor-1254 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 10:48	JMB
Aroclor-1260 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 10:48	JMB
Aroclor-1262 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 10:48	JMB
Aroclor-1268 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 10:48	JMB
Surrogates	% Recovery	Recovery Limits	Flag/Qual						
Decachlorobiphenyl [1]	105	30-150						10/17/13 10:48	
Decachlorobiphenyl [2]	111	30-150						10/17/13 10:48	
Tetrachloro-m-xylene [1]	107	30-150						10/17/13 10:48	
Tetrachloro-m-xylene [2]	112	30-150						10/17/13 10:48	



Project Location: UMass LT MMin

Sample Description:

Work Order: 13J0566

Date Received: 10/15/2013

Field Sample #: LTM-TH-VWC-026

Sampled: 10/10/2013 10:50

Sample ID: 13J0566-02

Sample Matrix: Wipe

**Polychlorinated Biphenyls with 3540 Soxhlet Extraction**

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 11:00	JMB
Aroclor-1221 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 11:00	JMB
Aroclor-1232 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 11:00	JMB
Aroclor-1242 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 11:00	JMB
Aroclor-1248 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 11:00	JMB
Aroclor-1254 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 11:00	JMB
Aroclor-1260 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 11:00	JMB
Aroclor-1262 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 11:00	JMB
Aroclor-1268 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 11:00	JMB
Surrogates	% Recovery	Recovery Limits	Flag/Qual						
Decachlorobiphenyl [1]	90.0	30-150						10/17/13 11:00	
Decachlorobiphenyl [2]	93.8	30-150						10/17/13 11:00	
Tetrachloro-m-xylene [1]	91.2	30-150						10/17/13 11:00	
Tetrachloro-m-xylene [2]	95.2	30-150						10/17/13 11:00	

Project Location: UMass LT MMin

Sample Description:

Work Order: 13J0566

Date Received: 10/15/2013

Field Sample #: LTM-SWC-VWC-027

Sampled: 10/10/2013 15:10

Sample ID: 13J0566-03

Sample Matrix: Wipe

**Polychlorinated Biphenyls with 3540 Soxhlet Extraction**

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 11:13	JMB
Aroclor-1221 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 11:13	JMB
Aroclor-1232 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 11:13	JMB
Aroclor-1242 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 11:13	JMB
Aroclor-1248 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 11:13	JMB
Aroclor-1254 [1]	2.4	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 11:13	JMB
Aroclor-1260 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 11:13	JMB
Aroclor-1262 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 11:13	JMB
Aroclor-1268 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 11:13	JMB
Surrogates	% Recovery	Recovery Limits	Flag/Qual						
Decachlorobiphenyl [1]	99.8	30-150						10/17/13 11:13	
Decachlorobiphenyl [2]	105	30-150						10/17/13 11:13	
Tetrachloro-m-xylene [1]	100	30-150						10/17/13 11:13	
Tetrachloro-m-xylene [2]	105	30-150						10/17/13 11:13	

Project Location: UMass LT MMin

Sample Description:

Work Order: 13J0566

Date Received: 10/15/2013

Field Sample #: LTM-SWC-VWC-028

Sampled: 10/10/2013 15:20

Sample ID: 13J0566-04

Sample Matrix: Wipe

**Polychlorinated Biphenyls with 3540 Soxhlet Extraction**

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 11:25	JMB
Aroclor-1221 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 11:25	JMB
Aroclor-1232 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 11:25	JMB
Aroclor-1242 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 11:25	JMB
Aroclor-1248 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 11:25	JMB
Aroclor-1254 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 11:25	JMB
Aroclor-1260 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 11:25	JMB
Aroclor-1262 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 11:25	JMB
Aroclor-1268 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 11:25	JMB
Surrogates	% Recovery	Recovery Limits	Flag/Qual						
Decachlorobiphenyl [1]	93.8	30-150						10/17/13 11:25	
Decachlorobiphenyl [2]	98.4	30-150						10/17/13 11:25	
Tetrachloro-m-xylene [1]	95.8	30-150						10/17/13 11:25	
Tetrachloro-m-xylene [2]	99.8	30-150						10/17/13 11:25	

Project Location: UMass LT MMin

Sample Description:

Work Order: 13J0566

Date Received: 10/15/2013

Field Sample #: LTM-SWC-VWC-029

Sampled: 10/10/2013 15:30

Sample ID: 13J0566-05

Sample Matrix: Wipe

**Polychlorinated Biphenyls with 3540 Soxhlet Extraction**

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 11:38	JMB
Aroclor-1221 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 11:38	JMB
Aroclor-1232 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 11:38	JMB
Aroclor-1242 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 11:38	JMB
Aroclor-1248 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 11:38	JMB
Aroclor-1254 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 11:38	JMB
Aroclor-1260 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 11:38	JMB
Aroclor-1262 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 11:38	JMB
Aroclor-1268 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 11:38	JMB
Surrogates	% Recovery	Recovery Limits	Flag/Qual						
Decachlorobiphenyl [1]	99.2	30-150							
Decachlorobiphenyl [2]	104	30-150							
Tetrachloro-m-xylene [1]	100	30-150							
Tetrachloro-m-xylene [2]	105	30-150							

Project Location: UMass LT MMin

Sample Description:

Work Order: 13J0566

Date Received: 10/15/2013

Field Sample #: LTM-SWC-VWC-030

Sampled: 10/10/2013 15:40

Sample ID: 13J0566-06

Sample Matrix: Wipe

**Polychlorinated Biphenyls with 3540 Soxhlet Extraction**

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 11:50	JMB
Aroclor-1221 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 11:50	JMB
Aroclor-1232 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 11:50	JMB
Aroclor-1242 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 11:50	JMB
Aroclor-1248 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 11:50	JMB
Aroclor-1254 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 11:50	JMB
Aroclor-1260 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 11:50	JMB
Aroclor-1262 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 11:50	JMB
Aroclor-1268 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 11:50	JMB
Surrogates	% Recovery	Recovery Limits	Flag/Qual						
Decachlorobiphenyl [1]	96.2	30-150							
Decachlorobiphenyl [2]	101	30-150							
Tetrachloro-m-xylene [1]	98.6	30-150							
Tetrachloro-m-xylene [2]	103	30-150							

Project Location: UMass LT MMin

Sample Description:

Work Order: 13J0566

Date Received: 10/15/2013

Field Sample #: LTM-SWC-VWC-031

Sampled: 10/10/2013 15:50

Sample ID: 13J0566-07

Sample Matrix: Wipe

**Polychlorinated Biphenyls with 3540 Soxhlet Extraction**

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 12:02	JMB
Aroclor-1221 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 12:02	JMB
Aroclor-1232 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 12:02	JMB
Aroclor-1242 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 12:02	JMB
Aroclor-1248 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 12:02	JMB
Aroclor-1254 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 12:02	JMB
Aroclor-1260 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 12:02	JMB
Aroclor-1262 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 12:02	JMB
Aroclor-1268 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 12:02	JMB
Surrogates	% Recovery	Recovery Limits	Flag/Qual						
Decachlorobiphenyl [1]	101	30-150						10/17/13 12:02	
Decachlorobiphenyl [2]	107	30-150						10/17/13 12:02	
Tetrachloro-m-xylene [1]	105	30-150						10/17/13 12:02	
Tetrachloro-m-xylene [2]	110	30-150						10/17/13 12:02	

Project Location: UMass LT MMin

Sample Description:

Work Order: 13J0566

Date Received: 10/15/2013

Field Sample #: LTM-SWC-VWC-032

Sampled: 10/10/2013 16:00

Sample ID: 13J0566-08

Sample Matrix: Wipe

**Polychlorinated Biphenyls with 3540 Soxhlet Extraction**

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 12:15	JMB
Aroclor-1221 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 12:15	JMB
Aroclor-1232 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 12:15	JMB
Aroclor-1242 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 12:15	JMB
Aroclor-1248 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 12:15	JMB
Aroclor-1254 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 12:15	JMB
Aroclor-1260 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 12:15	JMB
Aroclor-1262 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 12:15	JMB
Aroclor-1268 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 12:15	JMB
Surrogates	% Recovery	Recovery Limits	Flag/Qual						
Decachlorobiphenyl [1]	98.9	30-150							
Decachlorobiphenyl [2]	104	30-150							
Tetrachloro-m-xylene [1]	99.6	30-150							
Tetrachloro-m-xylene [2]	104	30-150							

Project Location: UMass LT MMin

Sample Description:

Work Order: 13J0566

Date Received: 10/15/2013

Field Sample #: LTM-SWC-VWC-033

Sampled: 10/10/2013 16:20

Sample ID: 13J0566-09

Sample Matrix: Wipe

**Polychlorinated Biphenyls with 3540 Soxhlet Extraction**

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 12:27	JMB
Aroclor-1221 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 12:27	JMB
Aroclor-1232 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 12:27	JMB
Aroclor-1242 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 12:27	JMB
Aroclor-1248 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 12:27	JMB
Aroclor-1254 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 12:27	JMB
Aroclor-1260 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 12:27	JMB
Aroclor-1262 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 12:27	JMB
Aroclor-1268 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 12:27	JMB
Surrogates	% Recovery	Recovery Limits	Flag/Qual						
Decachlorobiphenyl [1]	98.9	30-150						10/17/13 12:27	
Decachlorobiphenyl [2]	104	30-150						10/17/13 12:27	
Tetrachloro-m-xylene [1]	101	30-150						10/17/13 12:27	
Tetrachloro-m-xylene [2]	105	30-150						10/17/13 12:27	



Project Location: UMass LT MMin

Sample Description:

Work Order: 13J0566

Date Received: 10/15/2013

Field Sample #: LTM-SWC-VWCD-034

Sampled: 10/10/2013 16:20

Sample ID: 13J0566-10

Sample Matrix: Wipe

**Polychlorinated Biphenyls with 3540 Soxhlet Extraction**

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 13:04	JMB
Aroclor-1221 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 13:04	JMB
Aroclor-1232 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 13:04	JMB
Aroclor-1242 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 13:04	JMB
Aroclor-1248 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 13:04	JMB
Aroclor-1254 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 13:04	JMB
Aroclor-1260 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 13:04	JMB
Aroclor-1262 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 13:04	JMB
Aroclor-1268 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 13:04	JMB
Surrogates	% Recovery	Recovery Limits	Flag/Qual						
Decachlorobiphenyl [1]	108	30-150						10/17/13 13:04	
Decachlorobiphenyl [2]	113	30-150						10/17/13 13:04	
Tetrachloro-m-xylene [1]	104	30-150						10/17/13 13:04	
Tetrachloro-m-xylene [2]	109	30-150						10/17/13 13:04	

Project Location: UMass LT MMin

Sample Description:

Work Order: 13J0566

Date Received: 10/15/2013

Field Sample #: LTM-SWC-VWC-035

Sampled: 10/10/2013 16:30

Sample ID: 13J0566-11

Sample Matrix: Wipe

**Polychlorinated Biphenyls with 3540 Soxhlet Extraction**

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 13:17	JMB
Aroclor-1221 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 13:17	JMB
Aroclor-1232 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 13:17	JMB
Aroclor-1242 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 13:17	JMB
Aroclor-1248 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 13:17	JMB
Aroclor-1254 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 13:17	JMB
Aroclor-1260 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 13:17	JMB
Aroclor-1262 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 13:17	JMB
Aroclor-1268 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 13:17	JMB
Surrogates	% Recovery	Recovery Limits	Flag/Qual						
Decachlorobiphenyl [1]	98.6	30-150						10/17/13 13:17	
Decachlorobiphenyl [2]	103	30-150						10/17/13 13:17	
Tetrachloro-m-xylene [1]	97.1	30-150						10/17/13 13:17	
Tetrachloro-m-xylene [2]	101	30-150						10/17/13 13:17	

Project Location: UMass LT MMin

Sample Description:

Work Order: 13J0566

Date Received: 10/15/2013

Field Sample #: LTM-SWC-VWC-036

Sampled: 10/10/2013 16:40

Sample ID: 13J0566-12

Sample Matrix: Wipe

**Polychlorinated Biphenyls with 3540 Soxhlet Extraction**

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 13:29	JMB
Aroclor-1221 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 13:29	JMB
Aroclor-1232 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 13:29	JMB
Aroclor-1242 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 13:29	JMB
Aroclor-1248 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 13:29	JMB
Aroclor-1254 [1]	0.34	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 13:29	JMB
Aroclor-1260 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 13:29	JMB
Aroclor-1262 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 13:29	JMB
Aroclor-1268 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 13:29	JMB
Surrogates	% Recovery	Recovery Limits	Flag/Qual						
Decachlorobiphenyl [1]	106	30-150						10/17/13 13:29	
Decachlorobiphenyl [2]	111	30-150						10/17/13 13:29	
Tetrachloro-m-xylene [1]	102	30-150						10/17/13 13:29	
Tetrachloro-m-xylene [2]	106	30-150						10/17/13 13:29	

Project Location: UMass LT MMin

Sample Description:

Work Order: 13J0566

Date Received: 10/15/2013

Field Sample #: LTM-SWC-VWC-037

Sampled: 10/10/2013 16:50

Sample ID: 13J0566-13

Sample Matrix: Wipe

**Polychlorinated Biphenyls with 3540 Soxhlet Extraction**

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 13:42	JMB
Aroclor-1221 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 13:42	JMB
Aroclor-1232 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 13:42	JMB
Aroclor-1242 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 13:42	JMB
Aroclor-1248 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 13:42	JMB
Aroclor-1254 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 13:42	JMB
Aroclor-1260 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 13:42	JMB
Aroclor-1262 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 13:42	JMB
Aroclor-1268 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 13:42	JMB
Surrogates	% Recovery	Recovery Limits	Flag/Qual						
Decachlorobiphenyl [1]	99.6	30-150						10/17/13 13:42	
Decachlorobiphenyl [2]	105	30-150						10/17/13 13:42	
Tetrachloro-m-xylene [1]	97.5	30-150						10/17/13 13:42	
Tetrachloro-m-xylene [2]	102	30-150						10/17/13 13:42	

Project Location: UMass LT MMin

Sample Description:

Work Order: 13J0566

Date Received: 10/15/2013

Field Sample #: LTM-SWC-VWC-038

Sampled: 10/10/2013 17:00

Sample ID: 13J0566-14

Sample Matrix: Wipe

**Polychlorinated Biphenyls with 3540 Soxhlet Extraction**

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 13:54	JMB
Aroclor-1221 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 13:54	JMB
Aroclor-1232 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 13:54	JMB
Aroclor-1242 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 13:54	JMB
Aroclor-1248 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 13:54	JMB
Aroclor-1254 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 13:54	JMB
Aroclor-1260 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 13:54	JMB
Aroclor-1262 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 13:54	JMB
Aroclor-1268 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 13:54	JMB
Surrogates	% Recovery	Recovery Limits	Flag/Qual						
Decachlorobiphenyl [1]	103	30-150						10/17/13 13:54	
Decachlorobiphenyl [2]	107	30-150						10/17/13 13:54	
Tetrachloro-m-xylene [1]	100	30-150						10/17/13 13:54	
Tetrachloro-m-xylene [2]	104	30-150						10/17/13 13:54	

Project Location: UMass LT MMin

Sample Description:

Work Order: 13J0566

Date Received: 10/15/2013

Field Sample #: LTM-SWC-VWC-039

Sampled: 10/10/2013 17:40

Sample ID: 13J0566-15

Sample Matrix: Wipe

**Polychlorinated Biphenyls with 3540 Soxhlet Extraction**

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 14:06	JMB
Aroclor-1221 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 14:06	JMB
Aroclor-1232 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 14:06	JMB
Aroclor-1242 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 14:06	JMB
Aroclor-1248 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 14:06	JMB
Aroclor-1254 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 14:06	JMB
Aroclor-1260 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 14:06	JMB
Aroclor-1262 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 14:06	JMB
Aroclor-1268 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 14:06	JMB
Surrogates	% Recovery	Recovery Limits	Flag/Qual						
Decachlorobiphenyl [1]	104	30-150						10/17/13 14:06	
Decachlorobiphenyl [2]	108	30-150						10/17/13 14:06	
Tetrachloro-m-xylene [1]	101	30-150						10/17/13 14:06	
Tetrachloro-m-xylene [2]	105	30-150						10/17/13 14:06	

Project Location: UMass LT MMin

Sample Description:

Work Order: 13J0566

Date Received: 10/15/2013

Field Sample #: LTM-SWC-VWC-040

Sampled: 10/10/2013 17:45

Sample ID: 13J0566-16

Sample Matrix: Wipe

**Polychlorinated Biphenyls with 3540 Soxhlet Extraction**

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 14:19	JMB
Aroclor-1221 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 14:19	JMB
Aroclor-1232 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 14:19	JMB
Aroclor-1242 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 14:19	JMB
Aroclor-1248 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 14:19	JMB
Aroclor-1254 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 14:19	JMB
Aroclor-1260 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 14:19	JMB
Aroclor-1262 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 14:19	JMB
Aroclor-1268 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 14:19	JMB
Surrogates	% Recovery	Recovery Limits	Flag/Qual						
Decachlorobiphenyl [1]	103	30-150						10/17/13 14:19	
Decachlorobiphenyl [2]	108	30-150						10/17/13 14:19	
Tetrachloro-m-xylene [1]	105	30-150						10/17/13 14:19	
Tetrachloro-m-xylene [2]	109	30-150						10/17/13 14:19	

Project Location: UMass LT MMin

Sample Description:

Work Order: 13J0566

Date Received: 10/15/2013

Field Sample #: LTM-SWC-VWC-041

Sampled: 10/10/2013 17:50

Sample ID: 13J0566-17

Sample Matrix: Wipe

**Polychlorinated Biphenyls with 3540 Soxhlet Extraction**

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 14:31	JMB
Aroclor-1221 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 14:31	JMB
Aroclor-1232 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 14:31	JMB
Aroclor-1242 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 14:31	JMB
Aroclor-1248 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 14:31	JMB
Aroclor-1254 [1]	0.46	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 14:31	JMB
Aroclor-1260 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 14:31	JMB
Aroclor-1262 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 14:31	JMB
Aroclor-1268 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 14:31	JMB
Surrogates	% Recovery	Recovery Limits	Flag/Qual						
Decachlorobiphenyl [1]	104	30-150						10/17/13 14:31	
Decachlorobiphenyl [2]	109	30-150						10/17/13 14:31	
Tetrachloro-m-xylene [1]	105	30-150						10/17/13 14:31	
Tetrachloro-m-xylene [2]	108	30-150						10/17/13 14:31	



Project Location: UMass LT MMin

Sample Description:

Work Order: 13J0566

Date Received: 10/15/2013

Field Sample #: LTM-SWC-VWC-042

Sampled: 10/10/2013 18:00

Sample ID: 13J0566-18

Sample Matrix: Wipe

**Polychlorinated Biphenyls with 3540 Soxhlet Extraction**

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 14:44	JMB
Aroclor-1221 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 14:44	JMB
Aroclor-1232 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 14:44	JMB
Aroclor-1242 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 14:44	JMB
Aroclor-1248 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 14:44	JMB
Aroclor-1254 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 14:44	JMB
Aroclor-1260 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 14:44	JMB
Aroclor-1262 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 14:44	JMB
Aroclor-1268 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 14:44	JMB
Surrogates	% Recovery	Recovery Limits	Flag/Qual						
Decachlorobiphenyl [1]	104	30-150						10/17/13 14:44	
Decachlorobiphenyl [2]	109	30-150						10/17/13 14:44	
Tetrachloro-m-xylene [1]	101	30-150						10/17/13 14:44	
Tetrachloro-m-xylene [2]	105	30-150						10/17/13 14:44	

Project Location: UMass LT MMin

Sample Description:

Work Order: 13J0566

Date Received: 10/15/2013

Field Sample #: LTM-SWC-VWK-043

Sampled: 10/10/2013 18:10

Sample ID: 13J0566-19

Sample Matrix: Wipe

**Polychlorinated Biphenyls with 3540 Soxhlet Extraction**

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.40	µg/Wipe	2		SW-846 8082A	10/15/13	10/17/13 16:23	JMB
Aroclor-1221 [1]	ND	0.40	µg/Wipe	2		SW-846 8082A	10/15/13	10/17/13 16:23	JMB
Aroclor-1232 [1]	ND	0.40	µg/Wipe	2		SW-846 8082A	10/15/13	10/17/13 16:23	JMB
Aroclor-1242 [1]	ND	0.40	µg/Wipe	2		SW-846 8082A	10/15/13	10/17/13 16:23	JMB
Aroclor-1248 [1]	ND	0.40	µg/Wipe	2		SW-846 8082A	10/15/13	10/17/13 16:23	JMB
Aroclor-1254 [1]	2.7	0.40	µg/Wipe	2		SW-846 8082A	10/15/13	10/17/13 16:23	JMB
Aroclor-1260 [1]	ND	0.40	µg/Wipe	2		SW-846 8082A	10/15/13	10/17/13 16:23	JMB
Aroclor-1262 [1]	ND	0.40	µg/Wipe	2		SW-846 8082A	10/15/13	10/17/13 16:23	JMB
Aroclor-1268 [1]	ND	0.40	µg/Wipe	2		SW-846 8082A	10/15/13	10/17/13 16:23	JMB
Surrogates	% Recovery	Recovery Limits	Flag/Qual						
Decachlorobiphenyl [1]	78.9	30-150						10/17/13 16:23	
Decachlorobiphenyl [2]	82.1	30-150						10/17/13 16:23	
Tetrachloro-m-xylene [1]	75.2	30-150						10/17/13 16:23	
Tetrachloro-m-xylene [2]	77.9	30-150						10/17/13 16:23	

Project Location: UMass LT MMin

Sample Description:

Work Order: 13J0566

Date Received: 10/15/2013

Field Sample #: LTM-SWC-VWC-044

Sampled: 10/10/2013 18:20

Sample ID: 13J0566-20

Sample Matrix: Wipe

**Polychlorinated Biphenyls with 3540 Soxhlet Extraction**

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 15:08	JMB
Aroclor-1221 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 15:08	JMB
Aroclor-1232 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 15:08	JMB
Aroclor-1242 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 15:08	JMB
Aroclor-1248 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 15:08	JMB
Aroclor-1254 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 15:08	JMB
Aroclor-1260 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 15:08	JMB
Aroclor-1262 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 15:08	JMB
Aroclor-1268 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 15:08	JMB
Surrogates	% Recovery	Recovery Limits	Flag/Qual						
Decachlorobiphenyl [1]	98.7	30-150							
Decachlorobiphenyl [2]	103	30-150							
Tetrachloro-m-xylene [1]	98.7	30-150							
Tetrachloro-m-xylene [2]	102	30-150							

Project Location: UMass LT MMin

Sample Description:

Work Order: 13J0566

Date Received: 10/15/2013

Field Sample #: LTM-SWC-VWC-045

Sampled: 10/16/2013 10:00

Sample ID: 13J0566-21

Sample Matrix: Wipe

**Polychlorinated Biphenyls with 3540 Soxhlet Extraction**

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.20	µg/Wipe	1	R-05	SW-846 8082A	10/17/13	10/18/13 17:35	JMB
Aroclor-1221 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/17/13	10/18/13 17:35	JMB
Aroclor-1232 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/17/13	10/18/13 17:35	JMB
Aroclor-1242 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/17/13	10/18/13 17:35	JMB
Aroclor-1248 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/17/13	10/18/13 17:35	JMB
Aroclor-1254 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/17/13	10/18/13 17:35	JMB
Aroclor-1260 [1]	ND	0.20	µg/Wipe	1	R-05	SW-846 8082A	10/17/13	10/18/13 17:35	JMB
Aroclor-1262 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/17/13	10/18/13 17:35	JMB
Aroclor-1268 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/17/13	10/18/13 17:35	JMB
Surrogates	% Recovery	Recovery Limits	Flag/Qual						
Decachlorobiphenyl [1]	92.2	30-150						10/18/13 17:35	
Decachlorobiphenyl [2]	95.1	30-150						10/18/13 17:35	
Tetrachloro-m-xylene [1]	89.0	30-150						10/18/13 17:35	
Tetrachloro-m-xylene [2]	92.4	30-150						10/18/13 17:35	

**Sample Extraction Data****Prep Method: SW-846 3540C-SW-846 8082A**

Lab Number [Field ID]	Batch	Initial [Wipe]	Final [mL]	Date
13J0566-01 [LTM-TH-VWC-025]	B082986	1.00	10.0	10/15/13
13J0566-02 [LTM-TH-VWC-026]	B082986	1.00	10.0	10/15/13
13J0566-03 [LTM-SWC-VWC-027]	B082986	1.00	10.0	10/15/13
13J0566-04 [LTM-SWC-VWC-028]	B082986	1.00	10.0	10/15/13
13J0566-05 [LTM-SWC-VWC-029]	B082986	1.00	10.0	10/15/13
13J0566-06 [LTM-SWC-VWC-030]	B082986	1.00	10.0	10/15/13
13J0566-07 [LTM-SWC-VWC-031]	B082986	1.00	10.0	10/15/13
13J0566-08 [LTM-SWC-VWC-032]	B082986	1.00	10.0	10/15/13
13J0566-09 [LTM-SWC-VWC-033]	B082986	1.00	10.0	10/15/13
13J0566-10 [LTM-SWC-VWCD-034]	B082986	1.00	10.0	10/15/13
13J0566-11 [LTM-SWC-VWC-035]	B082986	1.00	10.0	10/15/13
13J0566-12 [LTM-SWC-VWC-036]	B082986	1.00	10.0	10/15/13
13J0566-13 [LTM-SWC-VWC-037]	B082986	1.00	10.0	10/15/13
13J0566-14 [LTM-SWC-VWC-038]	B082986	1.00	10.0	10/15/13
13J0566-15 [LTM-SWC-VWC-039]	B082986	1.00	10.0	10/15/13
13J0566-16 [LTM-SWC-VWC-040]	B082986	1.00	10.0	10/15/13
13J0566-17 [LTM-SWC-VWC-041]	B082986	1.00	10.0	10/15/13
13J0566-18 [LTM-SWC-VWC-042]	B082986	1.00	10.0	10/15/13
13J0566-19 [LTM-SWC-VWK-043]	B082986	1.00	10.0	10/15/13
13J0566-20 [LTM-SWC-VWC-044]	B082986	1.00	10.0	10/15/13

**Prep Method: SW-846 3540C-SW-846 8082A**

Lab Number [Field ID]	Batch	Initial [Wipe]	Final [mL]	Date
13J0566-21 [LTM-SWC-VWC-045]	B083135	1.00	10.0	10/17/13

**QUALITY CONTROL**
**Polychlorinated Biphenyls with 3540 Soxhlet Extraction - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch B082986 - SW-846 3540C**
**Blank (B082986-BLK1)**

Prepared: 10/15/13 Analyzed: 10/17/13

Aroclor-1016	ND	0.20	µg/Wipe							
Aroclor-1016 [2C]	ND	0.20	µg/Wipe							
Aroclor-1221	ND	0.20	µg/Wipe							
Aroclor-1221 [2C]	ND	0.20	µg/Wipe							
Aroclor-1232	ND	0.20	µg/Wipe							
Aroclor-1232 [2C]	ND	0.20	µg/Wipe							
Aroclor-1242	ND	0.20	µg/Wipe							
Aroclor-1242 [2C]	ND	0.20	µg/Wipe							
Aroclor-1248	ND	0.20	µg/Wipe							
Aroclor-1248 [2C]	ND	0.20	µg/Wipe							
Aroclor-1254	ND	0.20	µg/Wipe							
Aroclor-1254 [2C]	ND	0.20	µg/Wipe							
Aroclor-1260	ND	0.20	µg/Wipe							
Aroclor-1260 [2C]	ND	0.20	µg/Wipe							
Aroclor-1262	ND	0.20	µg/Wipe							
Aroclor-1262 [2C]	ND	0.20	µg/Wipe							
Aroclor-1268	ND	0.20	µg/Wipe							
Aroclor-1268 [2C]	ND	0.20	µg/Wipe							
Surrogate: Decachlorobiphenyl	2.04		µg/Wipe	2.00		102	30-150			
Surrogate: Decachlorobiphenyl [2C]	2.11		µg/Wipe	2.00		106	30-150			
Surrogate: Tetrachloro-m-xylene	1.98		µg/Wipe	2.00		98.8	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	2.06		µg/Wipe	2.00		103	30-150			

**LCS (B082986-BS1)**

Prepared: 10/15/13 Analyzed: 10/17/13

Aroclor-1016	0.51	0.20	µg/Wipe	0.500		102	40-140			
Aroclor-1016 [2C]	0.52	0.20	µg/Wipe	0.500		104	40-140			
Aroclor-1260	0.49	0.20	µg/Wipe	0.500		97.4	40-140			
Aroclor-1260 [2C]	0.51	0.20	µg/Wipe	0.500		101	40-140			
Surrogate: Decachlorobiphenyl	2.09		µg/Wipe	2.00		104	30-150			
Surrogate: Decachlorobiphenyl [2C]	2.18		µg/Wipe	2.00		109	30-150			
Surrogate: Tetrachloro-m-xylene	2.02		µg/Wipe	2.00		101	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	2.11		µg/Wipe	2.00		105	30-150			

**LCS Dup (B082986-BSD1)**

Prepared: 10/15/13 Analyzed: 10/17/13

Aroclor-1016	0.52	0.20	µg/Wipe	0.500		105	40-140	2.51	30	
Aroclor-1016 [2C]	0.53	0.20	µg/Wipe	0.500		106	40-140	2.24	30	
Aroclor-1260	0.51	0.20	µg/Wipe	0.500		102	40-140	4.15	30	
Aroclor-1260 [2C]	0.53	0.20	µg/Wipe	0.500		106	40-140	4.22	30	
Surrogate: Decachlorobiphenyl	2.11		µg/Wipe	2.00		106	30-150			
Surrogate: Decachlorobiphenyl [2C]	2.21		µg/Wipe	2.00		110	30-150			
Surrogate: Tetrachloro-m-xylene	2.11		µg/Wipe	2.00		106	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	2.21		µg/Wipe	2.00		110	30-150			

**QUALITY CONTROL**
**Polychlorinated Biphenyls with 3540 Soxhlet Extraction - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch B083135 - SW-846 3540C</b>										
<b>Blank (B083135-BLK1)</b>										
Prepared: 10/17/13 Analyzed: 10/18/13										
Aroclor-1016	ND	0.20	µg/Wipe							R-05
Aroclor-1016 [2C]	ND	0.20	µg/Wipe							R-05
Aroclor-1221	ND	0.20	µg/Wipe							
Aroclor-1221 [2C]	ND	0.20	µg/Wipe							
Aroclor-1232	ND	0.20	µg/Wipe							
Aroclor-1232 [2C]	ND	0.20	µg/Wipe							
Aroclor-1242	ND	0.20	µg/Wipe							
Aroclor-1242 [2C]	ND	0.20	µg/Wipe							
Aroclor-1248	ND	0.20	µg/Wipe							
Aroclor-1248 [2C]	ND	0.20	µg/Wipe							
Aroclor-1254	ND	0.20	µg/Wipe							
Aroclor-1254 [2C]	ND	0.20	µg/Wipe							
Aroclor-1260	ND	0.20	µg/Wipe							R-05
Aroclor-1260 [2C]	ND	0.20	µg/Wipe							R-05
Aroclor-1262	ND	0.20	µg/Wipe							
Aroclor-1262 [2C]	ND	0.20	µg/Wipe							
Aroclor-1268	ND	0.20	µg/Wipe							
Aroclor-1268 [2C]	ND	0.20	µg/Wipe							
Surrogate: Decachlorobiphenyl	1.89		µg/Wipe	2.00		94.3	30-150			
Surrogate: Decachlorobiphenyl [2C]	1.93		µg/Wipe	2.00		96.3	30-150			
Surrogate: Tetrachloro-m-xylene	1.59		µg/Wipe	2.00		79.4	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	1.63		µg/Wipe	2.00		81.4	30-150			
<b>LCS (B083135-BS1)</b>										
Prepared: 10/17/13 Analyzed: 10/18/13										
Aroclor-1016	0.52	0.20	µg/Wipe	0.500		105	40-140			R-05
Aroclor-1016 [2C]	0.53	0.20	µg/Wipe	0.500		106	40-140			R-05
Aroclor-1260	0.51	0.20	µg/Wipe	0.500		102	40-140			R-05
Aroclor-1260 [2C]	0.52	0.20	µg/Wipe	0.500		104	40-140			R-05
Surrogate: Decachlorobiphenyl	2.14		µg/Wipe	2.00		107	30-150			
Surrogate: Decachlorobiphenyl [2C]	2.21		µg/Wipe	2.00		110	30-150			
Surrogate: Tetrachloro-m-xylene	2.02		µg/Wipe	2.00		101	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	2.08		µg/Wipe	2.00		104	30-150			
<b>LCS Dup (B083135-BSD1)</b>										
Prepared: 10/17/13 Analyzed: 10/18/13										
Aroclor-1016	0.36	0.20	µg/Wipe	0.500		72.2	40-140	36.9	* 30	R-05
Aroclor-1016 [2C]	0.37	0.20	µg/Wipe	0.500		74.0	40-140	35.7	* 30	R-05
Aroclor-1260	0.36	0.20	µg/Wipe	0.500		71.9	40-140	34.8	* 30	R-05
Aroclor-1260 [2C]	0.36	0.20	µg/Wipe	0.500		72.5	40-140	35.3	* 30	R-05
Surrogate: Decachlorobiphenyl	1.45		µg/Wipe	2.00		72.5	30-150			
Surrogate: Decachlorobiphenyl [2C]	1.48		µg/Wipe	2.00		74.0	30-150			
Surrogate: Tetrachloro-m-xylene	1.41		µg/Wipe	2.00		70.5	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	1.44		µg/Wipe	2.00		72.0	30-150			

**FLAG/QUALIFIER SUMMARY**

*	QC result is outside of established limits.
†	Wide recovery limits established for difficult compound.
‡	Wide RPD limits established for difficult compound.
#	Data exceeded client recommended or regulatory level
	Percent recoveries and relative percent differences (RPDs) are determined by the software using values in the calculation which have not been rounded.
	No results have been blank subtracted unless specified in the case narrative section.
R-05	Laboratory fortified blank duplicate RPD is outside of control limits. Reduced precision is anticipated for any reported value for this compound.



# CERTIFICATIONS

## Certified Analyses included in this Report

Analyte	Certifications
---------	----------------

## No certified Analyses included in this Report

The CON-TEST Environmental Laboratory operates under the following certifications and accreditations:

Code	Description	Number	Expires
AIHA	AIHA-LAP, LLC	100033	02/1/2014
MA	Massachusetts DEP	M-MA100	06/30/2014
CT	Connecticut Department of Public Health	PH-0567	09/30/2015
NY	New York State Department of Health	10899 NELAP	04/1/2014
NH-S	New Hampshire Environmental Lab	2516 NELAP	02/5/2014
RI	Rhode Island Department of Health	LAO00112	12/30/2013
NC	North Carolina Div. of Water Quality	652	12/31/2013
NJ	New Jersey DEP	MA007 NELAP	06/30/2014
FL	Florida Department of Health	E871027 NELAP	06/30/2014
VT	Vermont Department of Health Lead Laboratory	LL015036	07/30/2014
WA	State of Washington Department of Ecology	C2065	02/23/2014
ME	State of Maine	2011028	06/9/2015
VA	Commonwealth of Virginia	460217	12/14/2013
NH-P	New Hampshire Environmental Lab	2557 NELAP	09/6/2014



# CON-TEST

ANALYTICAL LABORATORY

Phone: 413-525-2332

Fax: 413-525-6405

Email: info@contestlabs.com  
www.contestlabs.com

## CHAIN OF CUSTODY RECORD

Rev 04.06.12

39 Spruce Street  
East Longmeadow, MA 01028

Page 1 of 2

Company Name: Massachusetts Turnpike Authority

Telephone: \_\_\_\_\_

Address: 40 the Shady Rd Suite 110

Project # 225695

City: Andover, MA

Client P.O.# \_\_\_\_\_

Attention: J. Harold G. Franklin, E. P. Pinnard

DATA DELIVERY (check all that apply)  
☐ FAX ☒ EMAIL ☐ WEBSITE

Project Location: Mass CT m-10

Sampled By: Kim Pinnard

Project Proposal Provided? (for billing purposes)  
☐ yes ☐ no

Proposal date: \_\_\_\_\_

Con-Test Lab ID \_\_\_\_\_

Client Sample ID / Description \_\_\_\_\_

Beginning Date/Time \_\_\_\_\_

Ending Date/Time \_\_\_\_\_

Composite \_\_\_\_\_

Grab \_\_\_\_\_

\*Matrix Code \_\_\_\_\_

\*Matrix Code \_\_\_\_\_

\*Matrix Code \_\_\_\_\_

\*Matrix Code \_\_\_\_\_

01 LTM-TH-VWC-025

10/10/13 1040

1050 62

W1 U

✓

✓

✓

✓

✓

✓

02 LTM-TH-VWC-026

10/10/13 1050

1050 62

W1 U

✓

✓

✓

✓

✓

✓

03 LTM-SWC-VWC-027

1510 62

1520 62

W1 U

✓

✓

✓

✓

✓

✓

04 LTM-SWC-VWC-028

1520 62

1530 62

W1 U

✓

✓

✓

✓

✓

✓

05 LTM-SWC-VWC-029

1530 62

1540 62

W1 U

✓

✓

✓

✓

✓

✓

06 LTM-SWC-VWC-030

1540 62

1550 62

W1 U

✓

✓

✓

✓

✓

✓

07 LTM-SWC-VWC-031

1550 62

1600 62

W1 U

✓

✓

✓

✓

✓

✓

08 LTM-SWC-VWC-032

1600 62

1610 62

W1 U

✓

✓

✓

✓

✓

✓

09 LTM-SWC-VWC-033

1610 62

1620 62

W1 U

✓

✓

✓

✓

✓

✓

10 LTM-SWC-VWC-034

1620 62

1630 62

W1 U

✓

✓

✓

✓

✓

✓

Comments: EPA 8082 PLG's via 3540C Sublet Ext RL & log/wipe

③ 5 DAY MT.

③ 5 DAY MT.

③ 5 DAY MT.

③ 5 DAY MT.

③ 5 DAY MT.

③ 5 DAY MT.

③ 5 DAY MT.

③ 5 DAY MT.

③ 5 DAY MT.

③ 5 DAY MT.

Relinquished by: (signature)

Date Time: \_\_\_\_\_

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Received by: (signature)

Date Time: \_\_\_\_\_

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Date Time: \_\_\_\_\_

Date Time: \_\_\_\_\_

Date Time: \_\_\_\_\_

Date Time: \_\_\_\_\_

IS INCORRECT, TURNAROUND TIME WILL NOT START UNTIL ALL QUESTIONS ARE ANSWERED BY OUR CLIENT.

PLEASE BE CAREFUL NOT TO CONTAMINATE THIS DOCUMENT

Is your project MCP or RCP?

☐ MCP Form Required

☐ RCP Form Required

☐ MA State DW Form Required

☐ PWSID # \_\_\_\_\_

☐ NELAC & AIHA-LAP, LLC

☐ WBE/DBE Certified

NEIAC & AIHA-LAP, LLC



Phone: 413-525-2332  
Fax: 413-525-6405  
Email: info@contestlabs.com  
www.contestlabs.com

# CHAIN OF CUSTODY RECORD

39 Spruce Street  
East Longmeadow, MA 01028

Page 2 of 2

Company Name: Woburn 3 Urban

Telephone: \_\_\_\_\_

Address: 40 Southwick Rd Suite 110 Andover, MA

Project # 225695

Attention: Handy Franklin, K. River

Client PO# \_\_\_\_\_

Project Location: WMASS LT mm?

DATA DELIVERY (check all that apply)  
☐ FAX ☒ EMAIL ☐ WEBSITE

Sampled By: Kim River

Fax # \_\_\_\_\_

Project Proposal Provided? (for billing purposes)  
☐ yes ☐ no

Email: \_\_\_\_\_

Proposal date: \_\_\_\_\_

Format: ☒ PDF ☒ EXCEL ☐ GIS

Con-Test Lab ID \_\_\_\_\_

Collection: ☐ "Enhanced Data Package"

Client Sample ID / Description \_\_\_\_\_

Beginning Date/Time \_\_\_\_\_

Ending Date/Time \_\_\_\_\_

Composite \_\_\_\_\_

11 LTM-SWC-VWC-035

10/10/13

1630

62

W1

U

✓

✓

✓

✓

✓

12 LTM-SWC-VWC-036

10/10/13

1640

62

W1

U

✓

✓

✓

✓

✓

13 LTM-SWC-VWC-037

10/10/13

1650

62

U

✓

✓

✓

✓

✓

✓

14 LTM-SWC-VWC-038

10/10/13

1700

62

U

✓

✓

✓

✓

✓

✓

15 LTM-SWC-VWC-039

10/10/13

1740

62

U

✓

✓

✓

✓

✓

✓

16 LTM-SWC-VWC-040

10/10/13

1745

W1

U

✓

✓

✓

✓

✓

✓

17 LTM-SWC-VWC-041

10/10/13

1750

W1

U

✓

✓

✓

✓

✓

✓

18 LTM-SWC-VWC-042

10/10/13

1800

W1

U

✓

✓

✓

✓

✓

✓

19 LTM-SWC-VWC-043

10/10/13

1830

W1

U

✓

✓

✓

✓

✓

✓

20 LTM-SWC-VWC-044

10/10/13

1820

W1

U

✓

✓

✓

✓

✓

✓

Comments: ① EPA 8082 R05 via 3540C Sohllet ② RLE 1g/wipe

Turnaround # \_\_\_\_\_

Detection Limit Requirements \_\_\_\_\_

Massachusetts: \_\_\_\_\_

H - High, M - Medium, L - Low, C - Clean, U - Unknown

Please use the following codes to let Con-Test know if a specific sample may be high in concentration in Matrix/Conc. Code Box:

Is your project MCP or RCP?

MCP Form Required

RCP Form Required

MA State DW Form Required PWSID # \_\_\_\_\_

NEIAC & AIHA-LAP, LLC Accredited

Relinquished by (signature) \_\_\_\_\_

Date/Time: \_\_\_\_\_

7 Day

10 Day

Other 5 Day

RUSH 1

Connecticut: \_\_\_\_\_

Relinquished by (signature) \_\_\_\_\_

Date/Time: \_\_\_\_\_

124 Hr 148 Hr

Require lab approval

Relinquished by (signature) \_\_\_\_\_

Date/Time: \_\_\_\_\_

124 Hr 148 Hr

Require lab approval

Other: \_\_\_\_\_

Relinquished by (signature) \_\_\_\_\_

Date/Time: \_\_\_\_\_

124 Hr 148 Hr

Require lab approval

Other: \_\_\_\_\_

Relinquished by (signature) \_\_\_\_\_

Date/Time: \_\_\_\_\_

Relinquished by (signature) \_\_\_\_\_

Date/Time: \_\_\_\_\_

124 Hr 148 Hr

Require lab approval

Other: \_\_\_\_\_

Relinquished by (signature) \_\_\_\_\_

Date/Time: \_\_\_\_\_

124 Hr 148 Hr

Require lab approval

Other: \_\_\_\_\_

Relinquished by (signature) \_\_\_\_\_

Date/Time: \_\_\_\_\_

Relinquished by (signature) \_\_\_\_\_

Date/Time: \_\_\_\_\_

124 Hr 148 Hr

Require lab approval

Other: \_\_\_\_\_

Relinquished by (signature) \_\_\_\_\_

Date/Time: \_\_\_\_\_

124 Hr 148 Hr

Require lab approval

Other: \_\_\_\_\_

Relinquished by (signature) \_\_\_\_\_

Date/Time: \_\_\_\_\_

Relinquished by (signature) \_\_\_\_\_

Date/Time: \_\_\_\_\_

124 Hr 148 Hr

Require lab approval

Other: \_\_\_\_\_

Relinquished by (signature) \_\_\_\_\_

Date/Time: \_\_\_\_\_

124 Hr 148 Hr

Require lab approval

Other: \_\_\_\_\_

Relinquished by (signature) \_\_\_\_\_

Date/Time: \_\_\_\_\_

Relinquished by (signature) \_\_\_\_\_

Date/Time: \_\_\_\_\_

124 Hr 148 Hr

Require lab approval

Other: \_\_\_\_\_

Relinquished by (signature) \_\_\_\_\_

Date/Time: \_\_\_\_\_

124 Hr 148 Hr

Require lab approval

Other: \_\_\_\_\_

Relinquished by (signature) \_\_\_\_\_

Date/Time: \_\_\_\_\_

Relinquished by (signature) \_\_\_\_\_

Date/Time: \_\_\_\_\_

124 Hr 148 Hr

Require lab approval

Other: \_\_\_\_\_

Relinquished by (signature) \_\_\_\_\_

Date/Time: \_\_\_\_\_

124 Hr 148 Hr

Require lab approval

Other: \_\_\_\_\_

Relinquished by (signature) \_\_\_\_\_

Date/Time: \_\_\_\_\_

Relinquished by (signature) \_\_\_\_\_

Date/Time: \_\_\_\_\_

124 Hr 148 Hr

Require lab approval

Other: \_\_\_\_\_

Relinquished by (signature) \_\_\_\_\_

Date/Time: \_\_\_\_\_

124 Hr 148 Hr

Require lab approval

Other: \_\_\_\_\_

Relinquished by (signature) \_\_\_\_\_

Date/Time: \_\_\_\_\_

**Sample Receipt Checklist**

CLIENT NAME: Woodward & Curran RECEIVED BY: RLT DATE: 10/15/13

1) Was the chain(s) of custody relinquished and signed? Yes No No CoC Included

2) Does the chain agree with the samples? Yes No

If not, explain:

3) Are all the samples in good condition? Yes No

If not, explain:

4) How were the samples received:

On Ice ☒ Direct from Sampling ☐ Ambient ☐ In Cooler(s) ☒

Were the samples received in Temperature Compliance of (2-6°C)? Yes No N/A

Temperature °C by Temp blank \_\_\_\_\_ Temperature °C by Temp gun 2.0°C

5) Are there Dissolved samples for the lab to filter? Yes No

Who was notified \_\_\_\_\_ Date \_\_\_\_\_ Time \_\_\_\_\_

6) Are there any RUSH or SHORT HOLDING TIME samples? Yes No

Who was notified \_\_\_\_\_ Date \_\_\_\_\_ Time \_\_\_\_\_

7) Location where samples are stored:

19

Permission to subcontract samples? Yes No  
(Walk-in clients only) if not already approved  
Client Signature: \_\_\_\_\_

8) Do all samples have the proper Acid pH: Yes No N/A

9) Do all samples have the proper Base pH: Yes No N/A

10) Was the PC notified of any discrepancies with the CoC vs the samples: Yes No N/A

**Containers received at Con-Test**

	# of containers		# of containers
1 Liter Amber		8 oz amber/clear jar	
500 mL Amber		4 oz amber/clear jar	<u>20</u>
250 mL Amber (8oz amber)		2 oz amber/clear jar	
1 Liter Plastic		Plastic Bag / Ziploc	
500 mL Plastic		SOC Kit	
250 mL plastic		Non-ConTest Container	
40 mL Vial - type listed below		Perchlorate Kit	
Colisure / bacteria bottle		Flashpoint bottle	
Dissolved Oxygen bottle		Other glass jar	
Encore		Other	

Laboratory Comments:

40 mL vials: # HCl _____ # Methanol _____	Time and Date Frozen:
Doc# 277 # Bisulfate _____ # DI Water _____	
Rev. 4 August 2013 # Thiosulfate _____ Unpreserved _____	

**Login Sample Receipt Checklist**  
**(Rejection Criteria Listing - Using Sample Acceptance Policy)**  
**Any False statement will be brought to the attention of Client**

Question	Answer (True/False)	Comment
1) The cooler's custody seal, if present, is intact.	T	
2) The cooler or samples do not appear to have been compromised or tampered with.	T	
3) Samples were received on ice.	T	
4) Cooler Temperature is acceptable.	T	
5) Cooler Temperature is recorded.	T	
6) COC is filled out in ink and legible.	T	
7) COC is filled out with all pertinent information.	T	
8) Field Sampler's name present on COC.	T	
9) There are no discrepancies between the sample IDs on the container and the COC.	T	
10) Samples are received within Holding Time.	T	
11) Sample containers have legible labels.	T	
12) Containers are not broken or leaking.	T	
13) Air Cassettes are not broken/open.	NA	
14) Sample collection date/times are provided.	T	
15) Appropriate sample containers are used.	T	
16) Proper collection media used.	T	
17) No headspace sample bottles are completely filled.	T	
18) There is sufficient volume for all requested analyses, including any requested MS/MSDs.	T	
19) Trip blanks provided if applicable.	UA	
20) VOA sample vials do not have head space or bubble is <6mm (1/4") in diameter.	NA	
21) Samples do not require splitting or compositing.	T	

Doc #277 Rev. 4 August 2013

Who notified of False statements?

Log-In Technician Initials:

Date/Time:

Date/Time:

RLF 10/15/13 1600



Phone: 413-525-2332

Fax: 413-525-6405

Email: info@contestlabs.com

www.contestlabs.com

# CHAIN OF CUSTODY RECORD

Rev 04.05.12  
13J0566121310566

39 Spruce Street  
East Longmeadow, MA 01028

Page 1 of 1

Company Name: Weaver's Lumber

Address: 40 Southside Rd Site 110 Andover, MA

Telephone:

Project # 225695

Client P.O.#

DATA DELIVERY (check all that apply)

☐ FAX ☒ EMAIL ☐ WEBSITE

Fax #

Email

Format

☒ PDF ☒ EXCEL ☐ GIS

☐ OTHER

☐ "Enhanced Data Package"

Project Proposal Provided? (for billing purposes)

☐ Yes ☐ No

Proposal date

Con-Test Lab ID

Client Sample ID / Description

Beginning Date/Time

Ending Date/Time

Composite

Grab

Wet

Dry

Wet

Dry

Wet

Dry

Wet

Dry

Wet

Dry

Wet

Dry

Wet

Dry

Wet

## ANALYSIS REQUESTED

Field Filtered

Lab to Filter

Disolved Metals

Field Filtered

Lab to Filter

Disolved Metals

Field Filtered

Lab to Filter

Disolved Metals

Field Filtered

Lab to Filter

Disolved Metals

Field Filtered

Lab to Filter

Disolved Metals

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Field Filtered

Lab to Filter

Disolved Metals

Field Filtered

# of Containers

\*\* Preservation

\*\*\* Container Code

Disolved Metals

Field Filtered

Lab to Filter

Disolved Metals

Field Filtered

Lab to Filter

Disolved Metals

Field Filtered

Lab to Filter

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Lab to Filter

Disolved Metals

Field Filtered

Lab to Filter

Disolved Metals

Field Filtered

Lab to Filter

Disolved Metals

Field Filtered

Lab to Filter

Disolved Metals

39 Spruce St.  
East Longmeadow, MA. 01028  
P: 413-525-2332  
F: 413-525-6405  
www.contestlabs.com



Page 1 of 2

## Sample Receipt Checklist

CLIENT NAME: Woodard & Curran RECEIVED BY: KOB DATE: 10-17-13

1) Was the chain(s) of custody relinquished and signed? Yes No No CoC Included

2) Does the chain agree with the samples? Yes No

If not, explain:

3) Are all the samples in good condition? Yes No

If not, explain:

4) How were the samples received:

On Ice ☒ Direct from Sampling ☐ Ambient ☐ In Cooler(s) ☒

Were the samples received in Temperature Compliance of (2-6°C)? Yes No N/A

Temperature °C by Temp blank \_\_\_\_\_ Temperature °C by Temp gun 4.2°C

5) Are there Dissolved samples for the lab to filter? Yes No

Who was notified \_\_\_\_\_ Date \_\_\_\_\_ Time \_\_\_\_\_

6) Are there any RUSH or SHORT HOLDING TIME samples? Yes No

Who was notified \_\_\_\_\_ Date \_\_\_\_\_ Time \_\_\_\_\_

7) Location where samples are stored:

19

Permission to subcontract samples? Yes No  
(Walk-in clients only) if not already approved  
Client Signature: \_\_\_\_\_

8) Do all samples have the proper Acid pH: Yes No N/A

9) Do all samples have the proper Base pH: Yes No N/A

10) Was the PC notified of any discrepancies with the CoC vs the samples: Yes No N/A

### Containers received at Con-Test

	# of containers		# of containers
1 Liter Amber		8 oz amber/clear jar	
500 mL Amber		4 oz amber/clear jar	<u>1</u>
250 mL Amber (8oz amber)		2 oz amber/clear jar	
1 Liter Plastic		Plastic Bag / Ziploc	
500 mL Plastic		SOC Kit	
250 mL plastic		Non-ConTest Container	
40 mL Vial - type listed below		Perchlorate Kit	
Colisure / bacteria bottle		Flashpoint bottle	
Dissolved Oxygen bottle		Other glass jar	
Encore		Other	

Laboratory Comments:

40 mL vials: # HCl \_\_\_\_\_ # Methanol \_\_\_\_\_  
# Bisulfate \_\_\_\_\_ # DI Water \_\_\_\_\_  
# Thiosulfate \_\_\_\_\_ Unpreserved \_\_\_\_\_

Time and Date Frozen:

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**Login Sample Receipt Checklist**  
**(Rejection Criteria Listing - Using Sample Acceptance Policy)**  
**Any False statement will be brought to the attention of Client**

Question	Answer (True/False)	Comment
	T/F/NA	
1) The cooler's custody seal, if present, is intact.	NA	
2) The cooler or samples do not appear to have been compromised or tampered with.	T	
3) Samples were received on ice.	T	
4) Cooler Temperature is acceptable.	T	
5) Cooler Temperature is recorded.	T	
6) COC is filled out in ink and legible.	T	
7) COC is filled out with all pertinent information.	T	
8) Field Sampler's name present on COC.	T	
9) There are no discrepancies between the sample IDs on the container and the COC.	T	
10) Samples are received within Holding Time.	T	
11) Sample containers have legible labels.	T	
12) Containers are not broken or leaking.	T	
13) Air Cassettes are not broken/open.	NA	
14) Sample collection date/times are provided.	T	
15) Appropriate sample containers are used.	T	
16) Proper collection media used.	T	
17) No headspace sample bottles are completely filled.	T	
18) There is sufficient volume for all requested analyses, including any requested MS/MSDs.	T	
19) Trip blanks provided if applicable.	NA	
20) VOA sample vials do not have head space or bubble is <6mm (1/4") in diameter.	NA	
21) Samples do not require splitting or compositing.	T	

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Who notified of False statements?

Log-In Technician Initials: K013

Date/Time:

Date/Time: 10-17-13 1330





## Container Codes

Control

... ..

ST-zerile

S-Adams can  
I better than

1. **Introduction**  
 2. **Background**  
 3. **Methodology**  
 4. **Results**  
 5. **Conclusion**  
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Figure 1

136

# SECRET

# Sumner

X - Hydroxide

Donnerstag

Figure 1. Schematic representation of the experimental design. The subjects were divided into two groups: the control group (CG) and the experimental group (EG). The CG was divided into two subgroups: the control group (CG) and the control group (CG). The EG was divided into two subgroups: the experimental group (EG) and the experimental group (EG). The CG was divided into two subgroups: the control group (CG) and the control group (CG). The EG was divided into two subgroups: the experimental group (EG) and the experimental group (EG).

GW-Projekt

D.W.-drinking water

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Accredited

21 ETHEL Y DOR

PLEASE BE CAREFUL NOT TO CONTAMINATE THIS DOCUMENT

## Meghan Kelley

---

**From:** Kim Rinard [krinard@woodardcurran.com]  
**Sent:** Monday, October 21, 2013 10:41 AM  
**To:** Meghan Kelly (mkelley@contestlabs.com)  
**Subject:** 13J0672 UMass Southwest LT MMIP  
**Attachments:** 13J0672\_Modified COC K Rinard.pdf

Good morning Meghan

Please revise the sample ID for this report as noted on the attached COC.

Thank you!

Kim Rinard  
Scientist

Woodard & Curran  
40 Shattuck Road Suite 110  
Andover, Massachusetts 01810

Office: (978)557-8150 x3647  
Office: (866)702-6371  
Fax: (978)557-7948  
Cell: (413)531-4455

October 21, 2013

George Franklin  
Woodard & Curran - Andover, MA  
40 Shattuck Road., Suite 110  
Andover, MA 01810

Project Location: UMass LT MMin  
Client Job Number:  
Project Number: 225695  
Laboratory Work Order Number: 13J0568

Enclosed are results of analyses for samples received by the laboratory on October 15, 2013. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, reading "Meghan E. Kelley". The signature is written in a cursive, flowing style.

Meghan E. Kelley  
Project Manager

Woodard & Curran - Andover, MA  
40 Shattuck Road., Suite 110  
Andover, MA 01810  
ATTN: George Franklin

REPORT DATE: 10/21/2013

PURCHASE ORDER NUMBER:

PROJECT NUMBER: 225695

**ANALYTICAL SUMMARY**

WORK ORDER NUMBER: 13J0568

The results of analyses performed on the following samples submitted to the CON-TEST Analytical Laboratory are found in this report.

PROJECT LOCATION: UMass LT MMin

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
DL-23EO-VWC-146	13J0568-01	Wipe		SW-846 8082A	
DL-21E3-VWC-147	13J0568-02	Wipe		SW-846 8082A	
DL-20E3-VWC-148	13J0568-03	Wipe		SW-846 8082A	
DL-19EO-VWC-149	13J0568-04	Wipe		SW-846 8082A	
DL-16E5-VWC-150	13J0568-05	Wipe		SW-846 8082A	
DL-10E0-VWC-151	13J0568-06	Wipe		SW-846 8082A	
DL-4E0-VWC-152	13J0568-07	Wipe		SW-846 8082A	

#### CASE NARRATIVE SUMMARY

All reported results are within defined laboratory quality control objectives unless listed below or otherwise qualified in this report.

The results of analyses reported only relate to samples submitted to the Con-Test Analytical Laboratory for testing.

I certify that the analyses listed above, unless specifically listed as subcontracted, if any, were performed under my direction according to the approved methodologies listed in this document, and 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.

A handwritten signature in black ink, appearing to read "Daren J. Damboragian", is written over a light gray rectangular background.

Daren J. Damboragian  
Laboratory Manager

Project Location: UMass LT MMin

Sample Description:

Work Order: 13J0568

Date Received: 10/15/2013

Field Sample #: DL-23EO-VWC-146

Sampled: 10/11/2013 12:40

Sample ID: 13J0568-01

Sample Matrix: Wipe

**Polychlorinated Biphenyls with 3540 Soxhlet Extraction**

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 16:35	JMB
Aroclor-1221 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 16:35	JMB
Aroclor-1232 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 16:35	JMB
Aroclor-1242 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 16:35	JMB
Aroclor-1248 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 16:35	JMB
Aroclor-1254 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 16:35	JMB
Aroclor-1260 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 16:35	JMB
Aroclor-1262 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 16:35	JMB
Aroclor-1268 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 16:35	JMB
Surrogates	% Recovery	Recovery Limits	Flag/Qual						
Decachlorobiphenyl [1]	98.3	30-150							
Decachlorobiphenyl [2]	103	30-150							
Tetrachloro-m-xylene [1]	96.1	30-150							
Tetrachloro-m-xylene [2]	101	30-150							

Project Location: UMass LT MMin

Sample Description:

Work Order: 13J0568

Date Received: 10/15/2013

Field Sample #: DL-21E3-VWC-147

Sampled: 10/11/2013 12:55

Sample ID: 13J0568-02

Sample Matrix: Wipe

**Polychlorinated Biphenyls with 3540 Soxhlet Extraction**

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 16:48	JMB
Aroclor-1221 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 16:48	JMB
Aroclor-1232 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 16:48	JMB
Aroclor-1242 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 16:48	JMB
Aroclor-1248 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 16:48	JMB
Aroclor-1254 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 16:48	JMB
Aroclor-1260 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 16:48	JMB
Aroclor-1262 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 16:48	JMB
Aroclor-1268 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 16:48	JMB
Surrogates	% Recovery	Recovery Limits	Flag/Qual						
Decachlorobiphenyl [1]	96.0	30-150						10/17/13 16:48	
Decachlorobiphenyl [2]	99.6	30-150						10/17/13 16:48	
Tetrachloro-m-xylene [1]	91.8	30-150						10/17/13 16:48	
Tetrachloro-m-xylene [2]	95.1	30-150						10/17/13 16:48	

Project Location: UMass LT MMin

Sample Description:

Work Order: 13J0568

Date Received: 10/15/2013

Field Sample #: DL-20E3-VWC-148

Sampled: 10/11/2013 13:05

Sample ID: 13J0568-03

Sample Matrix: Wipe

**Polychlorinated Biphenyls with 3540 Soxhlet Extraction**

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 17:00	JMB
Aroclor-1221 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 17:00	JMB
Aroclor-1232 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 17:00	JMB
Aroclor-1242 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 17:00	JMB
Aroclor-1248 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 17:00	JMB
Aroclor-1254 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 17:00	JMB
Aroclor-1260 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 17:00	JMB
Aroclor-1262 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 17:00	JMB
Aroclor-1268 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 17:00	JMB
Surrogates	% Recovery	Recovery Limits	Flag/Qual						
Decachlorobiphenyl [1]	98.2	30-150						10/17/13 17:00	
Decachlorobiphenyl [2]	102	30-150						10/17/13 17:00	
Tetrachloro-m-xylene [1]	95.4	30-150						10/17/13 17:00	
Tetrachloro-m-xylene [2]	99.1	30-150						10/17/13 17:00	



Project Location: UMass LT MMin

Sample Description:

Work Order: 13J0568

Date Received: 10/15/2013

Field Sample #: DL-19EO-VWC-149

Sampled: 10/11/2013 13:15

Sample ID: 13J0568-04

Sample Matrix: Wipe

**Polychlorinated Biphenyls with 3540 Soxhlet Extraction**

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 17:13	JMB
Aroclor-1221 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 17:13	JMB
Aroclor-1232 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 17:13	JMB
Aroclor-1242 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 17:13	JMB
Aroclor-1248 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 17:13	JMB
Aroclor-1254 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 17:13	JMB
Aroclor-1260 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 17:13	JMB
Aroclor-1262 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 17:13	JMB
Aroclor-1268 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 17:13	JMB
Surrogates	% Recovery	Recovery Limits	Flag/Qual						
Decachlorobiphenyl [1]	99.6	30-150						10/17/13 17:13	
Decachlorobiphenyl [2]	103	30-150						10/17/13 17:13	
Tetrachloro-m-xylene [1]	98.2	30-150						10/17/13 17:13	
Tetrachloro-m-xylene [2]	100	30-150						10/17/13 17:13	

Project Location: UMass LT MMin

Sample Description:

Work Order: 13J0568

Date Received: 10/15/2013

Field Sample #: DL-16E5-VWC-150

Sampled: 10/11/2013 13:25

Sample ID: 13J0568-05

Sample Matrix: Wipe

**Polychlorinated Biphenyls with 3540 Soxhlet Extraction**

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 17:25	JMB
Aroclor-1221 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 17:25	JMB
Aroclor-1232 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 17:25	JMB
Aroclor-1242 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 17:25	JMB
Aroclor-1248 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 17:25	JMB
Aroclor-1254 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 17:25	JMB
Aroclor-1260 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 17:25	JMB
Aroclor-1262 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 17:25	JMB
Aroclor-1268 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 17:25	JMB
Surrogates	% Recovery	Recovery Limits	Flag/Qual						
Decachlorobiphenyl [1]	93.1	30-150							
Decachlorobiphenyl [2]	96.9	30-150							
Tetrachloro-m-xylene [1]	91.0	30-150							
Tetrachloro-m-xylene [2]	93.7	30-150							

Project Location: UMass LT MMin

Sample Description:

Work Order: 13J0568

Date Received: 10/15/2013

Field Sample #: DL-10E0-VWC-151

Sampled: 10/11/2013 13:35

Sample ID: 13J0568-06

Sample Matrix: Wipe

**Polychlorinated Biphenyls with 3540 Soxhlet Extraction**

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 17:37	JMB
Aroclor-1221 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 17:37	JMB
Aroclor-1232 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 17:37	JMB
Aroclor-1242 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 17:37	JMB
Aroclor-1248 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 17:37	JMB
Aroclor-1254 [1]	0.49	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 17:37	JMB
Aroclor-1260 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 17:37	JMB
Aroclor-1262 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 17:37	JMB
Aroclor-1268 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 17:37	JMB
Surrogates	% Recovery	Recovery Limits	Flag/Qual						
Decachlorobiphenyl [1]	98.3	30-150							
Decachlorobiphenyl [2]	102	30-150							
Tetrachloro-m-xylene [1]	101	30-150							
Tetrachloro-m-xylene [2]	103	30-150							

Project Location: UMass LT MMin

Sample Description:

Work Order: 13J0568

Date Received: 10/15/2013

Field Sample #: DL-4E0-VWC-152

Sampled: 10/11/2013 13:45

Sample ID: 13J0568-07

Sample Matrix: Wipe

**Polychlorinated Biphenyls with 3540 Soxhlet Extraction**

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 17:50	JMB
Aroclor-1221 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 17:50	JMB
Aroclor-1232 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 17:50	JMB
Aroclor-1242 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 17:50	JMB
Aroclor-1248 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 17:50	JMB
Aroclor-1254 [1]	0.49	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 17:50	JMB
Aroclor-1260 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 17:50	JMB
Aroclor-1262 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 17:50	JMB
Aroclor-1268 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/15/13	10/17/13 17:50	JMB
Surrogates	% Recovery	Recovery Limits	Flag/Qual						
Decachlorobiphenyl [1]	97.0	30-150							
Decachlorobiphenyl [2]	100	30-150							
Tetrachloro-m-xylene [1]	94.2	30-150							
Tetrachloro-m-xylene [2]	97.3	30-150							

### Sample Extraction Data

Prep Method: SW-846 3540C-SW-846 8082A

Lab Number [Field ID]	Batch	Initial [Wipe]	Final [mL]	Date
13J0568-01 [DL-23EO-VWC-146]	B082987	1.00	10.0	10/15/13
13J0568-02 [DL-21E3-VWC-147]	B082987	1.00	10.0	10/15/13
13J0568-03 [DL-20E3-VWC-148]	B082987	1.00	10.0	10/15/13
13J0568-04 [DL-19EO-VWC-149]	B082987	1.00	10.0	10/15/13
13J0568-05 [DL-16E5-VWC-150]	B082987	1.00	10.0	10/15/13
13J0568-06 [DL-10E0-VWC-151]	B082987	1.00	10.0	10/15/13
13J0568-07 [DL-4E0-VWC-152]	B082987	1.00	10.0	10/15/13

**QUALITY CONTROL**
**Polychlorinated Biphenyls with 3540 Soxhlet Extraction - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch B082987 - SW-846 3540C**
**Blank (B082987-BLK1)**

Prepared: 10/15/13 Analyzed: 10/17/13

Aroclor-1016	ND	0.20	µg/Wipe							
Aroclor-1016 [2C]	ND	0.20	µg/Wipe							
Aroclor-1221	ND	0.20	µg/Wipe							
Aroclor-1221 [2C]	ND	0.20	µg/Wipe							
Aroclor-1232	ND	0.20	µg/Wipe							
Aroclor-1232 [2C]	ND	0.20	µg/Wipe							
Aroclor-1242	ND	0.20	µg/Wipe							
Aroclor-1242 [2C]	ND	0.20	µg/Wipe							
Aroclor-1248	ND	0.20	µg/Wipe							
Aroclor-1248 [2C]	ND	0.20	µg/Wipe							
Aroclor-1254	ND	0.20	µg/Wipe							
Aroclor-1254 [2C]	ND	0.20	µg/Wipe							
Aroclor-1260	ND	0.20	µg/Wipe							
Aroclor-1260 [2C]	ND	0.20	µg/Wipe							
Aroclor-1262	ND	0.20	µg/Wipe							
Aroclor-1262 [2C]	ND	0.20	µg/Wipe							
Aroclor-1268	ND	0.20	µg/Wipe							
Aroclor-1268 [2C]	ND	0.20	µg/Wipe							
Surrogate: Decachlorobiphenyl	2.05		µg/Wipe	2.00		102	30-150			
Surrogate: Decachlorobiphenyl [2C]	2.14		µg/Wipe	2.00		107	30-150			
Surrogate: Tetrachloro-m-xylene	1.89		µg/Wipe	2.00		94.4	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	1.97		µg/Wipe	2.00		98.4	30-150			

**LCS (B082987-BS1)**

Prepared: 10/15/13 Analyzed: 10/17/13

Aroclor-1016	0.49	0.20	µg/Wipe	0.500		97.9	40-140			
Aroclor-1016 [2C]	0.48	0.20	µg/Wipe	0.500		96.6	40-140			
Aroclor-1260	0.47	0.20	µg/Wipe	0.500		93.6	40-140			
Aroclor-1260 [2C]	0.48	0.20	µg/Wipe	0.500		96.4	40-140			
Surrogate: Decachlorobiphenyl	1.90		µg/Wipe	2.00		95.1	30-150			
Surrogate: Decachlorobiphenyl [2C]	1.98		µg/Wipe	2.00		99.1	30-150			
Surrogate: Tetrachloro-m-xylene	1.82		µg/Wipe	2.00		90.9	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	1.88		µg/Wipe	2.00		94.2	30-150			

**LCS Dup (B082987-BSD1)**

Prepared: 10/15/13 Analyzed: 10/17/13

Aroclor-1016	0.48	0.20	µg/Wipe	0.500		95.4	40-140	2.61	30	
Aroclor-1016 [2C]	0.47	0.20	µg/Wipe	0.500		94.2	40-140	2.45	30	
Aroclor-1260	0.46	0.20	µg/Wipe	0.500		91.1	40-140	2.77	30	
Aroclor-1260 [2C]	0.47	0.20	µg/Wipe	0.500		93.7	40-140	2.87	30	
Surrogate: Decachlorobiphenyl	1.84		µg/Wipe	2.00		92.1	30-150			
Surrogate: Decachlorobiphenyl [2C]	1.91		µg/Wipe	2.00		95.6	30-150			
Surrogate: Tetrachloro-m-xylene	1.76		µg/Wipe	2.00		88.0	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	1.82		µg/Wipe	2.00		90.9	30-150			

**FLAG/QUALIFIER SUMMARY**

- \* QC result is outside of established limits.
- † Wide recovery limits established for difficult compound.
- ‡ Wide RPD limits established for difficult compound.
- # Data exceeded client recommended or regulatory level

Percent recoveries and relative percent differences (RPDs) are determined by the software using values in the calculation which have not been rounded.

No results have been blank subtracted unless specified in the case narrative section.

# CERTIFICATIONS

## Certified Analyses included in this Report

Analyte	Certifications
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## No certified Analyses included in this Report

The CON-TEST Environmental Laboratory operates under the following certifications and accreditations:

Code	Description	Number	Expires
AIHA	AIHA-LAP, LLC	100033	02/1/2014
MA	Massachusetts DEP	M-MA100	06/30/2014
CT	Connecticut Department of Public Health	PH-0567	09/30/2015
NY	New York State Department of Health	10899 NELAP	04/1/2014
NH-S	New Hampshire Environmental Lab	2516 NELAP	02/5/2014
RI	Rhode Island Department of Health	LAO00112	12/30/2013
NC	North Carolina Div. of Water Quality	652	12/31/2013
NJ	New Jersey DEP	MA007 NELAP	06/30/2014
FL	Florida Department of Health	E871027 NELAP	06/30/2014
VT	Vermont Department of Health Lead Laboratory	LL015036	07/30/2014
WA	State of Washington Department of Ecology	C2065	02/23/2014
ME	State of Maine	2011028	06/9/2015
VA	Commonwealth of Virginia	460217	12/14/2013
NH-P	New Hampshire Environmental Lab	2557 NELAP	09/6/2014





**con-test**  
ANALYTICAL LABORATORY

Phone: 413-525-2332  
Fax: 413-525-6405  
Email: info@contestlabs.com  
www.contestlabs.com

**CHAIN OF CUSTODY RECORD**

39 Spruce Street  
East Longmeadow, MA 01028

Page 1 of 1

Company Name: Woodward & Looney

Telephone:

Address: 40 Shattuck Rd Suite 110

Project # 225695

Andover, MA

Client PO#

Attention: Harvey G. Enck, Jr. & Richard

DATA DELIVERY (check all that apply)  
☐ FAX ☒ EMAIL ☐ WEBSITE

Project Location: UMASS LT main

Fax #

Sampled By: Kim Rinaldi

Email:

Project Proposal Provided? (for billing purposes)  
☐ Yes ☐ No proposal date

Format: ☒ PDF ☒ EXCEL ☐ GIS  
☐ OTHER

Con-Test Lab ID <small>(Laboratory use only)</small>	Client Sample ID / Description	Beginning Date/Time	Ending Date/Time	Collection	Composite	Grab	*Matrix Code	Conc. Limit
01	DL-23EO-VWC-146	10/11/13	1240				W1	U
02	DL-21E3-VWC-147		1255				U	✓
03	DL-20E3-VWC-148		1305				U	✓
04	DL-19EO-VWC-149		1315				U	✓
05	DL-16E5-VWC-150		1325				U	✓
06	DL-10EO-VWC-151	10/11/13	1335				W1	✓
07	DL-4EO-VWC-152		1345				U	✓
		10/11/13						

Comments: ① EPA 8082 PL 31 U-1A 3540c Soil/Lt ② PL 4 Lug/wipe

Please use the following codes to let Con-Test know if a specific sample may be high in concentration in Matrix/Conc. Code Box:

H - High; M - Medium; L - Low; C - Clean; U - Unknown

Relinquished by: (signature) [Signature] Date/Time: 10/11/13 1630

Turnaround ☐ 7-Day ☐ 10-Day ☒ Other 5 DAY

Detection Limit Requirements  
Massachusetts: \_\_\_\_\_

Is your project MCP or RCP?

Relinquished by: (signature) [Signature] Date/Time: 10/11/13 1115

Turnaround ☐ 7-Day ☐ 10-Day ☒ Other 5 DAY

Detection Limit Requirements  
Massachusetts: \_\_\_\_\_

Is your project MCP or RCP?

Relinquished by: (signature) [Signature] Date/Time: 10/11/13 1115

Turnaround ☐ 7-Day ☐ 10-Day ☒ Other 5 DAY

Detection Limit Requirements  
Massachusetts: \_\_\_\_\_

Is your project MCP or RCP?

Relinquished by: (signature) [Signature] Date/Time: 10/11/13 1115

Turnaround ☐ 7-Day ☐ 10-Day ☒ Other 5 DAY

Detection Limit Requirements  
Massachusetts: \_\_\_\_\_

Is your project MCP or RCP?

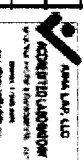
**\*\*Matrix Code:**  
GW = groundwater  
WW = wastewater  
DW = drinking water  
A = air  
S = soil/solid  
SL = sludge  
O = other

**\*\*Preservation:**  
I = Iced  
H = HCL  
M = Methanol  
N = Nitric Acid  
S = Sulfuric Acid  
B = Sodium bisulfate  
X = Na hydroxide  
T = Na thiosulfate  
O = Other

**\*\*\*Container Code:**  
A = amber glass  
G = glass  
P = plastic  
ST = sterile  
V = vial  
S = summa can  
T = Tedlar bag  
O = Other

**\*\*\*Cont. Code:**  
A = amber glass  
G = glass  
P = plastic  
ST = sterile  
V = vial  
S = summa can  
T = Tedlar bag  
O = Other

**\*\*\*Container Code:**  
A = amber glass  
G = glass  
P = plastic  
ST = sterile  
V = vial  
S = summa can  
T = Tedlar bag  
O = Other



NEALAC & AHA-LAP, LLC  
Accredited

WBE/DBE Certified

TURNAROUND TIME STARTS AT 9:00 AM THE DAY AFTER SAMPLE RECEIPT UNLESS THERE ARE QUESTIONS ON YOUR CHAIN. IF THIS FORM IS NOT FILLED OUT COMPLETELY OR IS INCORRECT, TURNAROUND TIME WILL NOT START UNTIL ALL QUESTIONS ARE ANSWERED BY OUR CLIENT.

PLEASE BE CAREFUL NOT TO CONTAMINATE THIS DOCUMENT

39 Spruce St.  
East Longmeadow, MA. 01028  
P: 413-525-2332  
F: 413-525-6405  
www.contestlabs.com



Page 1 of 2



## Sample Receipt Checklist

CLIENT NAME: Woodard & Curran RECEIVED BY: RLT DATE: 10/15/13

1) Was the chain(s) of custody relinquished and signed? Yes No No CoC Included

2) Does the chain agree with the samples? Yes No

If not, explain:

3) Are all the samples in good condition? Yes No

If not, explain:

4) How were the samples received:

On Ice ☒ Direct from Sampling ☐ Ambient ☐ In Cooler(s) ☒

Were the samples received in Temperature Compliance of (2-6°C)? Yes No N/A

Temperature °C by Temp blank \_\_\_\_\_ Temperature °C by Temp gun 2.0°C

5) Are there Dissolved samples for the lab to filter? Yes No

Who was notified \_\_\_\_\_ Date \_\_\_\_\_ Time \_\_\_\_\_

6) Are there any RUSH or SHORT HOLDING TIME samples? Yes No

Who was notified \_\_\_\_\_ Date \_\_\_\_\_ Time \_\_\_\_\_

7) Location where samples are stored:

19

Permission to subcontract samples? Yes No  
(Walk-in clients only) if not already approved  
Client Signature: \_\_\_\_\_

8) Do all samples have the proper Acid pH: Yes No N/A

9) Do all samples have the proper Base pH: Yes No N/A

10) Was the PC notified of any discrepancies with the CoC vs the samples: Yes No N/A

### Containers received at Con-Test

	# of containers		# of containers
1 Liter Amber		8 oz amber/clear jar	
500 mL Amber		4 oz amber <u>clear</u> jar	<u>7</u>
250 mL Amber (8oz amber)		2 oz amber/clear jar	
1 Liter Plastic		Plastic Bag / Ziploc	
500 mL Plastic		SOC Kit	
250 mL plastic		Non-ConTest Container	
40 mL Vial - type listed below		Perchlorate Kit	
Colisure / bacteria bottle		Flashpoint bottle	
Dissolved Oxygen bottle		Other glass jar	
Encore		Other	

Laboratory Comments:

40 mL vials: # HCl _____ # Methanol _____	Time and Date Frozen:
# Bisulfate _____ # DI Water _____	
# Thiosulfate _____ Unpreserved _____	

Doc# 277

Rev. 4 August 2013

**Login Sample Receipt Checklist**  
**(Rejection Criteria Listing - Using Sample Acceptance Policy)**  
**Any False statement will be brought to the attention of Client**

<u>Question</u>	<u>Answer (True/False)</u>	<u>Comment</u>
	T/F/NA	
1) The cooler's custody seal, if present, is intact.	T	
2) The cooler or samples do not appear to have been compromised or tampered with.	T	
3) Samples were received on ice.	T	
4) Cooler Temperature is acceptable.	T	
5) Cooler Temperature is recorded.	T	
6) COC is filled out in ink and legible.	T	
7) COC is filled out with all pertinent information.	T	
8) Field Sampler's name present on COC.	T	
9) There are no discrepancies between the sample IDs on the container and the COC.	T	
10) Samples are received within Holding Time.	T	
11) Sample containers have legible labels.	T	
12) Containers are not broken or leaking.	T	
13) Air Cassettes are not broken/open.	NA	
14) Sample collection date/times are provided.	T	
15) Appropriate sample containers are used.	T	
16) Proper collection media used.	T	
17) No headspace sample bottles are completely filled.	T	
18) There is sufficient volume for all requested analyses, including any requested MS/MSDs.	T	
19) Trip blanks provided if applicable.	NA	
20) VOA sample vials do not have head space or bubble is <6mm (1/4") in diameter.	NA	
21) Samples do not require splitting or compositing.	T	

Who notified of False statements?

Date/Time:

Doc #277 Rev. 4 August 2013

Log-In Technician Initials:

Date/Time:

RLF 10/15/13 1600

November 6, 2013

George Franklin  
Woodard & Curran - Andover, MA  
40 Shattuck Road., Suite 110  
Andover, MA 01810

Project Location: UMASS LT MMIP  
Client Job Number:  
Project Number: 225695  
Laboratory Work Order Number: 13J1203

Enclosed are results of analyses for samples received by the laboratory on October 30, 2013. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Meghan E. Kelley  
Project Manager

Woodard & Curran - Andover, MA  
40 Shattuck Road., Suite 110  
Andover, MA 01810  
ATTN: George Franklin

REPORT DATE: 11/6/2013

PURCHASE ORDER NUMBER:

PROJECT NUMBER: 225695

**ANALYTICAL SUMMARY**

WORK ORDER NUMBER: 13J1203

The results of analyses performed on the following samples submitted to the CON-TEST Analytical Laboratory are found in this report.

PROJECT LOCATION: UMASS LT MMIP

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
LTM-SWC-VWC-046	13J1203-01	Wipe		SW-846 8082A	

#### CASE NARRATIVE SUMMARY

All reported results are within defined laboratory quality control objectives unless listed below or otherwise qualified in this report.

The results of analyses reported only relate to samples submitted to the Con-Test Analytical Laboratory for testing.

I certify that the analyses listed above, unless specifically listed as subcontracted, if any, were performed under my direction according to the approved methodologies listed in this document, and 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.

A handwritten signature in black ink, appearing to read "M. Erickson", is displayed on a light gray rectangular background.

Michael A. Erickson  
Laboratory Director

Project Location: UMASS LT MMIP

Sample Description:

Work Order: 13J1203

Date Received: 10/30/2013

Field Sample #: LTM-SWC-VWC-046

Sampled: 10/30/2013 10:15

Sample ID: 13J1203-01

Sample Matrix: Wipe

**Polychlorinated Biphenyls with 3540 Soxhlet Extraction**

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/31/13	11/2/13 10:35	MJC
Aroclor-1221 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/31/13	11/2/13 10:35	MJC
Aroclor-1232 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/31/13	11/2/13 10:35	MJC
Aroclor-1242 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/31/13	11/2/13 10:35	MJC
Aroclor-1248 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/31/13	11/2/13 10:35	MJC
Aroclor-1254 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/31/13	11/2/13 10:35	MJC
Aroclor-1260 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/31/13	11/2/13 10:35	MJC
Aroclor-1262 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/31/13	11/2/13 10:35	MJC
Aroclor-1268 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/31/13	11/2/13 10:35	MJC
Surrogates	% Recovery	Recovery Limits	Flag/Qual						
Decachlorobiphenyl [1]	93.9	30-150							
Decachlorobiphenyl [2]	103	30-150							
Tetrachloro-m-xylene [1]	92.9	30-150							
Tetrachloro-m-xylene [2]	99.9	30-150							

**Sample Extraction Data**

**Prep Method: SW-846 3540C-SW-846 8082A**

Lab Number [Field ID]	Batch	Initial [Wipe]	Final [mL]	Date
13J1203-01 [LTM-SWC-VWC-046]	B084141	1.00	10.0	10/31/13



**QUALITY CONTROL**
**Polychlorinated Biphenyls with 3540 Soxhlet Extraction - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

**Batch B084141 - SW-846 3540C**
**Blank (B084141-BLK1)**

Prepared: 10/31/13 Analyzed: 11/02/13

Aroclor-1016	ND	0.20	µg/Wipe							
Aroclor-1016 [2C]	ND	0.20	µg/Wipe							
Aroclor-1221	ND	0.20	µg/Wipe							
Aroclor-1221 [2C]	ND	0.20	µg/Wipe							
Aroclor-1232	ND	0.20	µg/Wipe							
Aroclor-1232 [2C]	ND	0.20	µg/Wipe							
Aroclor-1242	ND	0.20	µg/Wipe							
Aroclor-1242 [2C]	ND	0.20	µg/Wipe							
Aroclor-1248	ND	0.20	µg/Wipe							
Aroclor-1248 [2C]	ND	0.20	µg/Wipe							
Aroclor-1254	ND	0.20	µg/Wipe							
Aroclor-1254 [2C]	ND	0.20	µg/Wipe							
Aroclor-1260	ND	0.20	µg/Wipe							
Aroclor-1260 [2C]	ND	0.20	µg/Wipe							
Aroclor-1262	ND	0.20	µg/Wipe							
Aroclor-1262 [2C]	ND	0.20	µg/Wipe							
Aroclor-1268	ND	0.20	µg/Wipe							
Aroclor-1268 [2C]	ND	0.20	µg/Wipe							
Surrogate: Decachlorobiphenyl	2.03		µg/Wipe	2.00		101	30-150			
Surrogate: Decachlorobiphenyl [2C]	2.19		µg/Wipe	2.00		110	30-150			
Surrogate: Tetrachloro-m-xylene	1.78		µg/Wipe	2.00		89.1	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	1.90		µg/Wipe	2.00		95.1	30-150			

**LCS (B084141-BS1)**

Prepared: 10/31/13 Analyzed: 11/02/13

Aroclor-1016	0.50	0.20	µg/Wipe	0.500		100	40-140			
Aroclor-1016 [2C]	0.51	0.20	µg/Wipe	0.500		103	40-140			
Aroclor-1260	0.52	0.20	µg/Wipe	0.500		104	40-140			
Aroclor-1260 [2C]	0.55	0.20	µg/Wipe	0.500		110	40-140			
Surrogate: Decachlorobiphenyl	2.21		µg/Wipe	2.00		110	30-150			
Surrogate: Decachlorobiphenyl [2C]	2.38		µg/Wipe	2.00		119	30-150			
Surrogate: Tetrachloro-m-xylene	1.79		µg/Wipe	2.00		89.3	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	1.90		µg/Wipe	2.00		95.0	30-150			

**LCS Dup (B084141-BSD1)**

Prepared: 10/31/13 Analyzed: 11/02/13

Aroclor-1016	0.51	0.20	µg/Wipe	0.500		101	40-140	0.897	30	
Aroclor-1016 [2C]	0.53	0.20	µg/Wipe	0.500		105	40-140	2.06	30	
Aroclor-1260	0.50	0.20	µg/Wipe	0.500		100	40-140	3.07	30	
Aroclor-1260 [2C]	0.53	0.20	µg/Wipe	0.500		106	40-140	3.05	30	
Surrogate: Decachlorobiphenyl	2.06		µg/Wipe	2.00		103	30-150			
Surrogate: Decachlorobiphenyl [2C]	2.22		µg/Wipe	2.00		111	30-150			
Surrogate: Tetrachloro-m-xylene	1.88		µg/Wipe	2.00		94.1	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	2.01		µg/Wipe	2.00		101	30-150			

**FLAG/QUALIFIER SUMMARY**

- \* QC result is outside of established limits.
- † Wide recovery limits established for difficult compound.
- ‡ Wide RPD limits established for difficult compound.
- # Data exceeded client recommended or regulatory level

Percent recoveries and relative percent differences (RPDs) are determined by the software using values in the calculation which have not been rounded.

No results have been blank subtracted unless specified in the case narrative section.

**CERTIFICATIONS****Certified Analyses included in this Report****Analyte****Certifications****No certified Analyses included in this Report**

The CON-TEST Environmental Laboratory operates under the following certifications and accreditations:

Code	Description	Number	Expires
AIHA	AIHA-LAP, LLC	100033	02/1/2014
MA	Massachusetts DEP	M-MA100	06/30/2014
CT	Connecticut Department of Public Health	PH-0567	09/30/2015
NY	New York State Department of Health	10899 NELAP	04/1/2014
NH-S	New Hampshire Environmental Lab	2516 NELAP	02/5/2014
RI	Rhode Island Department of Health	LAO00112	12/30/2013
NC	North Carolina Div. of Water Quality	652	12/31/2013
NJ	New Jersey DEP	MA007 NELAP	06/30/2014
FL	Florida Department of Health	E871027 NELAP	06/30/2014
VT	Vermont Department of Health Lead Laboratory	LL015036	07/30/2014
WA	State of Washington Department of Ecology	C2065	02/23/2014
ME	State of Maine	2011028	06/9/2015
VA	Commonwealth of Virginia	460217	12/14/2013
NH-P	New Hampshire Environmental Lab	2557 NELAP	09/6/2014



ANALYTICAL LABORATORY

Phone: 413-525-2332  
Fax: 413-525-6405  
Email: info@contestlabs.com  
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# CHAIN OF CUSTODY RECORD

39 Spruce Street  
East Longmeadow, MA 01028

Page 1 of 1

Rev 04.05.12

Company Name: Woodmen 3 Lumber

Telephone:

Address: 40 Shattuck Rd Site 110 Andover, MA

Project # 225645

Client PO#

Attention: J Hanel, C Franklin, E Leonard

DATA DELIVERY (check all that apply)  
☐ FAX ☐ EMAIL ☐ WEBSITE

Project Location: WMASS CT WMAID

Fax #

Sampled By: Kim Bernard

Email:

Project Proposal Provided? (for billing purposes)  
☐ yes ☐ no proposal date

Format:  
☐ PDF ☐ EXCEL ☐ GIS  
☐ OTHER

☐ "Enhanced Data Package"

Con-Test Lab ID

Client Sample ID / Description

Beginning Date/Time

Ending Date/Time

Composite

Grab

\*Matrix

Blank

Ends

10/30/13

10/15

01

15M-5WC-VWC-046

10/30/13

10/15

W1

U

X

EPA 8082/3540C Soxhlet

10/30/13

10/15

W1

10/30/13

10/15

W1

U

X

EPA 8082/3540C Soxhlet

10/30/13

10/15

W1

10/15

W1

10/30/13

10/15

W1

U

X

EPA 8082/3540C Soxhlet

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X

EPA 8082/3540C Soxhlet

10/30/13

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W1

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W1

10/30/13

10/15

W1

U

X

EPA 8082/3540C Soxhlet

10/30/13

10/15

W1

10/15

W1

Comments: ① EPA 8082 PCBs/3540C Soxhlet ② RLC log/wipe

③ Epoxy / Pet Wall / Bulk Phase ④ 5 DAY TR

Relinquished by (signature) 10/30/13 1330

Received by (signature) 10/30/13 1330

Relinquished by (signature) 10/30/13 17:00

Received by (signature) 10/30/13 3:20 10/30/13 1720

TURNAROUND TIME STARTS AT 9:00 A.M. THE DAY AFTER SAMPLE RECEIPT UNLESS THERE ARE QUESTIONS ON YOUR CHAIN. IF THIS FORM IS NOT FILLED OUT COMPLETELY OR IS INCORRECT, TURNAROUND TIME WILL NOT START UNTIL ALL QUESTIONS ARE ANSWERED BY OUR CLIENT.

PLEASE BE CAREFUL NOT TO CONTAMINATE THIS DOCUMENT

Detection Limit Requirements

Massachusetts:

Connecticut:

Other:

RLC log/wipe

Is your project MCP or RCP?

☐ MCP Form Required

☐ RCP Form Required

☐ MA State DW Form Required

☐ PWSD #

Accredited

Accredited

Accredited

Accredited

Accredited

ANALYSIS REQUESTED

Field Filtered

Lab to Filter

Dissolved Metals

Field Filtered

Lab to Filter

Dissolved Metals

Field Filtered

Lab to Filter

Dissolved Metals

Field Filtered

Lab to Filter

Dissolved Metals

Field Filtered

Lab to Filter

Dissolved Metals

Field Filtered

Lab to Filter

Dissolved Metals

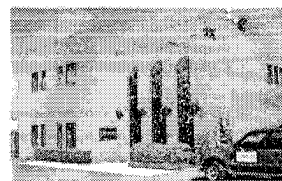
Field Filtered

Lab to Filter

39 Spruce St.  
East Longmeadow, MA. 01028  
P: 413-525-2332  
F: 413-525-6405  
www.contestlabs.com



Page 1 of 2



## Sample Receipt Checklist

CLIENT NAME: Woodard & Curran RECEIVED BY: KOB DATE: 10-30-13

1) Was the chain(s) of custody relinquished and signed? Yes No No CoC Included

2) Does the chain agree with the samples? Yes No

If not, explain:

3) Are all the samples in good condition? Yes No

If not, explain:

4) How were the samples received:

On Ice ☒ Direct from Sampling ☐ Ambient ☐ In Cooler(s) ☒

Were the samples received in Temperature Compliance of (2-6°C)? Yes No N/A

Temperature °C by Temp blank \_\_\_\_\_ Temperature °C by Temp gun 3.2°C

5) Are there Dissolved samples for the lab to filter? Yes No

Who was notified \_\_\_\_\_ Date \_\_\_\_\_ Time \_\_\_\_\_

6) Are there any RUSH or SHORT HOLDING TIME samples? Yes No

Who was notified \_\_\_\_\_ Date \_\_\_\_\_ Time \_\_\_\_\_

7) Location where samples are stored:

19

Permission to subcontract samples? Yes No  
(Walk-in clients only) if not already approved  
Client Signature: \_\_\_\_\_

8) Do all samples have the proper Acid pH: Yes No N/A

9) Do all samples have the proper Base pH: Yes No N/A

10) Was the PC notified of any discrepancies with the CoC vs the samples: Yes No N/A

### Containers received at Con-Test

	# of containers		# of containers
1 Liter Amber		8 oz amber/clear jar	
500 mL Amber		4 oz amber <u>clear jar</u>	<u>1</u>
250 mL Amber (8oz amber)		2 oz amber/clear jar	
1 Liter Plastic		Plastic Bag / Ziploc	
500 mL Plastic		SOC Kit	
250 mL plastic		Non-ConTest Container	
40 mL Vial - type listed below		Perchlorate Kit	
Colisure / bacteria bottle		Flashpoint bottle	
Dissolved Oxygen bottle		Other glass jar	
Encore		Other	

Laboratory Comments:

40 mL vials: # HCl \_\_\_\_\_ # Methanol \_\_\_\_\_  
# Bisulfate \_\_\_\_\_ # DI Water \_\_\_\_\_  
# Thiosulfate \_\_\_\_\_ Unpreserved \_\_\_\_\_

Time and Date Frozen: \_\_\_\_\_

Doc# 277

Rev. 4 August 2013

**Login Sample Receipt Checklist****(Rejection Criteria Listing - Using Sample Acceptance Policy)****Any False statement will be brought to the attention of Client**

Question	Answer (True/False)	Comment
	T/F/NA	
1) The cooler's custody seal, if present, is intact.	NA	
2) The cooler or samples do not appear to have been compromised or tampered with.	T	
3) Samples were received on ice.	T	
4) Cooler Temperature is acceptable.	T	
5) Cooler Temperature is recorded.	T	
6) COC is filled out in ink and legible.	T	
7) COC is filled out with all pertinent information.	T	
8) Field Sampler's name present on COC.	T	
9) There are no discrepancies between the sample IDs on the container and the COC.	T	
10) Samples are received within Holding Time.	T	
11) Sample containers have legible labels.	T	
12) Containers are not broken or leaking.	T	
13) Air Cassettes are not broken/open.	NA	
14) Sample collection date/times are provided.	T	
15) Appropriate sample containers are used.	T	
16) Proper collection media used.	T	
17) No headspace sample bottles are completely filled.	T	
18) There is sufficient volume for all requested analyses, including any requested MS/MSDs.	T	
19) Trip blanks provided if applicable.	NA	
20) VOA sample vials do not have head space or bubble is <6mm (1/4") in diameter.	NA	
21) Samples do not require splitting or compositing.	T	

**Who notified of False statements?****Date/Time:****Doc #277 Rev. 4 August 2013****Log-In Technician Initials:** KOB**Date/Time:** 10-30-13 1720

## UMASS DUBOIS LIBRARY - PROJECT SUMMARY

ConTest Analytical Laboratory Job Number: 13D0272

A modified Tier II validation was performed on the data. The criteria detailed below were used to qualify the data. Raw data were not used to verify the results reported by the laboratory.

Samples were received at 5.3 degrees Celsius. No qualifications will be applied.

### PCB Homologs:

All polychlorinated biphenyl compound (PCB) homolog samples were extracted and analyzed within technical holding times. No qualifications will be applied.

All PCB homolog surrogates met acceptance criteria. No qualifications will be applied.

The PCB homolog method blank was non-detect (ND) for all target analytes. No qualifications will be applied.

No PCB homolog field blank samples were submitted with this analytical package. No qualifications will be applied.

No PCB homolog matrix spike/matrix spike duplicate (MS/MSD) was performed since these were air samples. No qualifications will be applied.

The PCB homolog laboratory control sample/laboratory control sample duplicate (LCS/LCSD) met acceptance criteria. No qualifications will be applied.

PCB homolog field duplicate samples DL-4E-IAS-124 (13D0272-01)/DL-4ED-IAS-133 (13D0272-10) met acceptance criteria. No qualifications will be applied.

Data Check, Inc.  
P.O. Box 29  
81 Meaderboro Road  
New Durham, NH 03855

Gloria J. Switalski:  
President



Date:

4/25/13

**UMASS DUBOIS LIBRARY – OCTOBER 2013 INDOOR AIR SAMPLING EVENT  
PROJECT SUMMARY**

**Con-Test Analytical Laboratory Job Number: 13J0483**

**A modified Tier II validation was performed on the data. The criteria detailed below were used to qualify the data. Raw data were not used to verify the results reported by the laboratory.**

Samples were received at 2.8 degrees Celsius. No qualifications will be applied.

**PCBs:**

All polychlorinated biphenyl (PCB) homolog samples were extracted and analyzed within technical holding times. No qualifications will be applied.

All PCB homolog surrogates met acceptance criteria. No qualifications will be applied.

The PCB homolog method blank was non-detect (ND) for all target analytes. No qualifications will be applied.

No PCB homolog field blank samples were submitted with this analytical package. No qualifications will be applied.

No PCB homolog matrix spike/matrix spike duplicate (MS/MSD) was performed on a sample from this analytical package since these were air samples. No qualifications will be applied.

The PCB homolog laboratory control sample/laboratory control sample duplicate (LCS/LCSD) met acceptance criteria. No qualifications will be applied.

PCB homolog field duplicate samples DL-4E-IAS-135 (13J0483-01)/DL-4ED-IAS-143 (13J0483-09) met relative percent difference (RPD) acceptance criteria ( $\leq 50\%$ ) with the exceptions of hexachlorobiphenyls (53%) and heptachlorobiphenyls (61%). Therefore, hexachlorobiphenyls and heptachlorobiphenyls results in samples DL-4E-IAS-135 (13J0483-01) and DL-4ED-IAS-143 (13J0483-09) are qualified as estimated (J) due to high field duplicate RPD.

Data Check, Inc.  
P.O. Box 29  
81 Meaderboro Road  
New Durham, NH 03855

Gloria J. Switalski:  
President



Date: 10/19/2013



**UMASS LTMM - 2013 MONITORING  
PROJECT SUMMARY**

**ConTest Analytical Laboratory Job Numbers: 13I0083, 13J0566, 13J0568, & 13J1203**

A modified Tier II validation was performed on the data. The criteria detailed below were used to qualify the data. Raw data were not used to verify the results reported by the laboratory.

Samples were received at 2.0, 3.2, 4.1, and 4.2 degrees Celsius. No qualifications will be applied.

**PCBs:**

All polychlorinated biphenyl compound (PCB) samples were extracted and analyzed within technical holding times. No qualifications will be applied.

All PCB surrogates met acceptance criteria. No qualifications will be applied.

The PCB method blanks were non-detect (ND) for all target analytes. No qualifications will be applied.

No PCB field blank samples were submitted with these analytical packages. No qualifications will be applied.

No PCB matrix spike/matrix spike duplicate (MS/MSD) was performed on a sample from these analytical packages since these are wipe samples. No qualifications will be applied.

The PCB laboratory control samples (LCS) and/or laboratory control sample duplicates (LCSD) met recovery and relative percent difference (RPD) ( $\leq 30\%$ ) met acceptance criteria with the following exceptions:

LCS/LCSD ID	PCB-1016 RPD	PCB-1260 RPD	IMPACTED SAMPLES	QUALIFIER
B082986- BS1/BSD1	36.9/35.7	34.8/35.3	LTM-SWC-VWC-045	None, LCS/LCSD recoveries acceptable and sample ND

PCB field duplicate samples LTM-SWC-VWC-033 (13J0566-09)/LTM-SWC-VWCD-034 (13J0566-10) met acceptance criteria. No qualifications will be applied.

The RPD between the column results for all detected PCBs met acceptance criteria. No qualifications will be applied.

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New Durham, NH 03855

Gloria J. Switalski:  
President



Date:

12/19/2013