

Via Electronic Mail

December 22, 2022



Ms. Katherine A. Woodward, PE, PhD  
U.S. Environmental Protection Agency Region 1  
5 Post Office Square – Suite 100  
Boston, Massachusetts 02109-3912

Re: Long-Term Monitoring and Maintenance of PCB Encapsulated Surfaces  
2022 Monitoring Results  
University of Massachusetts, Amherst, Massachusetts

Dear Ms. Woodward:

On behalf of the University of Massachusetts, this report has been prepared and is being submitted to document the results from the 2022 long term monitoring activities of PCB encapsulated surfaces conducted at the following buildings on the University of Massachusetts Amherst Campus:

- 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 dated February 28, 2012; modifications were made to the long-term monitoring requirements following the 2015 event and communications with EPA to include annual visual inspections and biennial wipe testing of encapsulated surfaces.
- 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 dated August 30, 2010; monitoring activities were also conducted at those areas described in the PCB Remediation Plan Amendment dated May 9, 2011 and along the east side of the Patterson and MacKimmie Houses as described in the PCB Remediation Plan dated May 15, 2017; following the 2015 monitoring event and communications with EPA, modifications were made to the long-term monitoring requirements to include visual inspections on an annual basis and wipe testing of encapsulated surfaces on a biennial basis.
- 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 dated April 8, 2010; following the 2015 monitoring event and communications with EPA, modifications to the long-term monitoring were made to include visual inspections and indoor air sampling on an annual basis and wipe testing of encapsulated surfaces on a biennial basis.
- Orchard Hill Complex:
  - Webster House – The MMIP was submitted on January 5, 2012 in accordance with Condition 16 of the EPA's PCB Decontamination and Disposal Approval dated July 4, 2011; following completion of the 2015 monitoring event and communications with EPA, the long-term monitoring program was modified to include annual visual



inspections and biennial wipe testing of encapsulated surfaces. Post-abatement indoor air sampling to confirm site conditions was also conducted in 2016.

- Field and Grayson Houses – The MMIP was submitted on January 13, 2014 in accordance with Condition 17 of the EPA's April 30, 2012 PCB Decontamination and Disposal Approval for the window/door replacement project; monitoring activities were also conducted in accordance with the MMIP for the work completed on the exterior joints submitted on April 24, 2012 as part of the PCB Remediation Plan/Close Out Document for Field and Grayson House; following completion of the 2015 monitoring event and communications with EPA, the long-term monitoring program was modified to include annual visual inspections and biennial wipe testing of encapsulated surfaces. Post-abatement indoor air sampling to confirm site conditions was also conducted in 2016.
- Sylvan Complex – The MMIP was submitted on February 20, 2014 as part of the remediation completion reporting for the exterior and interior renovations conducted at each of the three buildings within the Sylvan Complex (Brown, Cashin, and McNamara). Annual post-remediation monitoring has been conducted in accordance with the MMIP and additional communications with EPA since 2014. Following completion of the 2017 monitoring event, the long-term monitoring program was modified to include visual inspections and wipe testing of encapsulated surfaces on a biennial basis. In addition, indoor air monitoring is being conducted in interior areas where residual PCBs were encapsulated. On June 4, 2019, EPA issued the PCB Decontamination and Disposal Approval for the Sylvan Complex which included continued long-term monitoring of encapsulated surfaces.
- Physical Plant Second Floor – The MMIP was submitted on December 16, 2013 in accordance with Condition 15 of EPA's October 19, 2012 PCB Decontamination and Disposal Approval for the replacement of windows in Room 230A within the Physical Plant building. Long-term monitoring activities include visual inspections to be conducted on an annual basis.

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. The locations of these areas are depicted on Figure 1.

An overall summary of the 2022 activities is provided below 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 and concrete surfaces in former direct contact with the caulking as well as a limited extent of masonry and concrete 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 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 using a hexane-soaked wipe following the standard wipe test procedures described in 40 CFR 761.123.
- Indoor air monitoring 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)".
- Evaluation of monitoring results to determine the need and type of corrective actions and/or continued monitoring.
- A monitoring report to document the results of the visual inspections and sampling activities, as well as to provide 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 –2022**

Woodard & Curran performed the following monitoring activities between July and September 2022:

- Visual inspections of encapsulated surfaces were conducted at each of the six areas identified for long-term monitoring;
- Surface wipe sampling of encapsulated surfaces was conducted on the encapsulated surfaces at the Sylvan Complex;
- Indoor air samples were collected from the elevator lobbies of the Dubois Library and the Sylvan Complex.

## **RESULTS**

A summary of the results of the 2022 monitoring activities for each building is included in Attachments 1 through 6 to this letter. Complete analytical laboratory reports, along with data validation summaries, are provided in Attachment 7.

The 2022 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 and concrete. Based on information provided by UMass, no work or maintenance activities were conducted in the subject areas.

The results of the 2022 monitoring event were consistent with previous sampling events and the baseline monitoring results for the respective areas and materials. In accordance with the MMIP, locations represented by wipe samples reporting PCBs above the project action level of 1 ug/100cm<sup>2</sup> will be designated for follow-up wipe sampling during the next sampling event.

The results from the indoor air sampling at the Dubois Library remain well below the site-specific exposure level and consistent with the results from the previous sampling events.



Analytical results from indoor air sampling at the Sylvan Complex reported PCBs below the calculated site-specific exposure levels for the various spaces with the exception of the sample collected from the Cashin Service Desk area. However, the results from that sample remain consistent with previous sampling results in this area and results from the sample collected in February indicate the September results are not representative of conditions throughout the year.

### **Corrective Measures**

Based on the results of the annual monitoring, no corrective measures are proposed to be conducted. However, as reported in previous annual reports, UMass continues to evaluate the application of secondary barrier systems over those vertical control joints considered to be in the high occupancy area as defined specific to this project (< 8' 8" above ground surface) at the McNamara building. At this time, the final product has not been determined however, it is anticipated that it will a pre-formed silicone barrier material or similar barrier material designed to span the control joint.

### **Continued Monitoring**

It is proposed to continue the campus wide long-term monitoring as per the applicable MMIPs for each area to include annual visual inspections and indoor air sampling (where applicable) and biennial surface wipe sampling. As described above, locations represented by wipe samples reporting PCBs above the project action level of 1 ug/100cm<sup>2</sup> will be designated for follow-up wipe sampling during the next sampling event

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.

A handwritten signature in blue ink, appearing to read "George J. Franklin".

George J. Franklin, CHMM  
Project Manager

A handwritten signature in blue ink, appearing to read "Jeffrey A. Hamel".

Jeffrey A. Hamel, LSP, LEP  
Senior Principal

Attachments: Figure 1 – Site Location Map  
Attachment 1 – Tobin Hall Deck  
Attachment 2 – Southwest Concourse  
Attachment 3 – Dubois Library Elevator Lobbies  
Attachment 4 – Orchard Hill Residential Complex  
Attachment 5 – Sylvan Residential Complex  
Attachment 6 – Physical Plant  
Attachment 7 – Analytical Laboratory Reports

cc: Terri Wolejko, UMass EH&S



**FIGURE 1 – SITE LOCATION MAP**



# University of Massachusetts Amherst Campus Map

July 2011

University Switchboard - (413) 545-0111

Tour Service - (413) 545-4237

Robsham Memorial Visitors Center - (413) 545-0306

## Map Key

- 31 Numbered Parking Lots
- P Metered/Public Parking
- ▲ PVTA Bus Stops
- ✕ Traffic Lights

Figure 1 Site Location Map

## ATTACHMENT 1 – TOBIN HALL DECK





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

**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 > 1 parts per million (ppm) remain beneath a liquid encapsulating coating (residual PCB concentration in concrete 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 l.f. 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 1-1. In 2013, as part of the Commonwealth Honors College construction project, a four-foot-high retaining wall was installed over the majority of the encapsulated surfaces. As a result, the remaining exposed encapsulated concrete surface is 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).

Photos depicting the encapsulated surfaces are presented below.





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



Baseline Verification Data Summary      **Northern Side of Stair Landing**      Wipe samples were collected in August 2011 from the building wall 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 the United States Environmental Protection Agency (EPA) in March 2012 and modified following the 2015 monitoring event and subsequent email communications with EPA. Beginning with the 2016 monitoring event, long term monitoring includes annual visual inspections and biennial wipe sampling of the accessible encapsulated surfaces (one from the northern portion of the wall and one from the southern portion of the wall). 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.

### **Monitoring Activities – Previous Events**

Between 2012 and 2021 annual visual inspections of encapsulated surfaces indicated that the coatings on accessible portions of the encapsulated surfaces remained in good physical condition with the exception of a small, isolated area of epoxy coating deterioration directly adjacent to a hose connection on the northern retaining wall (the area was subsequently covered in 2013 with the installation of a four foot high retaining wall) and some flaking and peeling of the Sikagard 670W clear coating applied to a limited portion of the concrete on the northern retaining wall. Based on the observed flaking and peeling, in 2017 UMass applied two coats of Sikagard 62 epoxy coating to the accessible portion of the northern retaining wall where the clear coating had been observed to be flaking and peeling during previous events. In 2021, a small area of flaking was observed on the epoxy on the east side of the southern column.

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

Wipe samples collected from encapsulated surfaces through the 2021 monitoring event indicated that PCBs were non-detect ( $< 0.20 \mu\text{g}/100\text{cm}^2$ ).

**Monitoring Activities – August 2022**

Results of visual inspections indicated that the epoxy coatings on accessible portions of the retaining walls were in good physical condition with the exception of an area of flaking epoxy on the east side of the southern column consistent with what was observed during the 2021 monitoring.

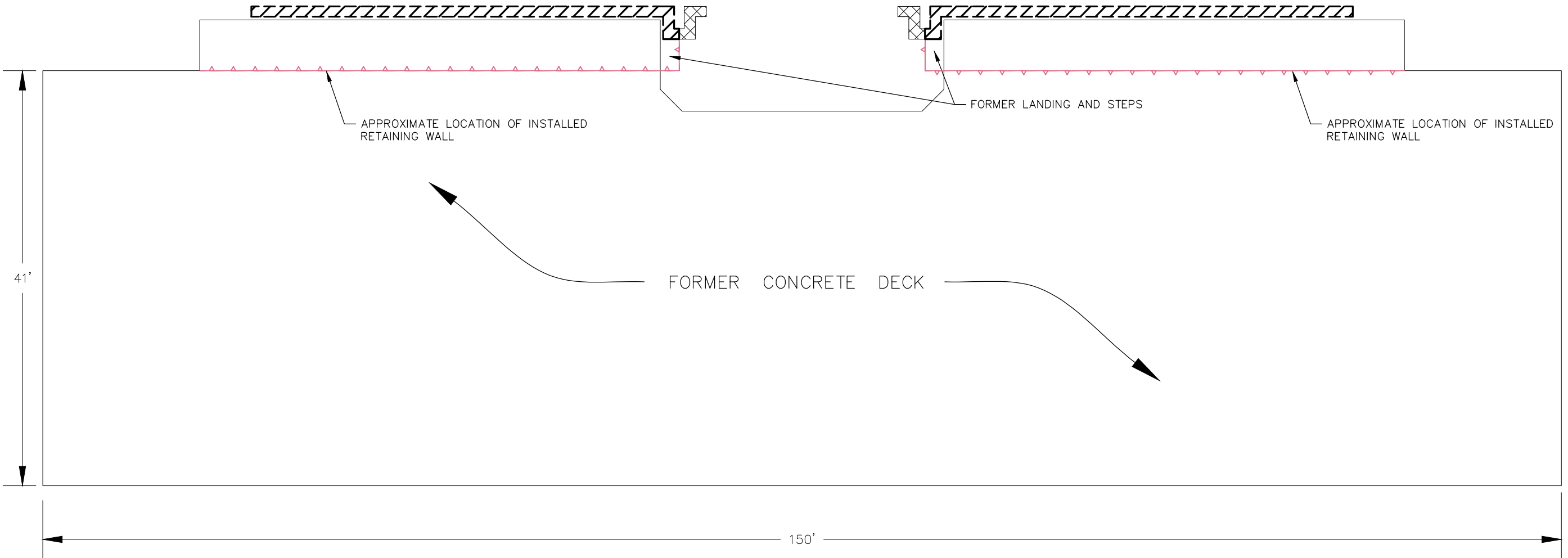
**Next Monitoring Event**

The next monitoring event is scheduled for July 2023 to include annual visual inspections and wipe sampling. The inspections will include an evaluation of the extent of flaking coating on the southern column to confirm it is not progressing. Additional coating will be applied by UMass personnel as part of routine maintenance activities at a to be determined date.

\\woodardcurran.net\shared\Projects\225695 UMass Amherst - Long Term Monitoring\w\Drawings\2016\225996-ltm-tobin-Figure 1-REV1.dwg



# TOBIN HALL



## 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.



BAR SCALE  
3/32" = 1'-0"  
CHECK GRAPHIC SCALE BEFORE USING

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## ENCAPSULATED BUILDING SURFACES

UNIVERSITY OF MASSACHUSETTS  
AMHERST, MASSACHUSETTS

## 2022 LONG TERM MONITORING REPORT

JOB NO: 225695  
DATE: DECEMBER 2016  
SCALE: AS NOTED

FIGURE 1

DESIGNED BY: GJF  
DRAWN BY: PF  
CHECKED BY: JAH  
225996-LTM-TOBIN-FIGURE\*.dwg

COMMITMENT & INTEGRITY DRIVE RESULTS

## ATTACHMENT 2 – SOUTHWEST CONCOURSE



**Attachment 2 – 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, MacKimmie House/Stonewall Center, and Patterson House

**Summary of Remedial Areas**

*In-Place Management:* Residual PCBs at concentrations > 1 part per million (ppm) on exterior building walls and retaining walls are being managed in place 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 concrete was 292 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; and
  - 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 (maximum residual PCB concentration in masonry was 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 topcoat of a white elastomeric acrylic coating was applied to the entire tunnel ceiling.

The locations of the encapsulated surfaces are depicted on Figure 2-1 and typical applications are shown in the photos below.

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



**Typical Retaining Wall Application**



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

*Baseline Verification Data Summary:* Initial baseline wipe samples were collected in July and August 2010 (majority of the Southwest Concourse Area), in July and August 2011 (areas included in the PCB Remediation Plan Amendment), and in June 2017 (Patterson and MacKimmie Houses). A summary of analytical results from the baseline sampling is as follows:

- Sikagard 62 Epoxy Encapsulated Surfaces – 69 of 71 samples were 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 coating).
- 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/August 2011 and June 2017) – 6 of 7 samples collected at grade (both epoxy and clear coated surfaces) were 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 the United States Environmental Protection Agency (EPA) in December 2010 with a final response to comments on the plan submitted in January 2011. Revisions to the plan were implemented following the 2015 monitoring event and subsequent communications with EPA. The MMIP includes visual inspections of encapsulated surfaces on an annual basis with wipe sampling conducted on a bi-annual basis. A summary of the inspection and monitoring requirements is provided below.



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

Long term monitoring 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 on a biennial basis 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 69 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 are being conducted similar to the planned above grade areas (eight wipe samples); 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.

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

**Previous Monitoring Activities – 2012 through 2021**

Results of the monitoring were presented to EPA in the annual monitoring reports and are summarized below.

Visual Inspection: Results of the visual inspections found no evidence of significant peeling, breakage, or brittleness of the epoxy coating; however, isolated areas of damage were observed and repaired as needed overtime. The visual inspections of the Sikagard 670W clear acrylic coating identified areas of flaking and peeling across the concourse typically isolated to areas 4 to 6 inches in size. The areas of flaking and peeling remained relatively consistent between sampling events indicating that the issues may have been present at the time of application and not indicative of long-term wear of the coatings. The coatings on the ceiling of the pedestrian tunnel were observed to be in good physical condition with no observed signs of deterioration.

Wipe Samples: 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 coated surfaces in the pedestrian tunnel. Following the 2015 monitoring event, the collection of surface wipe samples was transitioned to a biennial event. A summary of the samples collected is as follows:

- Sikagard 62 Liquid Epoxy: Analytical results indicated that PCBs were either non-detect or present at concentrations  $< 1 \mu\text{g}/100 \text{ cm}^2$  during each event with the exception of samples collected from the Washington Plaza stairs where PCBs were reported at concentrations  $> 1 \mu\text{g}/100 \text{ cm}^2$  during the 2012, 2013, and 2015 monitoring events. Based on these results, an additional coating of Sikagard 62 was applied to the subject stair surfaces in 2017 and results from wipe samples collected since the additional coating have reported PCBs as either non-detect ( $< 0.20 \text{ ug}/100\text{cm}^2$ ) or  $< 1 \text{ ug}/100\text{cm}^2$ .
- Sikagard 670W: Analytical results indicated that PCBs were all non-detect ( $< 0.20 \mu\text{g}/100 \text{ cm}^2$ ) or  $< 1 \mu\text{g}/100\text{cm}^2$  in all samples collected through the 2021 event, including multiple samples collected from the areas of isolated flaking and peeling.
- Concrete Ceiling of Pedestrian Tunnel: Analytical results indicated that PCBs were non-detect ( $< 0.20 \mu\text{g}/100 \text{ cm}^2$ ) to  $0.56 \text{ ug}/100\text{cm}^2$  in samples collected from coated concrete and continue to be detected at concentrations  $> 1 \text{ ug}/100\text{cm}^2$  in samples collected from the surface of the caulked joint (with a maximum reported concentration of  $13.4 \text{ ug}/100\text{cm}^2$  in 2017).

**Monitoring Activities – 2022**

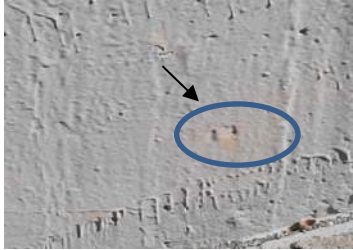
The 2022 monitoring event was conducted on July 27, 2022 and included visual inspections of the liquid coatings. A summary of the results is as follows:

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

- Sikagard 62 Epoxy: The coatings were observed to be in good physical condition. Additional isolated areas of damage were observed on retaining wall surfaces in Washington Plaza and Berkshire Plaza. On one section of a retaining wall in Hampshire

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

Plaza, the top layer of epoxy was observed to be fading with the underlying coating visible in some portions.



**Worn outer layer of epoxy (left photo) with underlying yellow coating visible and  
chipped epoxy (right photo) observed during 2022 inspections**

- Sikagard 670W Acrylic: Visual inspection of the clear acrylic coating indicated that the coating remains in good condition over much of the encapsulated surfaces with one isolated new area of observed flaking and peeling within Washington Plaza. The observed flaking and peeling were consistent with other areas described above.
- Concrete Ceiling of Pedestrian Tunnel: No access was available at the time of the monitoring event due to construction being conducted on the road above and around the pedestrian tunnel. Given that this is part of routine monitoring, no follow-up site visit was conducted for the visual inspection.
- The locations of the encapsulated surfaces and areas of observed damage or flaking and peeling are presented on Figure 2-1.

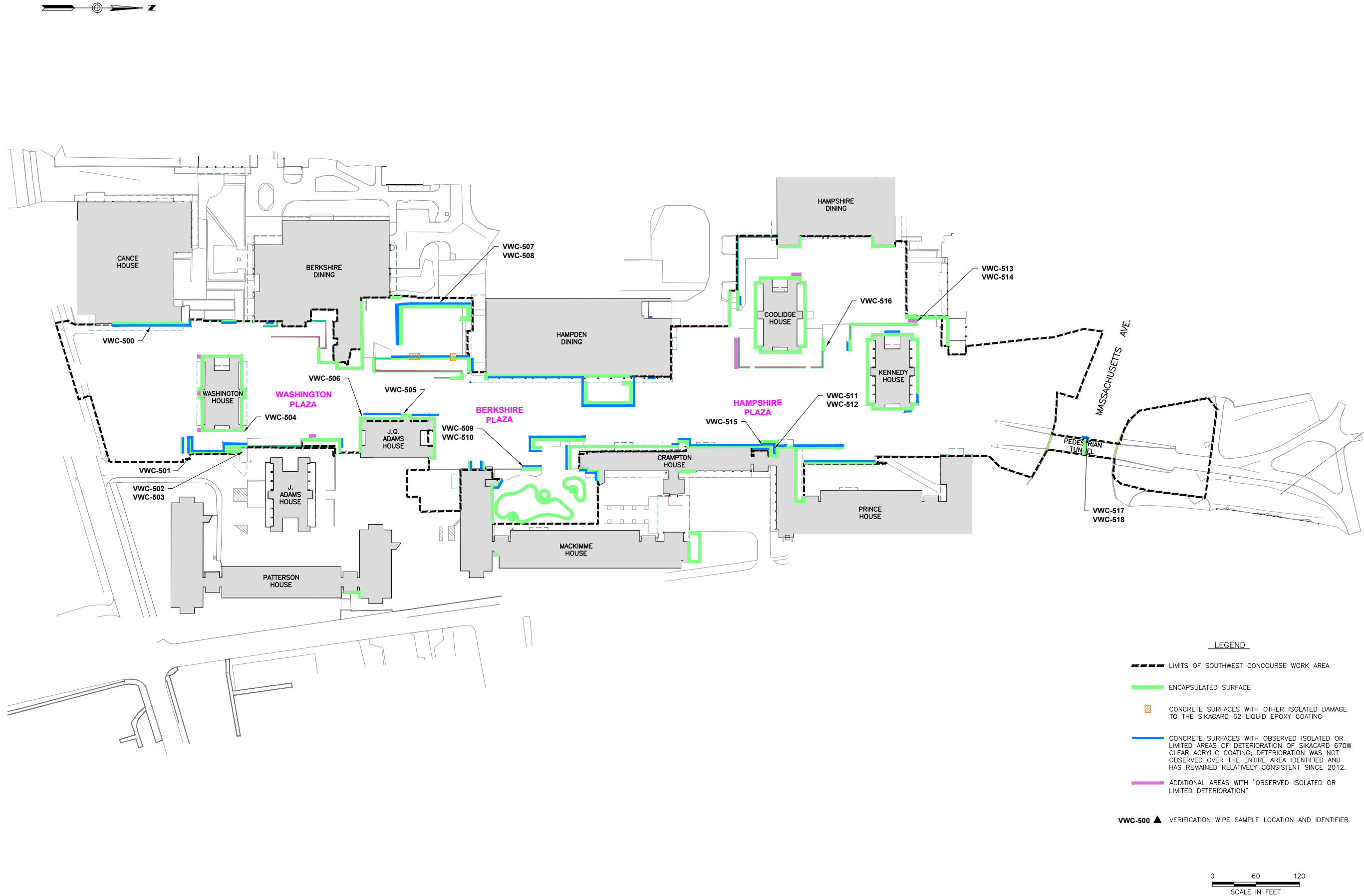
### **Conclusions/Next Steps**

Based on these results, the liquid coatings applied to concrete surfaces within the Southwest Concourse continue to be effective in encapsulating residual PCBs in masonry. Minor damage to the epoxy coating was observed in Berkshire Plaza and Hampshire Plaza. Repairs to the epoxy will continue to be made as part of routine maintenance activities within the concourse.

### **Next Monitoring Event**

The next monitoring event will be performed during the Summer of 2023 and will include visual inspections of coated surfaces and wipe sampling in accordance with the MMIP. The 2023 monitoring event will also incorporate long term maintenance and monitoring of encapsulated surfaces associated with the Notification of TSCA "Risk-Based Clean-up of PCBs" for the Hampden Dining Commons Roofing Replacement Project submitted to EPA on August 4, 2022. Remediation activities associated with that project have been completed and will be documented under a separate submittal by UMass.

\\woodardcurran.net\shared\Projects\225695 - Long Term Monitoring\wp\Drawings\2021\225695-2021-Figure-2-1.dwg, Dec 05, 2022 - 10:04am



- LEGEND**
- LIMITS OF SOUTHWEST CONCOURSE WORK AREA
  - ENCAPSULATED SURFACE
  - CONCRETE SURFACES WITH OTHER ISOLATED DAMAGE TO THE SIKAGARD 62 LIQUID EPOXY COATING
  - CONCRETE SURFACES WITH OBSERVED ISOLATED OR LIMITED AREAS OF DETEIORATION OF SIKAGARD 670W CLEAR ACRYLIC COATING; DETEIORATION WAS NOT OBSERVED OVER THE ENTIRE AREA IDENTIFIED AND HAS REMAINED RELATIVELY CONSISTENT SINCE 2012.
  - ADDITIONAL AREAS WITH "OBSERVED ISOLATED OR LIMITED DETEIORATION"
  - VWC-500 ▲ VERIFICATION WIPE SAMPLE LOCATION AND IDENTIFIER

0 60 120  
SCALE IN FEET

THIS DOCUMENT IS THE PROPERTY OF WOODARD & CURRAN, INC. AND ITS CLIENT. REPRODUCTION OR MODIFICATION WITHOUT WRITTEN PERMISSION IS PROHIBITED.

REV	DESCRIPTION	DESIGNED BY:	CHECKED BY:	DATE
		AE	GF	
		PF		

AREAS OF ENCAPSULATED SURFACES  
AND WIPE SAMPLE LOCATIONS

UNIVERSITY OF MASSACHUSETTS  
AMHERST, MASSACHUSETTS

2022 LONG TERM  
MONITORING REPORT

JOB NO.:	225695.02
DATE:	OCTOBER 2021
SCALE:	AS NOTED
SHEET:	1 OF 1

FIGURE 2-1

## ATTACHMENT 3 – DUBOIS LIBRARY ELEVATOR LOBBIES



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

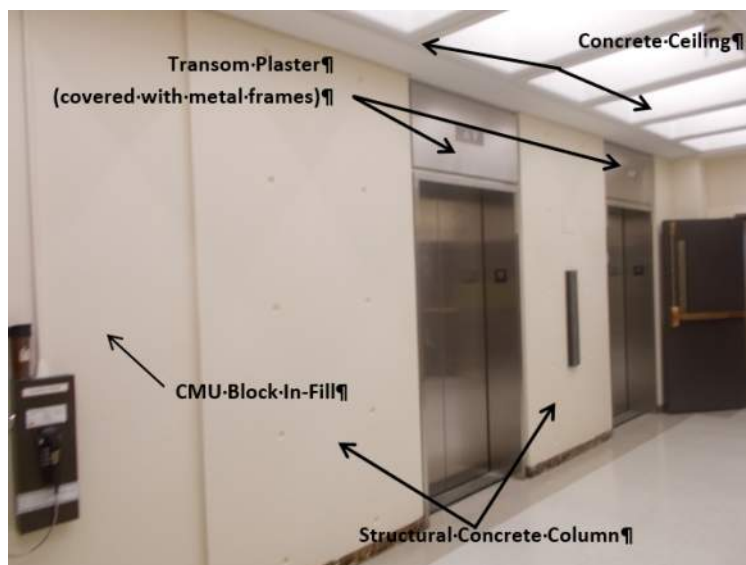
**Location:** W.E.B Dubois Library

**Summary of Remedial Areas**

*In-Place Management:* Residual PCBs at concentrations > 1 part per million (ppm) are being managed in place 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 the project specifications.
- 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.





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

Baseline Verification Wipe Data Summary: Initial baseline wipes were collected on 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  $1 \mu\text{g}/100 \text{ cm}^2$  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.

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 690, 977, and  $1,146 \text{ ng}/\text{m}^3$  in the three samples collected. These results were within below the risk-based project specific action level prepared for the transitory nature of the elevator lobby.

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

The MMIP was submitted to the United States Environmental Protection Agency (EPA) in March 2013 and included visual inspections of encapsulated surfaces, verification wipe sampling, and continued indoor air sampling. Following the 2015 monitoring event, the plan was modified to include annual visual inspections and indoor air sampling and biennial surface wipe sampling. A summary of the inspection and monitoring requirements is as follows:

Long-term Monitoring Wipe Sampling: 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 on a biennial basis from randomly selected locations as follows:

- CMU Block In-Fill Materials – Three wipe samples will be collected from encapsulated masonry block in-fills on three randomly selected floors. The location of the wipe sample

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

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 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 and location along the former joint will be randomly selected; 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 wipe sample will be collected from ceiling materials on a randomly selected floor.
- Transom Plaster – The final construction included 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: As part of the development of the Monitoring and Maintenance Implementation Plan (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.

Indoor air sampling was conducted at a minimum of twice per year from 2013 through 2015. Based on the results of indoor air monitoring through October 2015, which indicated that PCB concentrations were not dependent on seasonal variations of the ventilation system and were decreasing over time, the frequency of indoor air sampling was modified in 2016 to include one round of sampling per year. The sampling was selected to be conducted in July of each year to evaluate conditions during the summer months in periods of warmer ambient temperatures when the building ventilation dampers generally in a more closed configuration to provide less make-up air.

In 2018, a site-specific exposure level for PCBs in indoor air was calculated in accordance with EPA's "Exposure Levels for Evaluating Polychlorinated Biphenyls (PCBs) in Indoor School Air". This calculation provides a target level to maintain an overall PCB exposure below the oral reference dose of 20 ng PCB/kg body weight per day. The resulting calculation provides exposure levels that may be used to guide thoughtful evaluation of indoor air quality (per EPA guidance [*July 28, 2015 PCBs in Building Materials – Q&A*], these exposure levels should not be interpreted nor applied as "not-to-exceed criteria"; Isolated or infrequent indoor air PCB measurements that exceed the exposure levels would not signal unsafe exposure to PCBs).

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Within the elevator lobbies, it was assumed that students could be present for approximately 250 days per year with a frequency of 0.8 hours in the lobby (assuming 10 elevator trips per day and 5 minutes in the lobby per trip, for 50 minutes per day). Using EPA's PCB Exposure Estimation Tool (v1.2), a site-specific PCB indoor air exposure level was calculated using the above frequency and duration assumptions. For both school and non-school exposures, EPA PCB background concentrations for dust, soil, indoor air, and outdoor air were used. The calculated exposure level was 3,357 ng/m<sup>3</sup>.

Indoor air samples are collected from floors 4, 13, 19, and 23 to provide consistency across sampling events and to collect two samples from each of the buildings two ventilation zones. Samples are to be collected over a minimum of six hours 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 will be submitted to a certified analytical laboratory for PCB Homolog Analysis via US EPA Method 680A with a laboratory reporting limit of < 0.10 µg/m<sup>3</sup>.

### **Previous Monitoring Activities**

#### Visual Inspections and Surface Wipes

Visual inspections of the encapsulated materials conducted between 2013 and 2021 indicated that the coatings remained in good physical condition with no observed damage other than slight wearing of the outer latex paint layer. Results of verification wipe samples collected during previous events indicated that PCBs were either non-detect or present at concentrations < 1 µg/100 cm<sup>2</sup> in all samples.

#### Indoor Air

Analytical results were relatively consistent across all events with the maximum and average concentrations consistently within or slightly below the concentration range identified for continued monitoring between 2012 and 2017 (500 to 1,180 ng/m<sup>3</sup>) and below the site-specific exposure level of 3,357 ng/m<sup>3</sup> calculated following the 2018 sampling event. However, analytical results from samples collected from the 19<sup>th</sup> and 23<sup>rd</sup> floors in July 2019 were higher than results from previous sampling events. Analytical results from a follow up sample collected in September 2019 were consistent with (although slightly lower than) previous sampling events indicating that the results from July 2019 may have represented an anomalous condition for these spaces.

Indoor air samples collected in 2020 and 2021 reported average concentrations for each event slightly higher than observed prior to 2019 but with a smaller range in results. For both the 2020 and 2021 time periods, UMass reported that the library was experiencing lower student use and staffing due to the Covid-19 pandemic, particularly in 2020 when the library was closed to general use throughout the summer break. Analytical results for samples collected during the annual sampling events beginning in 2015 are presented on Table 3-1.

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**2022 Monitoring Activities**

Visual Inspections

Visual inspections of encapsulated surfaces were conducted during the annual monitoring event on July 27, 2022. Coatings were observed to be in good physical condition with no signs of wear or damage.

Indoor Air Sampling

Four indoor air samples were collected from the 4<sup>th</sup>, 13<sup>th</sup>, 19<sup>th</sup> and 23<sup>rd</sup> floors. Analytical results indicated that PCBs were reported at concentrations ranging from 596 to 907 ng/m<sup>3</sup>. Analytical results remain well below the site-specific exposure level of 3,357 ng/m<sup>3</sup> and consistent with the results from the previous sampling events. As depicted on the chart below, the range and average concentrations remain relatively consistent since 2015 (with the exception of the increased range in concentrations observed in 2019).

During the sampling event no maintenance or other activities were observed, and the ventilation system was reported to be operating under normal conditions by UMass personnel. According to UMass representatives, the Dubois Library continues to not be utilized to the levels experienced prior to the Covid-19 pandemic with less students and workers in the building.

The complete analytical results are included in Attachment 7. A summary of the analytical results from the 2022 event is included on Table 3-1 with results from previous sampling. These results are also presented on the box plot chart included as Attachment 3-1.

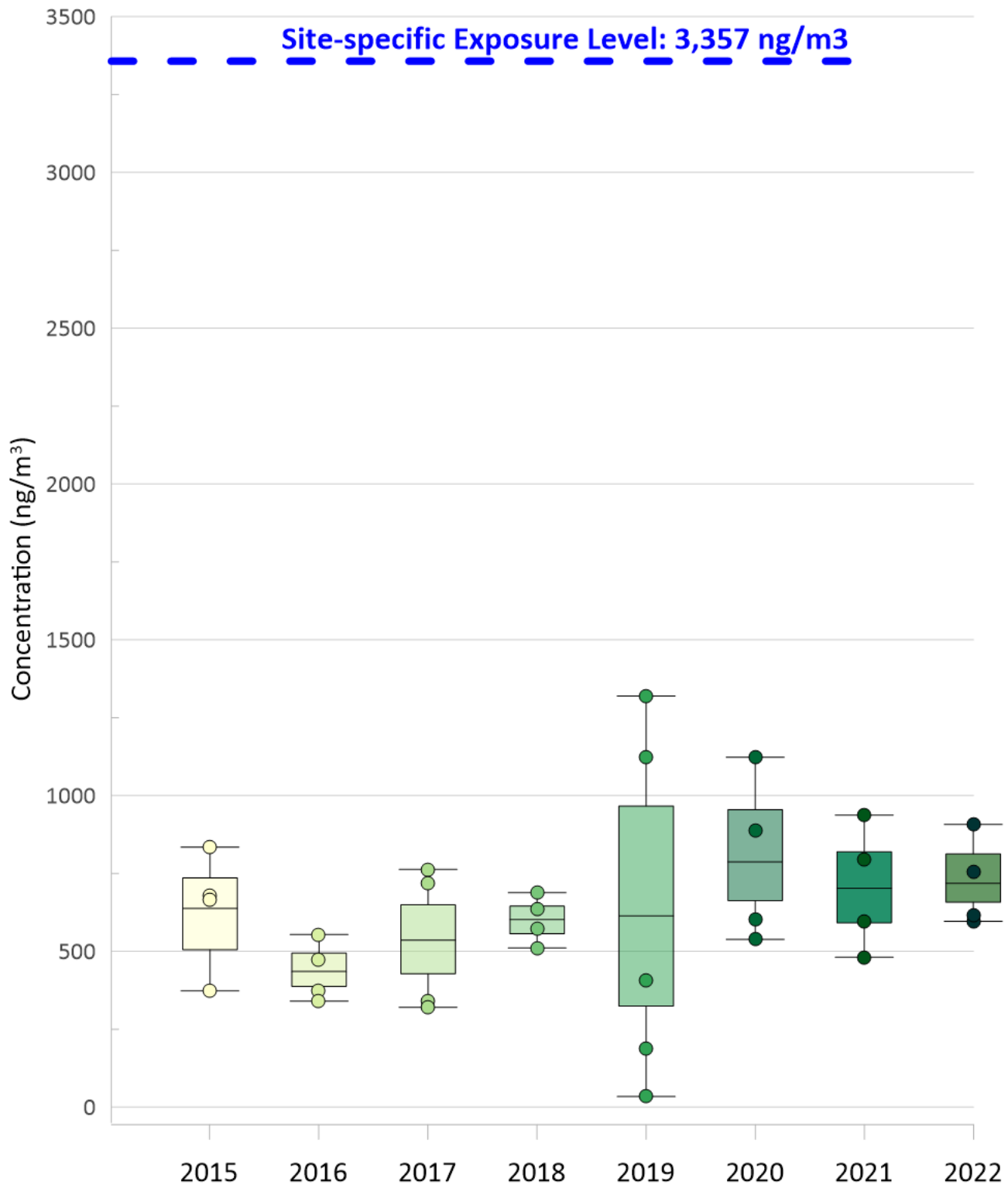
**Corrective Actions**

Based on the 2022 monitoring activities, no corrective actions are proposed at this time.

**Next Monitoring Event**

The next monitoring event is scheduled for July 2023 to include visual inspections, surface wipe sampling, and indoor air sampling.

# Attachment 3-1 Indoor Air Sampling Results 2015 - 2022



## Sample Date

- |             |                     |
|-------------|---------------------|
| July 2015   | July/September 2019 |
| August 2016 | July 2020           |
| July 2017   | July 2021           |
| July 2018   | July 2022           |

## Notes:

1. The line in the center of each box plot represents the average concentration calculated from all the results in the sampling event.
2. The dots on each box plot represent the individual sample results from that sampling event.
3. The upper and lower limits of each box plot represents one standard error above and below the average concentration for the sampling event.

## **ATTACHMENT 4 – ORCHARD HILL RESIDENTIAL COMPLEX**





**Attachment 4 – Orchard Hill Area  
Long-Term Maintenance and Monitoring Program  
In-Place Management of PCB Impacted Materials  
UMass Amherst**


**Location:** Orchard Hill Residential Area

**Building:** Webster, Field, and Grayson Houses

**Summary of Remedial Areas**

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

**Field and Grayson Houses**

- Exterior Parapet Masonry Joints (2010): Following replacement of caulking along masonry joints at the upper parapet walls of 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 (see the photograph to the right).
- 
- Locations of Typical Parapet Masonry Joints
- Elevator Hall CMU Block Walls (2012 and 2013): PCBs are being managed in place at > 1 ppm at the 6<sup>th</sup> floor elevator lobby of both Field and Grayson Houses following the removal of caulked joints around Type D windows (see Figure 4-1).
    - CMU block materials formerly in direct contact with the caulked joint (i.e., header surfaces) are encapsulated with two coats of Sikagard 62 epoxy coating and the replacement window frames/sheet metal flashing; and
    - CMU block materials above the upper horizontal joints to the first 90-degree angle (i.e., to the ceiling at a distance of approximately 15 inches) are encapsulated with two coats of Sikagard 550W elastomeric acrylic coating. (Note: Sikagard 550W was applied to the CMU block walls of all elevator lobbies as part of the renovation project).
  - Concrete Spandrel Beams (2012 and 2013): Exterior concrete spandrel beam materials on the north and south elevations (located in line with the Elevator Hall Windows) formerly in direct contact with the concrete expansion joint caulking and to a distance of three inches in either direction have been encapsulated using two coats of Sikagard 62 epoxy coating (see Figure 4-1).
  - Grayson House Exterior Narrow Stairwell Window Jambs (2012): Brick materials on the jambs of the northern stairwell west elevation narrow stairwell windows on the sixth and seventh floors formerly in direct contact with the exterior perimeter window caulking and to the end of the window recess (the first 90-degree angle) have been encapsulated using

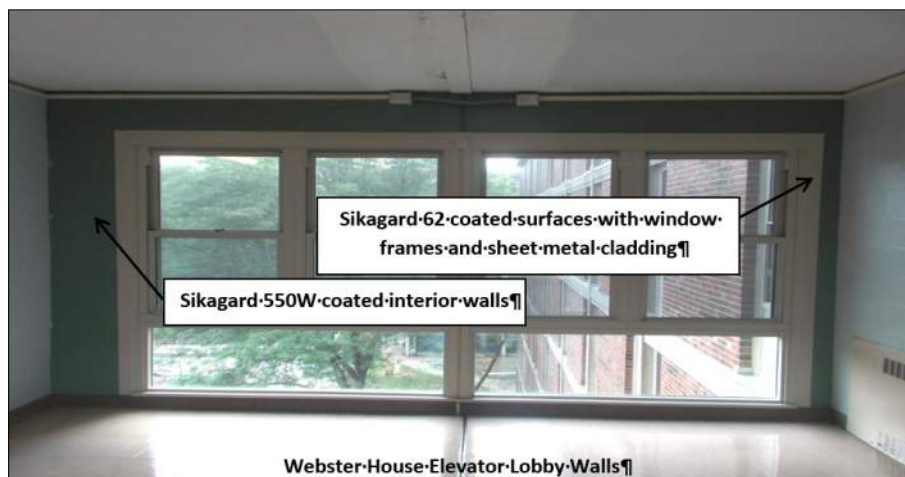
**Attachment 4 – Orchard Hill Area**  
**Long-Term Maintenance and Monitoring Program**  
**In-Place Management of PCB Impacted Materials**  
**UMass Amherst**

two coats of Sikagard 62 epoxy coating and the replacement window frames/sheet metal flashing (see Figure 4-1).

- Grayson House Interior Stairwell Concrete Sills (2012): Concrete window sill and header materials at the northern stairwell landings from the second through seventh floors formerly in direct contact with the interior perimeter window caulking and to the first 90-degree angle (approximately two inches) have been encapsulated using two coats of Sikagard 62 epoxy coating and the replacement window frames (see Figure 4-1).
- Field House Interior Stairwell Brick Jambs (2012): Brick window jamb materials at the southern stairwell landings from the second floor through seventh floors formerly in direct contact with the interior perimeter window caulking and to a distance of two inches (i.e., the extent of the replacement window frames) have been encapsulated using two coats of Sikagard 62 epoxy coating and the replacement window frames (see Figure 4-1).

**Webster House**

- Elevator Lobby Interior Walls – 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 (see photograph below).



- Northwest Elevation Exterior Concrete Ceiling – 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 (see Figure 4-2).

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**In-Place Management of PCB Impacted Materials**  
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Baseline Verification Data Summary: A summary of the initial wipe sampling results for the encapsulated areas is presented below.

**Field and Grayson Houses**

- Exterior Parapet Masonry Joints: Initial wipe samples of the exterior joints 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 µg/100cm<sup>2</sup>) or < 1 µg/100cm<sup>2</sup> (2 samples with total PCBs reported at concentrations of 0.44 and 0.90 µg/100cm<sup>2</sup>).
- Elevator Hall CMU Block Walls:
  - Sikagard 62 Epoxy Coated Materials – In July 2012, prior to installation of the window frames and sheet metal cladding, one verification wipe sample was collected from the encapsulated surfaces. Analytical results reported PCBs as non-detect (< 0.20 µg/100cm<sup>2</sup>).
  - Sikagard 550W Elastomeric Coated Materials – In August 2012, one verification wipe sample was collected from encapsulated materials above the 6<sup>th</sup> floor elevator hall windows. Analytical results indicated that PCBs were non-detect (< 0.20 µg/100cm<sup>2</sup>).
- Concrete Spandrel Beams – Following application of the liquid coatings in August 2012 and July 2013, four verification wipe samples were collected from encapsulated surfaces of the concrete spandrel beams. Analytical results reported PCBs as non-detect (< 0.20 µg/100 cm<sup>2</sup>) in the four samples.
- Grayson House Exterior Narrow Stairwell Window Jambs – In July 2013, prior to installation of the window frames, one verification wipe sample was collected from the encapsulated surfaces. Analytical results reported PCBs as non-detect (< 0.20 µg/100cm<sup>2</sup>).
- Grayson House Interior Stairwell Concrete Sills - In July 2012, prior to installation of the window frames, one verification wipe sample was collected from the encapsulated surfaces. Analytical results reported PCBs as non-detect (< 0.20 µg/100cm<sup>2</sup>).
- Field House Interior Stairwell Brick Jambs - In July 2012, prior to installation of the window frames, one verification wipe sample was collected from the encapsulated surfaces. Analytical results reported PCBs as non-detect (< 0.20 µg/100cm<sup>2</sup>).

**Webster House**

- 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

**Attachment 4 – Orchard Hill Area**  
**Long-Term Maintenance and Monitoring Program**  
**In-Place Management of PCB Impacted Materials**  
**UMass Amherst**

encapsulated surfaces. Analytical results reported PCBs as non-detect ( $< 0.20 \mu\text{g}/100 \text{ cm}^2$ ) in the six samples collected.

- Sikagard 550W Elastomeric Coated Materials – Six initial baseline wipe samples were collected in November 2011. Analytical results reported PCBs as non-detect ( $< 0.20 \mu\text{g}/100 \text{ cm}^2$ ) in all six samples.
- 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 Plans (MMIP) for the three buildings were submitted to EPA in January 2012 (Webster House) and January 2014 (Field and Grayson Houses) and included visual inspections and verification wipe sampling of encapsulated surfaces.

Based on the baseline sample results (majority were non-detect for PCBs) and some encapsulated areas subsequently covered by window frames and sheet metal cladding, wipe sampling was limited to accessible surfaces. Following the 2015 monitoring event and subsequent communications with EPA, the monitoring plan was modified to include annual visual inspections and biennial wipe sampling of accessible encapsulated surfaces. A summary of the monitoring plans is provided below:

**Field and Grayson Houses**

- Visual inspection of masonry joints along the roof lines from the ground. Due to the limited accessibility to these areas, wipe samples are not included in the long-term monitoring. In areas where damage or deterioration of the encapsulant or caulking is observed, recommendations for corrective actions will be proposed.
- Visual inspections of the other encapsulated surfaces will be conducted to look for signs of encapsulant deterioration and/or signs of weathering or disturbance of metal window frames and sheet metal barriers.
- Two surface wipe samples of the encapsulated concrete spandrel materials on the exterior side of the Elevator Hall Windows (Type D) will be collected on a biennial basis to evaluate the concentration of PCBs present at the surface. The wipe samples will be collected from a randomly selected portion of the joints between the first and second floors due to access limitations (a lift would be required and limited area of accessibility by building users) to higher locations.
- One surface wipe sample of the encapsulated interior CMU block walls on the sixth floor of the Grayson and Field Houses elevator hall areas not located beneath the Type D

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**Long-Term Maintenance and Monitoring Program**  
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window frames will be collected on a biennial basis from a randomly selected location to evaluate the concentration of PCBs present at the surface.

- No surface wipe samples will be collected from encapsulated surfaces formerly in direct contact with caulking at the Type G, H, and I Narrow Stairwell Windows or the Type J Stairwell Windows, as all encapsulated surfaces at these window types are located under the replacement window frames or sheet metal cladding. Direct contact access to these surfaces is prohibited by a secondary barrier (i.e., new windows and/or metal cladding installed over the encapsulant).

### **Webster House**

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. A total of three surface wipe samples of these encapsulated (Sikagard 550W) interior CMU block walls will be collected from randomly selected locations on a biennial basis.

### **Previous Monitoring Activities – 2012 through 2020**

Long term monitoring activities conducted and reported in the annual long-term monitoring reports as summarized below:

Visual Inspections – results of visual inspections conducted as part of the annual monitoring activities reported the coatings and physical barriers (window frames, sheet metal cladding, caulking) to be in good physical condition with no evidence of deterioration or damage. The exceptions to this were coated concrete surfaces around a single roofline joint on field house (additional coating applied in 2018) and limited amount of damaged paint on the 6<sup>th</sup> floor elevator lobby wall at Grayson House which was repainted in 2017.

Surface Wipe Sampling – analytical results from surface wipe samples collected from encapsulated surfaces reported PCBs as either non-detect or at concentrations < 1 ug/100cm<sup>2</sup>.

Indoor Air Sampling – at the request of EPA, two indoor air samples were collected from the elevator lobby areas at Webster and Grayson Houses in 2016. Samples were collected over a minimum of six hours in accordance with EPA Compendium Method TO-10A Determination of Pesticides and Polychlorinated Biphenyls in Ambient Air Using Low Volume Polyurethane Foam (PUF) Sampling. Analytical results indicated that PCBs were present at concentrations of 36 and 38 ng/m<sup>3</sup>. Given the transitory nature of the elevator lobbies and the anticipated limited duration a typical occupant would be present in these buildings (no more than four years to coincide with a typical undergraduate degree program), these concentrations are well below any projected exposure levels. As such, no additional indoor air sampling was proposed to be conducted within these spaces.

**Attachment 4 – Orchard Hill Area  
Long-Term Maintenance and Monitoring Program  
In-Place Management of PCB Impacted Materials  
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**2022 Monitoring Activities**

The 2022 monitoring event was conducted on July 27, 2022 and included visual inspections of encapsulated surfaces and secondary physical barriers.

- Field and Grayson Houses:
  - Exterior Parapet Masonry Joints – Coated concrete surfaces surrounding the exterior parapet masonry joints were inspected and found no evidence of deterioration of the coating.
  - Concrete Spandrel Beams – Coated concrete surfaces surrounding exterior spandrel beams were inspected and found no evidence of deterioration of the coating.
  - Elevator Hall CMU Block Walls – Coated CMU block materials within the elevator lobby areas were inspected and found no evidence of deterioration of the coatings.
  - Stairwell Materials – Visual inspection of the windows and sheet metal cladding was conducted at the exterior narrow stairwell window jambs of the Grayson House and on the interior stairwell window concrete sills and brick jambs of both buildings. No evidence of damage to the materials was observed.
- Webster House - 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.

**Corrective Actions**

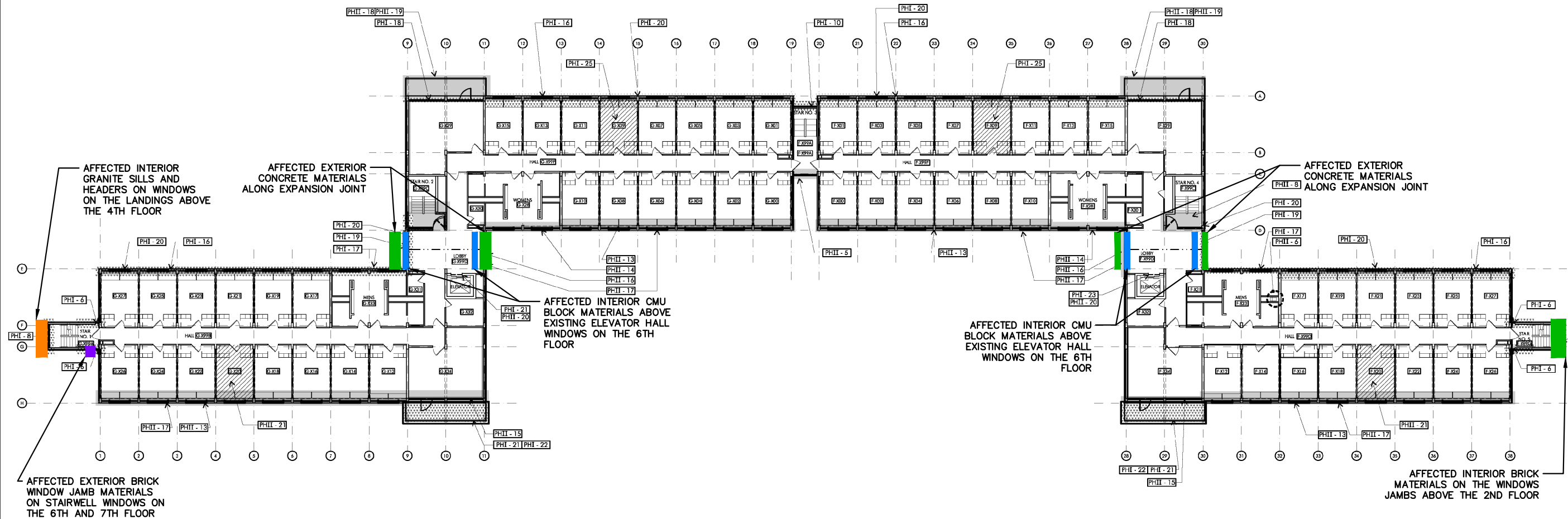
Based on the results of the 2022 monitoring event, no corrective actions are required at this time.

**Next Monitoring Event**

The next monitoring event will be conducted in 2023 and will include visual inspections of encapsulated surfaces and secondary physical barriers along with surface wipe sampling of encapsulated surfaces in accordance with the long-term monitoring plans.



ENCAPSULATED BUILDING SURFACES



ENCAPSULATED BUILDING SURFACES

UMASS GRAYSON & FIELD HOUSE  
AMHERST, MASSACHUSETTS

LONG TERM MONITORING AND  
MAINTENANCE PLAN

JOB NO: 224824.00  
DATE: NOVEMBER 2013  
SCALE: NONE

FIGURE 4-1

DESIGNED BY: GJF  
DRAWN BY: PF

CHECKED BY: GJF  
224824-UMA-GRAYSON-U4-1\*.dwg

COMMITMENT & INTEGRITY DRIVE RESULTS

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 5 – SYLVAN RESIDENTIAL COMPLEX



**Attachment 5 – Sylvan Residential Complex  
Long-Term Maintenance and Monitoring Program  
In-Place Management of PCB Impacted Materials  
UMass Amherst**

**Location:** Sylvan Complex

**Building:** Brown, Cashin, McNamara

**Summary of Remedial Areas**

*In-Place Management:* Residual PCBs at concentrations > 1 part per million (ppm) are being managed in place at interior and exterior locations on the three buildings within the Sylvan Complex. A summary of the locations is as follows:

- Exterior Locations – along horizontal and vertical expansion joints in both high occupancy areas (i.e., within 8’8” of the ground surface) and low occupancy areas (i.e., > 8’ 8” from the ground surface):
  - Exterior Brick Within the Return of Horizontal and Vertical Control Joints (20,690 linear feet [l.f.]) – Brick materials located within the return of the horizontal and vertical control joints were encapsulated with up to three coats of Sikagard 62 liquid epoxy coating and subsequently covered with replacement caulking.
  - Exterior Brick Adjacent to Horizontal Control Joints in High Occupancy Areas (860 l.f.) – One full row of brick above and three full rows of brick below horizontal control joints within 8’ 8” of the ground surface were encapsulated with up to three coats of Sikagard 670W clear acrylic coating.
  - Exterior Brick Adjacent to Vertical Control Joints in High and Low Occupancy Areas (5,690 l.f.) – One full row of brick on either side of the vertical control joints were coated with up to three coats of Sikagard 670W clear acrylic coating.
- Interior Locations – along former caulked joints and adjacent building materials as follows:
  - Interior Concrete Columns/Walls (352 square feet [s.f.]) – Select interior concrete columns and walls at the Brown and McNamara buildings were coated with liquid coatings as part of the ADA restroom upgrades in these buildings and interior renovations to the lower level common areas at McNamara. Materials formerly in direct contact with the removed source materials were coated with two coats of Sikagard 62 liquid epoxy coating. Materials containing PCBs > 1 ppm away from the former source materials were coated with a minimum of two coats of Sikagard 670W acrylic, and/or Sikagard 550W elastomeric paint.
  - Interior Concrete Ceilings (835 s.f.) – Concrete ceilings outside the ADA Restroom upgrades at Brown and McNamara and the ceiling within the first-floor common area (now the first floor office space) at Cashin were coated with liquid coatings. Materials formerly in direct contact with the source materials were coated with two coats of Sikagard 62 liquid epoxy coatings. Materials containing PCBs > 1 ppm away from the former source materials were coated with a minimum of two coats of Sikagard 670W acrylic and/or Sikagard 550W elastomeric paint.

**Attachment 5 – Sylvan Residential Complex  
Long-Term Maintenance and Monitoring Program  
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Photographs of typical coating application areas are provided below.



Typical Interior Encapsulated Surfaces  
(Concrete Walls and Ceiling)



Typical Vertical and Horizontal Control Joints  
(New Caulking and Clear Coating Visible)

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

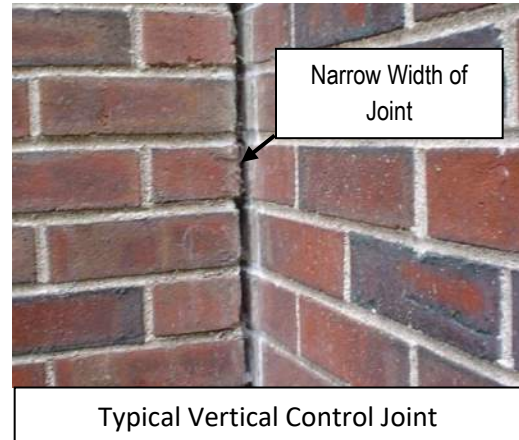
- Exterior - former direct contact areas:
  - Horizontal control joints on the building's façade (83 wipe samples):
    - 79 samples were reported as  $< 1 \mu\text{g}/100\text{cm}^2$  total PCBs (95% of the samples); and
    - 4 samples  $> 1 \mu\text{g}/100\text{cm}^2$  at 1.2, 1.3, 2.4, and  $4.8 \mu\text{g}/100\text{cm}^2$  (3 at McNamara and 1 at Cashin; none at Brown).
  - Vertical control joints on the building's façade (38 wipe samples):
    - 23 samples were reported as  $< 1 \mu\text{g}/100\text{cm}^2$  total PCBs (60% of the samples); and
    - 15 samples  $> 1 \mu\text{g}/100\text{cm}^2$ ; 12 of the 15 samples were collected from McNamara (up to  $250 \mu\text{g}/100\text{cm}^2$ ), 1 at Brown ( $1.2 \mu\text{g}/100\text{cm}^2$ ); and 2 at Cashin ( $1.15$  and  $3.5 \mu\text{g}/100\text{cm}^2$ ).
- Exterior - areas away from the former caulked joints:
  - Horizontal control joints on the building's façade in high occupancy areas (19 wipe samples):
    - All 19 samples were reported as  $< 1 \mu\text{g}/100\text{cm}^2$  total PCBs (100% of the samples).
  - Vertical control joints on the building's façade (44 wipe samples):
    - 35 samples were reported as  $< 1 \mu\text{g}/100\text{cm}^2$  total PCBs (80% of the samples);
    - 9 samples  $> 1 \mu\text{g}/100\text{cm}^2$ ; 8 of the 9 samples were collected from McNamara (up to  $2.3 \mu\text{g}/100\text{cm}^2$ ) and 1 at Brown ( $1.8 \mu\text{g}/100\text{cm}^2$ ); and



**Attachment 5 – Sylvan Residential Complex  
Long-Term Maintenance and Monitoring Program  
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- All baseline verification wipe samples from the interior encapsulated areas were below the target level of  $1 \mu\text{g}/100\text{cm}^2$  with the exception of three samples from McNamara (1.3, 1.5, and  $1.6 \mu\text{g}/100\text{cm}^2$ ).

As indicated above, most locations met the target levels (with some minor areas slightly above the target level) with the exception of the vertical control joints at McNamara. As data was reviewed during the McNamara exterior renovation project, additional measures were conducted including additional coats of epoxy and more frequent inspections. Given the limited size of the joints, observations indicated some of the backing material deep within the return of the narrow joint could not be removed without substantial damage to the brick façade; residual PCBs in this material may be affecting the epoxy wipe results; however, this material was subsequently covered by the epoxy, new backing material, and new caulking.



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

Following completion of the remediation activities at the three buildings, a Long Term Monitoring and Maintenance Implementation Plan (MMIP) was submitted to the United States Environmental Protection Agency (EPA) in February 2014. The MMIP included visual inspections and surface wipe sampling of the encapsulated surfaces. Following the completion of the 2018 monitoring event, modifications to the long-term monitoring program were proposed to include annual visual inspections and biennial wipe sampling of the accessible encapsulated surfaces. On June 4, 2019, EPA issued the PCB Decontamination and Disposal Approval for the Sylvan Complex which included confirmation that long-term monitoring was to continue in accordance with the MMIP and the proposed revisions.

Visual Inspections: Visual inspections will be conducted annually at representative areas of each of the types of encapsulated surfaces to confirm the presence of the encapsulating coatings/barriers.

Surface Wipe Sampling: Surface wipe samples will be collected on a biennial basis from representative locations of the following encapsulated surfaces to aid in determining the effectiveness of the encapsulants over time.

- Exterior Surfaces
  - Horizontal Control Joints in High Occupancy Areas ( $< 8' - 8''$  above ground surfaces [ags]) (860 l.f.) – 1 sample of brick adjacent to the joints per building façade (total of 12 samples proposed; 4 per building);
  - Vertical Control Joints in High Occupancy Areas ( $< 8' - 8''$  ags) (878 l.f.) – 1 sample of brick adjacent to the joints per building façade (total of 12 samples proposed; 4 per building);

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- Collection of surface wipe samples from exterior encapsulated surfaces in low-occupancy areas (i.e., surfaces at heights greater than 8'-8" ags) is not conducted given their inaccessibility and the low likelihood that these surfaces will be contacted by occupants or building users.
- Interior Surfaces
  - Interior Concrete Columns/Walls (Brown and McNamara) (352 s.f.) – 1 sample per work area (total of 3 samples proposed; 1 at Brown and 2 at McNamara); and
  - Interior Concrete Ceilings (Brown, McNamara, and Cashin) (835 s.f.) – a total of five samples to be collected with a minimum of 1 sample per work area (1 at Brown; 2 at McNamara; and 2 at Cashin).

**Previous Monitoring Events**

Visual inspection and wipe sampling of encapsulated surfaces was conducted in accordance with the MMIP as described above from 2014 to 2020. In addition, indoor air samples were collected to evaluate indoor conditions during multiple events between 2016 and 2020. Results of the monitoring activities are summarized below:

Visual Inspection: Results of the visual inspections indicated that the encapsulating barriers (caulking within exterior control joints and liquid coatings applied over interior and exterior areas with residual PCBs) were in good physical condition. Isolated areas of flaking and peeling were observed on the clear coating over the brick surfaces adjacent to the joints. The flaking and peeling were consistent with observations of similar coating applications at other areas on the campus.

Wipe Samples: Wipe samples were collected from interior and exterior coated masonry surfaces as described above. A summary of the results is as follows:

- Sikagard 670W Clear Acrylic Coating: Wipe samples were collected from exterior brick along horizontal and vertical control joints within high occupancy areas at the three buildings from 2014 through 2020. Analytical results were as follows:
  - Vertical Control Joints – analytical results reported PCBs as either non-detect or present at concentrations ranging from 0.23 to 3.4  $\mu\text{g}/100\text{cm}^2$  (14 samples). These results were consistent with the baseline data.
  - Horizontal Control Joints – PCBs were reported as either non-detect or present at concentrations < 1  $\mu\text{g}/100\text{cm}^2$  (6 samples with PCB reported at concentrations up to 0.58  $\mu\text{g}/100\text{cm}^2$ ). These results were consistent with the baseline data.
- Interior Concrete Columns/Walls: Three wipe samples were collected during each event from interior concrete columns/walls encapsulated with Sikagard 550W elastomeric coating (the final coating applied to interior concrete columns and walls). Analytical results were consistent with the baseline data with PCBs reported as either non-detect (12

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samples at  $< 0.20 \mu\text{g}/100\text{cm}^2$ ) or present at concentrations of 0.21, 0.75, and  $1.27 \mu\text{g}/100\text{cm}^2$ .

- Interior Concrete Ceiling: Five wipe samples were collected during each event from interior concrete ceiling surfaces encapsulated with interior acrylic paint (the final coating applied over Sikagard 62 liquid epoxy and/or Sikagard 670w clear acrylic). Analytical results indicated that PCBs were either non-detect (18 samples at  $< 0.20 \mu\text{g}/100\text{cm}^2$ ) or present at concentrations ranging from 0.38 to  $0.82 \mu\text{g}/100\text{cm}^2$  (8 samples – collected from McNamara and Cashin). These results are consistent with the baseline data.
- McNamara Vertical Control Joints: To further assess these conditions (as described above), additional evaluation was conducted consisting of additional round soft wipe samples and varying extraction methods (hexane, saline, etc.). Based on these results, the hexane wipes may not be truly representative of surficial PCBs that could be available for direct contact and/or leaching through normal anticipated pathways (e.g., incidental contact, rainwater, etc.).

Based on the results of samples from the surface of the replacement caulking, UMass evaluated products to apply as secondary physical barriers over the lower portions of the vertical joints at McNamara; although no decision as to a final product has been made.

#### Indoor Air Sampling

Between 2016 and 2020, multiple rounds of indoor air sampling were conducted to evaluate indoor air conditions in the renovation areas of the three buildings. The initial sampling events were conducted to evaluate indoor air conditions during periods of normal occupancy and periods when the building was not occupied as well as periods of varying ambient outdoor conditions (e.g., warmer summer months, cooler fall/spring months, and colder winter months).

On average, the higher PCB concentrations were detected in the summer months during the period of warmer ambient temperatures and when the building is unoccupied and typically closed-up with minimum usage (e.g., building doors and windows typically closed and students and staff either not present or in the buildings at a reduced frequency).

As presented in the 2018 report, site-specific exposure levels were calculated for each of the three types of spaces in accordance with EPA's "Exposure Levels for Evaluating Polychlorinated Biphenyls (PCBs) in Indoor School Air". EPA has calculated exposure levels intended to maintain an overall PCB exposure below the oral reference dose (RfD) of  $20 \text{ ng PCB/kg body weight per day}$ . The resulting calculations provide exposure levels for adults and children which may be used to guide thoughtful evaluation of indoor air quality in schools.

At the Sylvan Complex, students could be present for approximately 210 days per year (based on a 30-week academic year and 7 days per week). Staff at the Cashin Service Desk could also be present for approximately 210 days per year (based on working 5 days per week over 42 weeks per year). The frequency per day was estimated at: 8 hours for the Service Desk Worker; 2 hours for common



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area/meeting room/lounge use by a student; and 0.4 hours for ADA restroom use (5 minutes, 5 times per day).

Using EPA's PCB Exposure Estimation Tool (v1.2), a site-specific PCB indoor air exposure level was calculated using the above frequencies and duration assumptions. For both school and non-school exposures, EPA PCB background concentrations for dust, soil, indoor air, and outdoor air were used. The calculated exposure levels for indoor air for the three types of spaces are provided on Table 5-2.

Overall, analytical results from the indoor air sampling demonstrate that the concentration of PCBs in indoor air remained below the calculated site-specific exposure levels during periods of normal occupancy (with the exception of the Cashin Service Desk area in 2017 and 2021) and that the ventilation of the three buildings prior to the start of the fall semester is effective in reducing the PCB concentrations in indoor air (based on a comparison between the results from the fall sampling events and the summer sampling events as described in previous submittals and the MMIP).

Because the intent of the monitoring is to evaluate potential exposures to building occupants under normal operating and use conditions, indoor air sampling is conducted during the early parts of the fall semester. This timeframe was selected to evaluate conditions during periods of normal building use and occupancy that would typically coincide with periods of warmer ambient temperatures. Beginning in 2018, UMass conducted ventilation of the buildings as part of the building re-opening for use procedures ahead of the fall semesters. The ventilation was conducted by opening interior partition doors and the main building entry doors and using portable fans to enhance ventilation.

### **2022 Monitoring Activities**

The 2022 monitoring event was conducted on September 26, 2022 and included visual inspections, surface wipe sampling, and indoor air sampling.

A summary of the results is presented below.

#### Visual Inspection

Results of the visual inspections are as follows:

- Exterior Expansion Joint Caulking: Visual inspection of the caulking within the horizontal and vertical controls joints indicated that the caulking was in good physical condition with no damaged or missing sections observed.
- Exterior Brick Surfaces: Visual inspection of the Sikagard 670W clear acrylic coating applied along the exterior horizontal and vertical controls joints indicated that the coating remains in good condition over the majority of encapsulated surfaces with isolated areas of flaking and peeling consistent with previous monitoring events.
- Interior Concrete Columns/Walls/Ceilings: Visual inspection indicated that coatings installed to masonry materials were in good condition. No deterioration was observed.

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Wipe Samples – Exterior Masonry Joints

Wipe samples were collected from exterior brick surfaces coated with Sikagard 670W clear acrylic coating as described above. A summary of the analytical results is presented in Table 5-1 and is as follows:

- 24 wipe samples (12 along vertical joints and 12 along horizontal joints) were collected from brick along horizontal and vertical control joints within high occupancy areas at the three buildings and submitted for PCB analysis.
  - Vertical Control Joints – total PCBs were reported as either non-detect (6 samples < 0.20 ug/100cm<sup>2</sup> – including all four samples collected at Cashin) or at concentrations up to 3.78 ug/100cm<sup>2</sup> (6 samples with an average reported concentration of 1.6 ug/100cm<sup>2</sup>).
  - Horizontal Control Joints – total PCBs were reported as non-detect in 7 samples (< 0.20 ug/100cm<sup>2</sup>) and at concentrations up to 1.1 ug/100cm<sup>2</sup> in 5 samples with an average concentration of 0.47 ug/100cm<sup>2</sup>.
- Analytical results from samples collected during the 2022 event are consistent with the baseline sampling event along both vertical and horizontal joints with the majority of the samples reported as either non-detect or below the project action level of 1 ug/100cm<sup>2</sup> for continued monitoring. As per the MMIP, locations with representative samples reported at concentrations > 1 ug/100cm<sup>2</sup> will be included in the next round of surface wipe samples to be conducted.

Wipe Samples – Interior Concrete Surfaces

Wipe samples were collected from interior concrete columns/walls and ceilings at the three buildings. A summary of the analytical results for each is presented below:

- Interior Concrete Ceiling: Five wipe samples were collected from interior concrete ceiling surfaces encapsulated with interior acrylic paint (the final coating applied over Sikagard 62 liquid epoxy and/or Sikagard 670w clear acrylic). Analytical results indicated that PCBs were non-detect in 1 sample and reported at concentrations up to 1.79 ug/100cm<sup>2</sup> in the other four samples.
- Interior Concrete Columns/Walls: Three wipe samples were collected from interior concrete columns/walls encapsulated with Sikagard 550W elastomeric coating (the final coating applied to interior concrete columns and walls). Analytical results reported PCBs as non-detect in 2 samples (< 0.20 ug/100cm<sup>2</sup>) and present at a concentration of 0.24 ug/100cm<sup>2</sup> in the sample collected at Brown.
- Analytical results were relatively consistent with the previous long term monitoring results and the baseline monitoring event. As per the MMIP, locations represented by wipe samples reported to contain PCBs > 1 ug/100cm<sup>2</sup> will be included in the next wipe sampling event to confirm stable conditions.

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Indoor Air Sample Collection

Indoor air samples were collected during two events in 2022. The first sampling was conducted in February from the Cashin Service Desk area to confirm that the results from the 2021 sampling event did not represent conditions throughout the year. The second event was conducted in September to evaluate conditions shortly after students returned for the fall semester and including the collection of indoor air samples from common spaces, the ADA restrooms and the Cashin Service Desk.

Observations made during both sampling events indicated that the building doors and windows were closed during sample collection as were the majority of interior partition doors in the sample areas. Based on information provided by UMass, no major renovations or maintenance activities had occurred prior to the sampling events.

Consistent with previous sampling events, indoor air samples were collected over a minimum of six hours in accordance with EPA Compendium Method TO-10A Determination of Pesticides and Polychlorinated Biphenyls in Ambient Air Using Low Volume Polyurethane Foam (PUF) Sampling. Samples were submitted to ConTest Analytical Laboratory for PCB homolog analysis via Gas Chromatographic/Multi-Detector Detection.

Analytical results from the two events are summarized in Table 5-2 (along with the previous data) and presented below.

In February one indoor air sample was collected from the Cashin Service Desk area. Analytical results reported PCBs at a concentration of 382 ng/m<sup>2</sup>, consistent with previous monitoring events and below the site-specific exposure level. These results indicate that the elevated concentration reported in the September 2021 sampling event may have been anomalous and not representative of conditions throughout the school year.

In August, as part of the building re-opening for use procedures implemented for the previous several years, UMass conducted ventilation of the buildings by opening interior partition doors and the main building entry doors and using portable fans to enhance ventilation. However, due to staffing limitations, the ventilation was conducted using small portable fans instead of the larger units used prior to the pandemic and the buildings were closed back up for several weeks prior to students returning for the Fall semester (similar to what was done in 2021).

Four indoor air samples were collected on September 26, 2022. Analytical results were below the site specific exposure levels for each type of space with the exception of the sample collected from the Cashin Service Desk area. Analytical results from that sample reported PCBs at a concentration of 596 ng/m<sup>3</sup> which is above the exposure level of 422 ng/m<sup>3</sup> but within the range of previous sampling results from this area and below the concentration reported in the sample collected in September 2021. A summary of the samples collected, and the exposure levels is present on Table 5-2.

**Conclusions/Next Steps**

The results of the 2022 monitoring event were consistent with previous sampling events and the baseline monitoring results for the respective areas and materials. In accordance with the MMIP,

**Attachment 5 – Sylvan Residential Complex  
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locations represented by wipe samples reporting PCBs above the project action level of 1 ug/100cm<sup>2</sup> will be designated for follow-up wipe sampling during the next sampling event.

Based on the results of the indoor air sampling, continued monitoring is proposed for 2023 following the return of students for the fall semester. A summary of the planned air sampling program is as follows:

- ADA Restrooms – 1 sample will be collected from the Brown ADA restroom area.
- First Floor and Lower Level Common Areas – 1 sample will be collected from the 1<sup>st</sup> Floor Study/Lounge area at Brown (see above) and 1 sample will be collected from the lower level study area at McNamara (total of 2 samples).
- Cashin Service Desk – 1 sample will be collected.

As reported in previous annual reports, UMass continues to evaluate the application of secondary barrier systems over those vertical control joints considered to be in the high occupancy area as defined specific to this project (< 8' 8" above ground surface) at the McNamara building. At this time, the final product has not been determined; however, it is anticipated that it will be a pre-formed silicone barrier material or similar barrier material designed to span the control joint.

Table 5-1  
Summary of Long Term Monitoring Wipe Sampling Results - Sylvan Complex

UMass Amherst

Building Location	Sample Date	Sample ID	Total PCBs (ug/wipe)
Exterior Vertical Control Joints - Adjacent Brick Materials			
McNamara	9/26/2022	LTM-MR-VWP-609	3.78
		LTM-MR-VWP-612	1.2
		LTM-MR-VWP-614	2.0
		LTM-MR-VWP-615	< 0.20
Brown	9/26/2022	LTM-BR-VWP-616	2.2
		LTM-BR-VWP-617	0.2
		LTM-BR-VWP-619	0.27
		LTM-BR-VWP-624	< 0.20
Cashin	9/26/2022	LTM-CR-VWP-626	< 0.20
		LTM-CR-VWP-628	< 0.20
		LTM-CR-VWP-630	< 0.20
		LTM-CR-VWP-632	< 0.20
Exterior Horizontal Control Joints - Adjacent Brick Materials			
McNamara	9/26/2022	LTM-MR-HWP-610	< 0.20
		LTM-MR-HWP-611	1.1
		LTM-MR-HWP-613	< 0.20
		LTM-MR-HWP-618	< 0.20
Brown	9/26/2022	LTM-BR-HVP-620	< 0.20
		LTM-BR-HVP-621	0.33
		LTM-BR-HVP-622	0.2
		LTM-BR-HVP-623	0.2
Cashin	9/26/2022	LTM-CR-HWP-625	< 0.20
		LTM-CR-HWP-627	< 0.20
		LTM-CR-HWP-629	< 0.20
		LTM-CR-HWP-631	0.55
Interior Renovation Areas - Concrete Ceilings			
Cashin	9/26/2022	LTM-CR-VWP-607	< 0.20
	9/26/2022	LTM-VWP-608	1.37
McNamara	9/26/2022	LTM-VWP-604	1.14
	9/26/2022	LTM-MR-VWP-605	1.79
Brown	9/26/2022	LTM-VMP-602	1.2
Interior Renovation Areas - Concrete Walls			
McNamara	9/26/2022	LTM-MR-VWP-603	< 0.20
	9/26/2022	LTM-VWP-606	< 0.20
Brown	9/26/2022	LTM-BR-VWP-601	0.24

Notes:

Samples submitted for PCB analysis via USEPA method 8082 with Soxhlet Extraction (3540C).

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

Table 5-2  
Summary of Indoor Air Sampling Results - 2017 to 2021  
Sylvan Complex

Area	Air Sample ID	Sample Date	Location	Total PCB Concentration (ng/m³)	Site-Specific Exposure Level (ng/m³)
Cashin Service Desk	LT-CR-IAS-109	10/5/2017	Service Desk	617	422 ng/m³
	LT-CR-IAS-109	10/5/2017	Service Desk	617	
	LT-CR-IAS-301	9/13/2018	Service Desk	404	
	LT-CR-IAS-401	9/17/2019	Service Desk	370	
	LT-CR-IAS-408	9/15/2021	Cashin - 1st Floor Service Desk - Room 108	917	
	LT-CR-IAS-501	2/28/2022	Cashin - 1st Floor Service Desk - Room 108	382	
	LT-CR-IAS-604	9/26/2022	Cashin - 1st Floor Service Desk - Room 108	596	
ADA Restroom Areas	LT-BR-IAS-303	9/13/2018	Brown - ADA Restroom 113	321	7,943 ng/m³
	LT-BR-IAS-402	9/17/2019	Brown - ADA Restroom 113	181	
	LT-MR-IAS-502	1/19/2021	McNamara - ADA Restroom 115	205	
	LT-MR-IAS-405	9/15/2021	McNamara - ADA Restroom 115	660	
	LT-MR-IAS-601	9/26/2022	McNamara ADA Restroom 115	586	
First Floor and Lower Level Common Areas	LT-MR-IAS-107	10/5/2017	McNamara 1st Floor Study/Lounge - Room 113	453	1,662 ng/m³
	LT-MR-IAS-105	10/5/2017	McNamara Lower Level Study Area - Room	223	
	LT-MR-IAS-106	10/5/2017	McNamara Lower Level Study Area - Hallway	237	
	LT-BR-IAS-108	10/5/2017	Brown 1st Floor Study/Lounge - Room 111	389	
	LT-MR-IAS-302	9/13/2018	McNamara Lower Level Study Area - Hallway	226	
	LT-MR-IAS-403	9/17/2019	McNamara 1st Floor Study/Lounge - Room 113	549	
	LT-MR-IAS-404	9/17/2019	McNamara Lower Level Study Area - Hallway	219	
	LT-BR-IAS-501	1/19/2021	Brown 1st Floor Study/Lounge - Room 111	196	
	LT-MR-IAS-406	9/15/2021	McNamara Lower Level Study Area - 04C	258	
	LT-MR-IAS-407	9/15/2021	Brown 1st Floor Study/Lounge - Room 111	616	
	LT-BR-IAS-602	9/26/2022	Brown 1st Floor Study/Lounge - Room 111	956	
	LT-MR-IAS-603	9/26/2022	McNamara Lower Level Study Area - 04C	369	

Notes:

- 1. Site Specific Exposure level calculated in accordance with EPA's Exposure Levels for Evaluating Polychlorinated Biphenyls in Indoor School Air.
- 2. Air samples collected in accordance with USEPA Compendium Method TO-10A and submitted for laboratory analysis of PCBs homologs.
- 3. Total PCB concentration is the total PCB homologs reported by the lab (ng/cartridge) per corrected sample volume (m³/cartridge).

## ATTACHMENT 6 – PHYSICAL PLANT



**Attachment 6 – Physical Plant  
Long-Term Maintenance and Monitoring Program  
In-Place Management of PCB Impacted Materials  
UMass Amherst**

**Location:** Physical Plant Room 230A

**Summary of Remedial Areas**

*In-Place Management:* Residual PCBs on interior CMU block walls are being managed in place following a window replacement project conducted on the second floor of the Physical Plant in 2012 and 2013. The replacement project was conducted in the area formerly designated as Room 230A and currently identified as Rooms 204, 209, 210, 208, 212, and 214. The locations of the remediation and in-place management are depicted on Attachment A. Two coats of Sikagard 62 liquid epoxy coating were applied to CMU block materials to a distance of six inches from the former joints. The materials were then covered by the gypsum wall board finish materials and replacement frames.



**Typical Area of In-Place Management**

*Post Abatement Wipe Sampling Data Summary:* Five wipe samples were collected from the encapsulated masonry block surrounds following completion of the remediation activities. Analytical results from the five samples indicated that PCBs were non-detect ( $< 2 \mu\text{g}/100 \text{ cm}^2$ ).

**Monitoring and Maintenance Implementation Plan**

The Monitoring and Maintenance Implementation Plan (MMIP) was submitted to the United States Environmental Protection Agency (EPA) on December 16, 2013 as part of the Final Completion Report. Due to the inaccessibility of the encapsulated CMU block, long term monitoring activities include visual inspections of the replacement window frames and gypsum wall board materials installed over the underlying CMU block. Visual inspections are conducted on an annual basis.

**Previous Monitoring Activities**

Results of visual inspections conducted on an annual basis through 2021 reported no damage, deterioration, or disturbance of the replacement window frames and gypsum wall board materials.



**Attachment 6 – Physical Plant  
Long-Term Maintenance and Monitoring Program  
In-Place Management of PCB Impacted Materials  
UMass Amherst**

**Monitoring Activities – July 2022**

Woodard & Curran personnel performed the visual inspections of the interior finish materials for signs of damage or deterioration. The replacement window frames and gypsum wall board materials were observed to be in good condition with no signs of damage or wear.

**Next Monitoring Event**

The next monitoring event will be conducted in July 2023 as part of the campus-wide long-term monitoring program.

**Attachment 6 – Physical Plant  
Long-Term Maintenance and Monitoring Program  
In-Place Management of PCB Impacted Materials  
UMass Amherst**

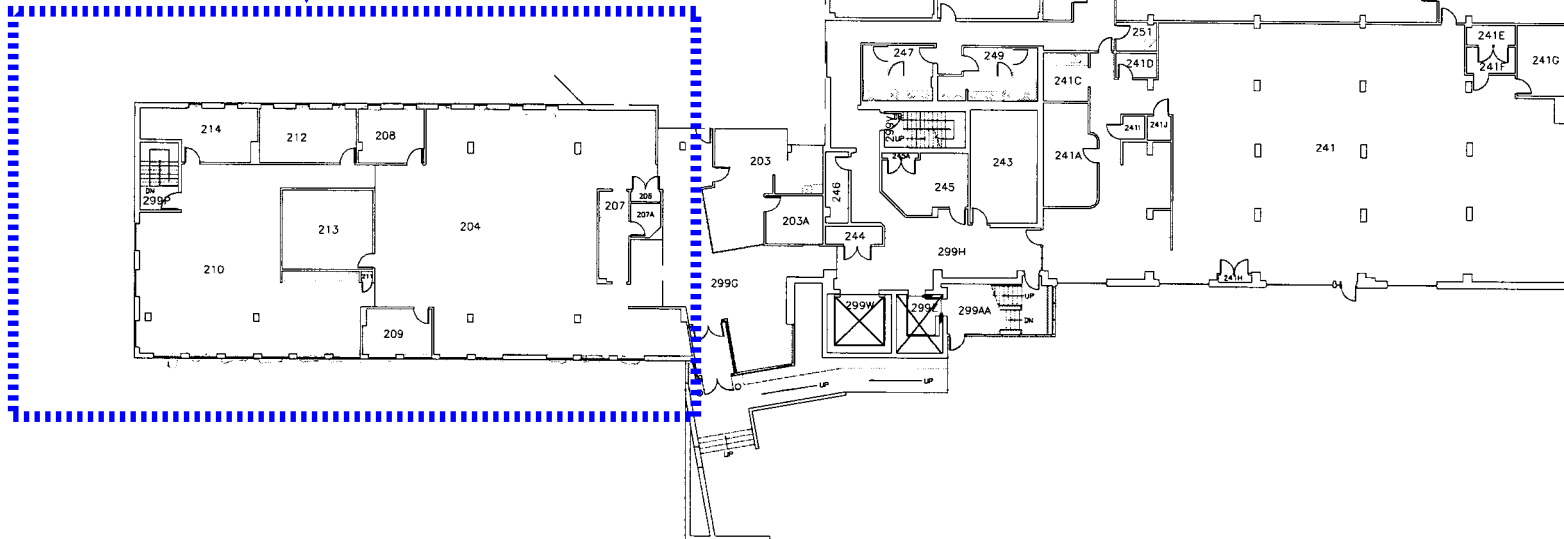
**ATTACHMENT A**

# Attachment A Second Floor Physical Plant

Area subject to Long Term  
Monitoring



PHYSICAL PLANT  
BUILDING - 170



**PHYSICAL PLANT BUILDING ADDITION  
SECOND FLOOR PLAN**  
Facilities Planning  
University of Massachusetts Amherst

Issue Date: 08/23/06  
Revision Date: 07/13  
Building No: 398

398-02

NOT TO SCALE



## ATTACHMENT 7 – ANALYTICAL LABORATORY REPORTS



March 10, 2022

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

Project Location: Amherst, MA  
Client Job Number:  
Project Number: 0225695  
Laboratory Work Order Number: 22C0096

Enclosed are results of analyses for samples as received by the laboratory on March 1, 2022. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Meghan E. Kelley  
Project Manager

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39 Spruce Street \* East Longmeadow, MA 01028 \* FAX 413/525-6405 \* TEL. 413/525-2332Woodard & Curran - Andover, MA  
40 Shattuck Road., Suite 110  
Andover, MA 01810  
ATTN: George Franklin

REPORT DATE: 3/10/2022

PURCHASE ORDER NUMBER:

PROJECT NUMBER: 0225695

**ANALYTICAL SUMMARY**

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WORK ORDER NUMBER: 22C0096

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

PROJECT LOCATION: Amherst, MA

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
LT-CR-IAS-501	22C0096-01	Air		TO-10A/EPA 680 Modified	

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39 Spruce Street \* East Longmeadow, MA 01028 \* FAX 413/525-6405 \* TEL. 413/525-2332

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**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:**

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**V-06**

Continuing calibration verification (CCV) did not meet method specifications and was biased on the high side for this compound.

**Analyte & Samples(s) Qualified:****Monochlorobiphenyls**

B302596-BS1, B302596-BSD1, S069013-CCV2

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**V-20**

Continuing calibration verification (CCV) did not meet method specifications and was biased on the high side. Data validation is not affected since sample result was "not detected" for this compound.

**Analyte & Samples(s) Qualified:****Monochlorobiphenyls**

22C0096-01[LT-CR-IAS-501], B302596-BLK1

The results of analyses reported only relate to samples submitted to Con-Test, a Pace 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.



Lisa A. Worthington  
Technical Representative



39 Spruce Street \* East Longmeadow, MA 01028 \* FAX 413/525-6405 \* TEL. 413/525-2332

**ANALYTICAL RESULTS**

Project Location: Amherst, MA  
 Date Received: 3/1/2022  
**Field Sample #: LT-CR-IAS-501**  
**Sample ID: 22C0096-01**

Sample Description/Location:  
 Sub Description/Location:

**Work Order: 22C0096**

Sample Matrix: Air  
 Sampled: 2/28/2022 17:42

Flow Controller ID:  
 Sample Type:  
 Air Volume L: 1210

**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	V-20	ND	0.00083	1	3/9/22 14:14	IMR
Dichlorobiphenyls	0.0082	0.0010		0.0068	0.00083	1	3/9/22 14:14	IMR
Trichlorobiphenyls	0.037	0.0020		0.031	0.0017	1	3/9/22 14:14	IMR
Tetrachlorobiphenyls	0.18	0.0020		0.15	0.0017	1	3/9/22 14:14	IMR
Pentachlorobiphenyls	0.20	0.0020		0.17	0.0017	1	3/9/22 14:14	IMR
Hexachlorobiphenyls	0.040	0.0020		0.033	0.0017	1	3/9/22 14:14	IMR
Heptachlorobiphenyls	0.0035	0.0030		0.0029	0.0025	1	3/9/22 14:14	IMR
Octachlorobiphenyls	ND	0.0030		ND	0.0025	1	3/9/22 14:14	IMR
Nonachlorobiphenyls	ND	0.0050		ND	0.0041	1	3/9/22 14:14	IMR
Decachlorobiphenyl	ND	0.0050		ND	0.0041	1	3/9/22 14:14	IMR
Total Polychlorinated biphenyls	0.47			0.39		1	3/9/22 14:14	IMR

Surrogates	% Recovery	% REC Limits	
Tetrachloro-m-xylene	86.6	50-125	3/9/22 14:14

---

39 Spruce Street \* East Longmeadow, MA 01028 \* FAX 413/525-6405 \* TEL. 413/525-2332**Sample Extraction Data****Prep Method: SW-846 3540C      Analytical Method: TO-10A/EPA 680 Modified**

Lab Number [Field ID]	Batch	Initial [Cartridge	Final [mL]	Date
22C0096-01 [LT-CR-IAS-501]	B302596	1.00	1.00	03/07/22

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39 Spruce Street \* East Longmeadow, MA 01028 \* FAX 413/525-6405 \* TEL. 413/525-2332

**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 B302596 - SW-846 3540C											
Blank (B302596-BLK1)					Prepared: 03/07/22 Analyzed: 03/09/22						
Monochlorobiphenyls	ND	0.0010									V-20
Dichlorobiphenyls	ND	0.0010									
Trichlorobiphenyls	ND	0.0020									
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	0.133				0.200		66.7	50-125			
LCS (B302596-BS1)					Prepared: 03/07/22 Analyzed: 03/09/22						
Monochlorobiphenyls	0.16	0.0010			0.200		81.9	40-140			V-06
Dichlorobiphenyls	0.17	0.0010			0.200		83.5	40-140			
Trichlorobiphenyls	0.17	0.0020			0.200		87.0	40-140			
Tetrachlorobiphenyls	0.36	0.0020			0.400		89.7	40-140			
Pentachlorobiphenyls	0.36	0.0020			0.400		90.6	40-140			
Hexachlorobiphenyls	0.39	0.0020			0.400		97.4	40-140			
Heptachlorobiphenyls	0.58	0.0030			0.600		96.5	40-140			
Octachlorobiphenyls	0.61	0.0030			0.600		102	40-140			
Nonachlorobiphenyls	1.1	0.0050			1.00		114	40-140			
Decachlorobiphenyl	1.0	0.0050			1.00		100	40-140			
Surrogate: Tetrachloro-m-xylene	0.170				0.200		84.9	50-125			
LCS Dup (B302596-BSD1)					Prepared: 03/07/22 Analyzed: 03/09/22						
Monochlorobiphenyls	0.16	0.0010			0.200		81.7	40-140	0.221	50	V-06
Dichlorobiphenyls	0.16	0.0010			0.200		80.4	40-140	3.76	50	
Trichlorobiphenyls	0.17	0.0020			0.200		82.7	40-140	5.00	50	
Tetrachlorobiphenyls	0.34	0.0020			0.400		85.4	40-140	4.88	50	
Pentachlorobiphenyls	0.34	0.0020			0.400		85.0	40-140	6.37	50	
Hexachlorobiphenyls	0.39	0.0020			0.400		97.1	40-140	0.334	50	
Heptachlorobiphenyls	0.57	0.0030			0.600		95.2	40-140	1.33	50	
Octachlorobiphenyls	0.60	0.0030			0.600		101	40-140	0.862	50	
Nonachlorobiphenyls	1.1	0.0050			1.00		111	40-140	2.57	50	
Decachlorobiphenyl	0.95	0.0050			1.00		95.2	40-140	4.90	50	
Surrogate: Tetrachloro-m-xylene	0.173				0.200		86.6	50-125			

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39 Spruce Street \* East Longmeadow, MA 01028 \* FAX 413/525-6405 \* TEL. 413/525-2332**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
ND	Not Detected
RL	Reporting Limit is at the level of quantitation (LOQ)
DL	Detection Limit is the lower limit of detection determined by the MDL study
MCL	Maximum Contaminant 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.
V-06	Continuing calibration verification (CCV) did not meet method specifications and was biased on the high side for this compound.
V-20	Continuing calibration verification (CCV) did not meet method specifications and was biased on the high side. Data validation is not affected since sample result was "not detected" for this compound.

39 Spruce Street \* East Longmeadow, MA 01028 \* FAX 413/525-6405 \* TEL. 413/525-2332

**INTERNAL STANDARD AREA AND RT SUMMARY**
**EPA 680 Modified**

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
<b>Initial Cal Check (S067893-ICV1 )</b>			Lab File ID: F22S032013.D			Analyzed: 02/01/22 22:02			
Phenanthrene-d10	377080	20.801	377080	20.801	100	70 - 130	0.0000	+/-0.50	
Chrysene-d12	206141	28.746	206141	28.746	100	70 - 130	0.0000	+/-0.50	

**INTERNAL STANDARD AREA AND RT SUMMARY**
**TO-10A/EPA 680 Modified**

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
<b>Calibration Check (S069013-CCV1 )</b>			Lab File ID: F22S068003.D			Analyzed: 03/09/22 09:14			
Phenanthrene-d10	465703	20.794	465703	20.794	100	70 - 130	0.0000	+/-0.50	
Chrysene-d12	235608	28.738	235608	28.738	100	70 - 130	0.0000	+/-0.50	
<b>LCS (B302596-BS1 )</b>			Lab File ID: F22S068004.D			Analyzed: 03/09/22 09:52			
Phenanthrene-d10	513698	20.794	465703	20.794	110	70 - 130	0.0000	+/-0.50	
Chrysene-d12	269292	28.746	235608	28.738	114	70 - 130	0.0080	+/-0.50	
<b>LCS Dup (B302596-BSD1 )</b>			Lab File ID: F22S068005.D			Analyzed: 03/09/22 10:29			
Phenanthrene-d10	515402	20.794	465703	20.794	111	70 - 130	0.0000	+/-0.50	
Chrysene-d12	254113	28.738	235608	28.738	108	70 - 130	0.0000	+/-0.50	
<b>Blank (B302596-BLK1 )</b>			Lab File ID: F22S068008.D			Analyzed: 03/09/22 12:22			
Phenanthrene-d10	542419	20.794	465703	20.794	116	70 - 130	0.0000	+/-0.50	
Chrysene-d12	275127	28.738	235608	28.738	117	70 - 130	0.0000	+/-0.50	
<b>LT-CR-IAS-501 (22C0096-01 )</b>			Lab File ID: F22S068011.D			Analyzed: 03/09/22 14:14			
Phenanthrene-d10	545406	20.794	465703	20.794	117	70 - 130	0.0000	+/-0.50	
Chrysene-d12	271843	28.738	235608	28.738	115	70 - 130	0.0000	+/-0.50	
<b>Calibration Check (S069013-CCV2 )</b>			Lab File ID: F22S068012.D			Analyzed: 03/09/22 14:56			
Phenanthrene-d10	523552	20.801	523552	20.801	100	70 - 130	0.0000	+/-0.50	*
Chrysene-d12	259696	28.746	259696	28.746	100	70 - 130	0.0000	+/-0.50	

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**CONTINUING CALIBRATION CHECK**
**TO-10A/EPA 680 Modified**
**S069013-CCV1**

COMPOUND	TYPE	CONC. (ng/mL)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Monochlorobiphenyls	A	100	107	0.5482959	0.5893912		7.5	20
Dichlorobiphenyls	A	100	93.2	0.6834238	0.636994		-6.8	20
Trichlorobiphenyls	A	100	94.9	0.5008325	0.4751687		-5.1	20
Tetrachlorobiphenyls	A	200	204	0.3017248	0.3076263		2.0	20
Pentachlorobiphenyls	A	200	193	0.2527718	0.2438182		-3.5	20
Hexachlorobiphenyls	A	200	224	0.41969	0.4690259		11.8	20
Heptachlorobiphenyls	A	300	331	0.3941325	0.4346114		10.3	20
Octachlorobiphenyls	A	300	331	0.3052513	0.3364257		10.2	20
Nonachlorobiphenyls	A	500	549	0.2606746	0.2864238		9.9	20
Decachlorobiphenyl	A	500	528	0.2156198	0.2278042		5.7	20

# Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

\* Values outside of QC limits

39 Spruce Street \* East Longmeadow, MA 01028 \* FAX 413/525-6405 \* TEL. 413/525-2332

**CONTINUING CALIBRATION CHECK**
**TO-10A/EPA 680 Modified**
**S069013-CCV2**

COMPOUND	TYPE	CONC. (ng/mL)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Monochlorobiphenyls	A	100	125	0.5482959	0.6879689		25.5	20 *
Dichlorobiphenyls	A	100	95.4	0.6834238	0.6521559		-4.6	20
Trichlorobiphenyls	A	100	94.3	0.5008325	0.4724578		-5.7	20
Tetrachlorobiphenyls	A	200	199	0.3017248	0.3004059		-0.4	20
Pentachlorobiphenyls	A	200	192	0.2527718	0.2424365		-4.1	20
Hexachlorobiphenyls	A	200	226	0.41969	0.4734261		12.8	20
Heptachlorobiphenyls	A	300	330	0.3941325	0.4341374		10.2	20
Octachlorobiphenyls	A	300	336	0.3052513	0.3416254		11.9	20
Nonachlorobiphenyls	A	500	559	0.2606746	0.2916824		11.9	20
Decachlorobiphenyl	A	500	540	0.2156198	0.2327433		7.9	20

# Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

\* Values outside of QC limits

39 Spruce Street \* East Longmeadow, MA 01028 \* FAX 413/525-6405 \* TEL. 413/525-2332

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

Con-Test, a Pace Environmental Laboratory, operates under the following certifications and accreditations:

Code	Description	Number	Expires
AIHA	AIHA-LAP, LLC - ISO17025:2017	100033	03/1/2024
MA	Massachusetts DEP	M-MA100	06/30/2022
CT	Connecticut Department of Public Health	PH-0165	12/31/2022
NY	New York State Department of Health	10899 NELAP	04/1/2022
NH-S	New Hampshire Environmental Lab	2516 NELAP	02/5/2023
RI	Rhode Island Department of Health	LAO00373	12/30/2022
NC	North Carolina Div. of Water Quality	652	12/31/2022
NJ	New Jersey DEP	MA007 NELAP	06/30/2022
FL	Florida Department of Health	E871027 NELAP	06/30/2022
VT	Vermont Department of Health Lead Laboratory	LL720741	07/30/2022
ME	State of Maine	MA00100	06/9/2023
VA	Commonwealth of Virginia	460217	12/14/2022
NH-P	New Hampshire Environmental Lab	2557 NELAP	09/6/2022
VT-DW	Vermont Department of Health Drinking Water	VT-255716	06/12/2022
NC-DW	North Carolina Department of Health	25703	07/31/2022
PA	Commonwealth of Pennsylvania DEP	68-05812	06/30/2022
MI	Dept. of Env, Great Lakes, and Energy	9100	09/6/2022





I Have Not Confirmed Sample Container  
Numbers With Lab Staff Before  
Relinquishing Over  
Samples \_\_\_\_\_



**con-test®**  
ANALYTICAL LABORATORY

Doc# 278 Rev 6 2017

**Air Media Sample Receipt Checklist - (Rejection Criteria Listing - Using Acceptance Policy) Any False  
Statement will be brought to the attention of the Client - State True or False**

Client Woodward Clyde Curran

Received By RLT Date 2/28/22 Time 1835  
How were the samples received? In Cooler T On Ice T No Ice \_\_\_\_\_  
In Box \_\_\_\_\_ Ambient \_\_\_\_\_ Melted Ice \_\_\_\_\_  
Were samples within Temperature Compliance? 2-6°C T By Gun # 3 Actual Temp - 22  
By Blank # \_\_\_\_\_ Actual Temp - \_\_\_\_\_  
Was Custody Seal Intact? UA Were Samples Tampered with? UA  
Was COC Relinquished? T Does Chain Agree With Samples? T  
Are there any loose caps/valves on any samples? F  
Is COC in ink/ Legible? T  
Did COC Include all Client T Analysis T Sampler Name T  
Pertinent Information? Project T ID's T Collection Dates/Times T  
Are Sample Labels filled out and legible? T  
Are there Rushes? F Who was notified? \_\_\_\_\_  
Samples are received within holding time? T  
Proper Media Used? T Individually Certified Cans? UA  
Are there Trip Blanks? F Is there enough Volume? T

Containers	#	Size	Regulator	Duration	Accessories		
Summa Cans					Nut/Ferrule		IC Train
Tedlar Bags					Tubing		
TO-17 Tubes					T-Connector		Shipping Charges
Radiello					Syringe		
Pufs/TO-11s	<u>1</u>				Tedlar		

Can #s					Reg #s				
Unused Media					Pufs/TO-17's				
					<u>022232-02</u>				

Comments:

August 16, 2022

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

Project Location: Amherst, MA  
Client Job Number:  
Project Number: 225695  
Laboratory Work Order Number: 22G1751

Enclosed are results of analyses for samples as received by the laboratory on July 29, 2022. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Meghan E. Kelley  
Project Manager

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39 Spruce Street \* East Longmeadow, MA 01028 \* FAX 413/525-6405 \* TEL. 413/525-2332Woodard & Curran - Andover, MA  
40 Shattuck Road., Suite 110  
Andover, MA 01810  
ATTN: George Franklin

REPORT DATE: 8/16/2022

PURCHASE ORDER NUMBER:

PROJECT NUMBER: 225695

**ANALYTICAL SUMMARY**

---

WORK ORDER NUMBER: 22G1751

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

PROJECT LOCATION: Amherst, MA

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
DL-23E-IAS-300	22G1751-01	Indoor air		- TO-10A/EPA 680 Modified	
DL-13E-IAS-301	22G1751-02	Indoor air		TO-10A/EPA 680 Modified	
DL-19E-IAS-302	22G1751-03	Indoor air		TO-10A/EPA 680 Modified	
DL-04E-IAS-303	22G1751-04	Indoor air		TO-10A/EPA 680 Modified	
Unused PUF # 072222-03	22G1751-05	Air		-	
Unused PUF # 072222-05	22G1751-06	Air		-	

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39 Spruce Street \* East Longmeadow, MA 01028 \* FAX 413/525-6405 \* TEL. 413/525-2332

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**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:**

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**B**

Analyte is found in the associated laboratory blank as well as in the sample.

**Analyte & Samples(s) Qualified:****Tetrachlorobiphenyls**

22G1751-01[DL-23E-IAS-300], 22G1751-02[DL-13E-IAS-301], 22G1751-03[DL-19E-IAS-302], 22G1751-04[DL-04E-IAS-303], B314234-BLK1, B314234-BS1, B314234-BSD1

**Total Polychlorinated biphenyls**

22G1751-01[DL-23E-IAS-300], 22G1751-02[DL-13E-IAS-301], 22G1751-03[DL-19E-IAS-302], 22G1751-04[DL-04E-IAS-303], B314234-BLK1

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**B-07**

Data is not affected by elevated level in laboratory blank since sample result is >10x level found in the blank.

**Analyte & Samples(s) Qualified:****Tetrachlorobiphenyls**

22G1751-01[DL-23E-IAS-300], 22G1751-02[DL-13E-IAS-301], 22G1751-03[DL-19E-IAS-302], 22G1751-04[DL-04E-IAS-303]

**Total Polychlorinated biphenyls**

22G1751-01[DL-23E-IAS-300], 22G1751-02[DL-13E-IAS-301], 22G1751-03[DL-19E-IAS-302], 22G1751-04[DL-04E-IAS-303]

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**V-35**

Initial calibration verification (ICV) did not meet method specifications and was biased on the high side for this compound. Reported result is estimated.

**Analyte & Samples(s) Qualified:****Monochlorobiphenyls**

22G1751-01[DL-23E-IAS-300], 22G1751-02[DL-13E-IAS-301], 22G1751-03[DL-19E-IAS-302], 22G1751-04[DL-04E-IAS-303], B314234-BLK1, B314234-BS1, B314234-BSD1, S075371-CCV1, S075371-CCV2

The results of analyses reported only relate to samples submitted to Con-Test, a Pace 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.



Lisa A. Worthington  
Technical Representative

39 Spruce Street \* East Longmeadow, MA 01028 \* FAX 413/525-6405 \* TEL. 413/525-2332

**ANALYTICAL RESULTS**

Project Location: Amherst, MA  
 Date Received: 7/29/2022  
**Field Sample #: DL-23E-IAS-300**  
**Sample ID: 22G1751-01**  
 Sample Matrix: Indoor air  
 Sampled: 7/27/2022 14:58

Sample Description/Location:  
 Sub Description/Location:  
  
 Flow Controller ID:  
 Sample Type:  
 Air Volume L: 958.3

**Work Order: 22G1751**
**TO-10A/EPA 680 Modified**

Analyte	Total µg		Flag/Qual	ug/m3		Dilution	Date/Time		Analyst
	Results	RL		Results	RL		Analyzed		
Monochlorobiphenyls	0.051	0.0010	V-35	0.053	0.001	1	8/15/22	14:57	CLA
Dichlorobiphenyls	0.045	0.0010		0.047	0.001	1	8/15/22	14:57	CLA
Trichlorobiphenyls	0.12	0.0020		0.12	0.0021	1	8/15/22	14:57	CLA
Tetrachlorobiphenyls	0.22	0.0020	B-07, B	0.22	0.0021	1	8/15/22	14:57	CLA
Pentachlorobiphenyls	0.18	0.0020		0.19	0.0021	1	8/15/22	14:57	CLA
Hexachlorobiphenyls	0.058	0.0020		0.060	0.0021	1	8/15/22	14:57	CLA
Heptachlorobiphenyls	0.013	0.0030		0.013	0.0031	1	8/15/22	14:57	CLA
Octachlorobiphenyls	ND	0.0030		ND	0.0031	1	8/15/22	14:57	CLA
Nonachlorobiphenyls	ND	0.0050		ND	0.0052	1	8/15/22	14:57	CLA
Decachlorobiphenyl	ND	0.0050		ND	0.0052	1	8/15/22	14:57	CLA
Total Polychlorinated biphenyls	0.68		B-07, B	0.71		1	8/15/22	14:57	CLA
Surrogates	% Recovery			% REC Limits					
Tetrachloro-m-xylene	109			50-125			8/15/22	14:57	

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**ANALYTICAL RESULTS**

Project Location: Amherst, MA  
 Date Received: 7/29/2022  
**Field Sample #: DL-13E-IAS-301**  
**Sample ID: 22G1751-02**  
 Sample Matrix: Indoor air  
 Sampled: 7/27/2022 15:12

Sample Description/Location:  
 Sub Description/Location:  
  
 Flow Controller ID:  
 Sample Type:  
 Air Volume L: 983.6

**Work Order: 22G1751**
**TO-10A/EPA 680 Modified**

Analyte	Total µg		Flag/Qual	ug/m3		Dilution	Date/Time		
	Results	RL		Results	RL		Analyzed	Analyst	
Monochlorobiphenyls	0.019	0.0010	V-35	0.020	0.001	1	8/15/22	15:35	CLA
Dichlorobiphenyls	0.026	0.0010		0.026	0.001	1	8/15/22	15:35	CLA
Trichlorobiphenyls	0.066	0.0020		0.067	0.002	1	8/15/22	15:35	CLA
Tetrachlorobiphenyls	0.19	0.0020	B-07, B	0.19	0.002	1	8/15/22	15:35	CLA
Pentachlorobiphenyls	0.20	0.0020		0.20	0.002	1	8/15/22	15:35	CLA
Hexachlorobiphenyls	0.063	0.0020		0.064	0.002	1	8/15/22	15:35	CLA
Heptachlorobiphenyls	0.012	0.0030		0.012	0.0031	1	8/15/22	15:35	CLA
Octachlorobiphenyls	ND	0.0030		ND	0.0031	1	8/15/22	15:35	CLA
Nonachlorobiphenyls	ND	0.0050		ND	0.0051	1	8/15/22	15:35	CLA
Decachlorobiphenyl	ND	0.0050		ND	0.0051	1	8/15/22	15:35	CLA
Total Polychlorinated biphenyls	0.57		B-07, B	0.58		1	8/15/22	15:35	CLA

Surrogates	% Recovery	% REC Limits	
Tetrachloro-m-xylene	127*	50-125	8/15/22 15:35



39 Spruce Street \* East Longmeadow, MA 01028 \* FAX 413/525-6405 \* TEL. 413/525-2332

**ANALYTICAL RESULTS**

Project Location: Amherst, MA  
 Date Received: 7/29/2022  
**Field Sample #: DL-19E-IAS-302**  
**Sample ID: 22G1751-03**  
 Sample Matrix: Indoor air  
 Sampled: 7/27/2022 15:19

Sample Description/Location:  
 Sub Description/Location:

**Work Order: 22G1751**

Flow Controller ID:  
 Sample Type:  
 Air Volume L: 967.2

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

Analyte	Total µg		Flag/Qual	ug/m3		Dilution	Date/Time		Analyst
	Results	RL		Results	RL		Analyzed		
Monochlorobiphenyls	0.052	0.0010	V-35	0.054	0.001	1	8/15/22	16:12	CLA
Dichlorobiphenyls	0.056	0.0010	B-07, B	0.058	0.001	1	8/15/22	16:12	CLA
Trichlorobiphenyls	0.15	0.0020		0.15	0.0021	1	8/15/22	16:12	CLA
Tetrachlorobiphenyls	0.26	0.0020		0.27	0.0021	1	8/15/22	16:12	CLA
Pentachlorobiphenyls	0.24	0.0020		0.25	0.0021	1	8/15/22	16:12	CLA
Hexachlorobiphenyls	0.064	0.0020		0.066	0.0021	1	8/15/22	16:12	CLA
Heptachlorobiphenyls	0.010	0.0030		0.010	0.0031	1	8/15/22	16:12	CLA
Octachlorobiphenyls	ND	0.0030		ND	0.0031	1	8/15/22	16:12	CLA
Nonachlorobiphenyls	ND	0.0050		ND	0.0052	1	8/15/22	16:12	CLA
Decachlorobiphenyl	ND	0.0050		ND	0.0052	1	8/15/22	16:12	CLA
Total Polychlorinated biphenyls	0.84		B-07, B	0.86		1	8/15/22	16:12	CLA

Surrogates	% Recovery	% REC Limits	
Tetrachloro-m-xylene	118	50-125	8/15/22 16:12

39 Spruce Street \* East Longmeadow, MA 01028 \* FAX 413/525-6405 \* TEL. 413/525-2332

**ANALYTICAL RESULTS**

Project Location: Amherst, MA  
 Date Received: 7/29/2022  
**Field Sample #: DL-04E-IAS-303**  
**Sample ID: 22G1751-04**  
 Sample Matrix: Indoor air  
 Sampled: 7/27/2022 15:25

Sample Description/Location:  
 Sub Description/Location:

**Work Order: 22G1751**

Flow Controller ID:  
 Sample Type:  
 Air Volume L: 920.9

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

Analyte	Total µg		Flag/Qual	ug/m3		Dilution	Date/Time		Analyst
	Results	RL		Results	RL		Analyzed		
Monochlorobiphenyls	0.028	0.0010	V-35	0.030	0.0011	1	8/15/22	16:50	CLA
Dichlorobiphenyls	0.033	0.0010	B-07, B	0.036	0.0011	1	8/15/22	16:50	CLA
Trichlorobiphenyls	0.061	0.0020		0.067	0.0022	1	8/15/22	16:50	CLA
Tetrachlorobiphenyls	0.15	0.0020		0.16	0.0022	1	8/15/22	16:50	CLA
Pentachlorobiphenyls	0.16	0.0020		0.18	0.0022	1	8/15/22	16:50	CLA
Hexachlorobiphenyls	0.073	0.0020		0.079	0.0022	1	8/15/22	16:50	CLA
Heptachlorobiphenyls	0.018	0.0030		0.020	0.0033	1	8/15/22	16:50	CLA
Octachlorobiphenyls	ND	0.0030		ND	0.0033	1	8/15/22	16:50	CLA
Nonachlorobiphenyls	ND	0.0050		ND	0.0054	1	8/15/22	16:50	CLA
Decachlorobiphenyl	ND	0.0050		ND	0.0054	1	8/15/22	16:50	CLA
Total Polychlorinated biphenyls	0.53		B-07, B	0.57		1	8/15/22	16:50	CLA

Surrogates	% Recovery	% REC Limits	
Tetrachloro-m-xylene	94.2	50-125	8/15/22 16:50

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**QUALITY CONTROL**
**PCB Homologues by GC/MS (Air) 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 B314234 - SW-846 3540C											
Blank (B314234-BLK1)					Prepared: 08/01/22 Analyzed: 08/15/22						
Monochlorobiphenyls	ND	0.0010									V-35
Dichlorobiphenyls	ND	0.0010									
Trichlorobiphenyls	ND	0.0020									
Tetrachlorobiphenyls	0.0060	0.0020									B
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	0.0060										B
Surrogate: Tetrachloro-m-xylene	0.228				0.200		114	50-125			
LCS (B314234-BS1)					Prepared: 08/01/22 Analyzed: 08/15/22						
Monochlorobiphenyls	0.16	0.0010			0.200		79.9	40-140			V-35
Dichlorobiphenyls	0.17	0.0010			0.200		83.5	40-140			
Trichlorobiphenyls	0.17	0.0020			0.200		84.1	40-140			
Tetrachlorobiphenyls	0.33	0.0020			0.400		83.6	40-140			B
Pentachlorobiphenyls	0.32	0.0020			0.400		81.1	40-140			
Hexachlorobiphenyls	0.35	0.0020			0.400		87.4	40-140			
Heptachlorobiphenyls	0.52	0.0030			0.600		86.1	40-140			
Octachlorobiphenyls	0.50	0.0030			0.600		82.6	40-140			
Nonachlorobiphenyls	0.91	0.0050			1.00		90.9	40-140			
Decachlorobiphenyl	0.82	0.0050			1.00		81.8	40-140			
Surrogate: Tetrachloro-m-xylene	0.203				0.200		101	50-125			
LCS Dup (B314234-BSD1)					Prepared: 08/01/22 Analyzed: 08/15/22						
Monochlorobiphenyls	0.19	0.0010			0.200		93.8	40-140	16.1	50	V-35
Dichlorobiphenyls	0.20	0.0010			0.200		99.0	40-140	17.0	50	
Trichlorobiphenyls	0.20	0.0020			0.200		99.0	40-140	16.3	50	
Tetrachlorobiphenyls	0.40	0.0020			0.400		98.8	40-140	16.7	50	B
Pentachlorobiphenyls	0.38	0.0020			0.400		95.1	40-140	15.9	50	
Hexachlorobiphenyls	0.38	0.0020			0.400		96.1	40-140	9.46	50	
Heptachlorobiphenyls	0.57	0.0030			0.600		95.2	40-140	9.98	50	
Octachlorobiphenyls	0.55	0.0030			0.600		91.1	40-140	9.84	50	
Nonachlorobiphenyls	1.0	0.0050			1.00		100	40-140	9.67	50	
Decachlorobiphenyl	0.90	0.0050			1.00		90.3	40-140	9.82	50	
Surrogate: Tetrachloro-m-xylene	0.241				0.200		120	50-125			

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39 Spruce Street \* East Longmeadow, MA 01028 \* FAX 413/525-6405 \* TEL. 413/525-2332**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
ND	Not Detected
RL	Reporting Limit is at the level of quantitation (LOQ)
DL	Detection Limit is the lower limit of detection determined by the MDL study
MCL	Maximum Contaminant 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.
B	Analyte is found in the associated laboratory blank as well as in the sample.
B-07	Data is not affected by elevated level in laboratory blank since sample result is >10x level found in the blank.
V-35	Initial calibration verification (ICV) did not meet method specifications and was biased on the high side for this compound. Reported result is estimated.

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**INTERNAL STANDARD AREA AND RT SUMMARY**
**TO-10A/EPA 680 Modified**

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
<b>Blank (B314234-BLK1 )</b>									
Lab File ID: F22S227005.D					Analyzed: 08/15/22 13:05				
Phenanthrene-d10	589076	20.377	616613	20.377	96	70 - 130	0.0000	+/-0.50	
Chrysene-d12	304685	28.179	329857	28.179	92	70 - 130	0.0000	+/-0.50	
<b>LCS (B314234-BS1 )</b>									
Lab File ID: F22S227006.D					Analyzed: 08/15/22 13:42				
Phenanthrene-d10	616045	20.377	616613	20.377	100	70 - 130	0.0000	+/-0.50	
Chrysene-d12	329874	28.179	329857	28.179	100	70 - 130	0.0000	+/-0.50	
<b>LCS Dup (B314234-BSD1 )</b>									
Lab File ID: F22S227007.D					Analyzed: 08/15/22 14:20				
Phenanthrene-d10	543980	20.377	616613	20.377	88	70 - 130	0.0000	+/-0.50	
Chrysene-d12	309863	28.171	329857	28.179	94	70 - 130	-0.0080	+/-0.50	
<b>DL-23E-IAS-300 (22G1751-01 )</b>									
Lab File ID: F22S227008.D					Analyzed: 08/15/22 14:57				
Phenanthrene-d10	575792	20.377	616613	20.377	93	70 - 130	0.0000	+/-0.50	
Chrysene-d12	334046	28.178	329857	28.179	101	70 - 130	-0.0010	+/-0.50	
<b>DL-13E-IAS-301 (22G1751-02 )</b>									
Lab File ID: F22S227009.D					Analyzed: 08/15/22 15:35				
Phenanthrene-d10	522847	20.377	616613	20.377	85	70 - 130	0.0000	+/-0.50	
Chrysene-d12	299875	28.171	329857	28.179	91	70 - 130	-0.0080	+/-0.50	
<b>DL-19E-IAS-302 (22G1751-03 )</b>									
Lab File ID: F22S227010.D					Analyzed: 08/15/22 16:12				
Phenanthrene-d10	574224	20.377	616613	20.377	93	70 - 130	0.0000	+/-0.50	
Chrysene-d12	348370	28.179	329857	28.179	106	70 - 130	0.0000	+/-0.50	
<b>DL-04E-IAS-303 (22G1751-04 )</b>									
Lab File ID: F22S227011.D					Analyzed: 08/15/22 16:50				
Phenanthrene-d10	574710	20.376	616613	20.377	93	70 - 130	-0.0010	+/-0.50	
Chrysene-d12	317181	28.178	329857	28.179	96	70 - 130	-0.0010	+/-0.50	

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CONTINUING CALIBRATION CHECK

COMPOUND	TYPE			RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)

# Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

\* Values outside of QC limits

39 Spruce Street \* East Longmeadow, MA 01028 \* FAX 413/525-6405 \* TEL. 413/525-2332

**CERTIFICATIONS**
**Certified Analyses included in this Report**

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

Con-Test, a Pace Environmental Laboratory, operates under the following certifications and accreditations:

Code	Description	Number	Expires
AIHA	AIHA-LAP, LLC - ISO 17025:2017	100033	03/1/2024
MA	Massachusetts DEP	M-MA100	06/30/2023
CT	Connecticut Department of Public Health	PH-0165	12/31/2022
NY	New York State Department of Health	10899 NELAP	04/1/2023
NH	New Hampshire Environmental Lab	2516 NELAP	02/5/2023
RI	Rhode Island Department of Health	LAO00373	12/30/2022
NC	North Carolina Div. of Water Quality	652	12/31/2022
NJ	New Jersey DEP	MA007 NELAP	06/30/2023
FL	Florida Department of Health	E871027 NELAP	06/30/2023
VT	Vermont Department of Health Lead Laboratory	LL720741	07/30/2023
VT-DW	Vermont Department of Health Drinking Water	VT-255716	06/12/2023
ME	State of Maine	MA00100	06/9/2023
VA	Commonwealth of Virginia	460217	12/14/2022
NH-P	New Hampshire Environmental Lab	2557 NELAP	09/6/2022
NC-DW	North Carolina Department of Health and Human Services	25703	07/31/2023
PA	Commonwealth of Pennsylvania DEP	68-05812	06/30/2023
MI	Dept. of Env, Great Lakes, and Energy	9100	09/6/2022





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



Doc# 278 Rev 7 July 2022

**Air Media Sample Receipt Checklist - (Rejection Criteria Listing - Using Acceptance Policy) Any False Statement will be brought to the attention of the Client - State True or False**

Client Woodward & Curran

Received By [Signature] Date 7/29/22 Time 1635

How Were the samples received? In Cooler T On Ice T No Ice

In Box  Ambient  Melted Ice

Were samples within Temperature Compliance? Within 2-6°C T By Gun # 5 Actual Temp -2.0

By Blank #  Actual Temp

Was Custody Seal In tact? na Were Samples Tampered with? na

Was COC Relinquished? T Does Chain Agree With Samples? T

Are there any loose caps/valves on any samples? F

Is COC in ink/ Legible? T Were samples received within holding time? T

Did COC Include all Pertinent Information? Client? T Analysis? T Sampler Name? T

Project? T ID's? T Collection Dates/Times? T

Are Sample Labels filled out and legible? T

Are there Rushes? F Who was notified?

Samples are received within holding time? T

Proper Media Used? T Individually Certified Cans? F

Are there Trip Blanks? F Is there enough Volume? T

Containers:	#	Size	Regulator	Duration	Accessories:		
Summa Cans					Nut/Ferrule		IC Train
Tedlar Bags					Tubing		
TO-17 Tubes					T-Connector		Shipping Charges
Radiello					Syringe		
Pufs/TO-11s	<u>6</u>	<u>LV</u>			Tedlar		

Can #'s					Reg #'s				
Unused Media	<u>072222-03</u>				Pufs/TO-17's				
	<u>I -05</u>				<u>072222-01</u>				
					<u>I -04</u>				
					<u>I -01</u>				
					<u>I -02</u>				

Comments:

October 7, 2022

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

Project Location: Amherst, MA  
Client Job Number:  
Project Number: 0225695  
Laboratory Work Order Number: 22I1677

Enclosed are results of analyses for samples as received by the laboratory on September 27, 2022. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Meghan E. Kelley  
Project Manager

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39 Spruce Street \* East Longmeadow, MA 01028 \* FAX 413/525-6405 \* TEL. 413/525-2332

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

REPORT DATE: 10/7/2022

PURCHASE ORDER NUMBER:

PROJECT NUMBER: 0225695

**ANALYTICAL SUMMARY**

WORK ORDER NUMBER: 2211677

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

PROJECT LOCATION: Amherst, MA

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
LT-BR-VMP-601	2211677-01	Wipe		SW-846 8082A	
LT-BR-VMP-602	2211677-02	Wipe		SW-846 8082A	
LT-MR-VMP-603	2211677-03	Wipe		SW-846 8082A	
LT-MR-VMP-604	2211677-04	Wipe		SW-846 8082A	
LT-MR-VMP-605	2211677-05	Wipe		SW-846 8082A	
LT-MR-VMP-606	2211677-06	Wipe		SW-846 8082A	
LT-CR-VMP-607	2211677-07	Wipe		SW-846 8082A	
LT-CR-VMP-608	2211677-08	Wipe		SW-846 8082A	
LT-MR-VMP-609	2211677-09	Wipe		SW-846 8082A	
LT-MR-VMP-610	2211677-10	Wipe		SW-846 8082A	
LT-MR-VMP-611	2211677-11	Wipe		SW-846 8082A	
LT-MR-VMP-612	2211677-12	Wipe		SW-846 8082A	
LT-MR-VMP-613	2211677-13	Wipe		SW-846 8082A	
LT-MR-VMP-614	2211677-14	Wipe		SW-846 8082A	
LT-MR-VMP-615	2211677-15	Wipe		SW-846 8082A	
LT-BR-VMP-616	2211677-16	Wipe		SW-846 8082A	
LT-BR-VMP-617	2211677-17	Wipe		SW-846 8082A	
LT-MR-VMP-618	2211677-18	Wipe		SW-846 8082A	
LT-BR-VMP-619	2211677-19	Wipe		SW-846 8082A	
LT-BR-VMP-620	2211677-20	Wipe		SW-846 8082A	

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**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:**

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**P-02**

Sample RPD between primary and confirmatory analysis exceeded 40%. Per EPA method 8000, the lower value was reported due to obvious chromatographic interference on the column with the higher result.

**Analyte & Samples(s) Qualified:****Aroclor-1254**2211677-12[LT-MR-VMP-612]

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**S-20**

Surrogate recovery is outside of control limits. Sample media does not allow for re-extraction.

**Analyte & Samples(s) Qualified:****Tetrachloro-m-xylene**

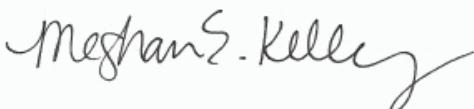
2211677-05[LT-MR-VMP-605]

**Tetrachloro-m-xylene [2C]**

2211677-05[LT-MR-VMP-605]

The results of analyses reported only relate to samples submitted to Con-Test, a Pace 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.



Meghan E. Kelley  
Reporting Specialist

39 Spruce Street \* East Longmeadow, MA 01028 \* FAX 413/525-6405 \* TEL. 413/525-2332

Project Location: Amherst, MA

Sample Description:

Work Order: 2211677

Date Received: 9/27/2022

Field Sample #: LT-BR-VMP-601

Sampled: 9/26/2022 11:13

Sample ID: 2211677-01

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	10/2/22	10/6/22 17:28	TG
Aroclor-1221 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/6/22 17:28	TG
Aroclor-1232 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/6/22 17:28	TG
Aroclor-1242 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/6/22 17:28	TG
Aroclor-1248 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/6/22 17:28	TG
Aroclor-1254 [2]	0.24	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/6/22 17:28	TG
Aroclor-1260 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/6/22 17:28	TG
Aroclor-1262 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/6/22 17:28	TG
Aroclor-1268 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/6/22 17:28	TG
Surrogates	% Recovery	Recovery Limits	Flag/Qual						
Decachlorobiphenyl [1]	122	30-150							
Decachlorobiphenyl [2]	101	30-150							
Tetrachloro-m-xylene [1]	89.2	30-150							
Tetrachloro-m-xylene [2]	83.3	30-150							

39 Spruce Street \* East Longmeadow, MA 01028 \* FAX 413/525-6405 \* TEL. 413/525-2332

Project Location: Amherst, MA

Sample Description:

Work Order: 2211677

Date Received: 9/27/2022

Field Sample #: LT-BR-VMP-602

Sampled: 9/26/2022 11:16

Sample ID: 2211677-02

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	10/2/22	10/6/22 17:46	TG
Aroclor-1221 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/6/22 17:46	TG
Aroclor-1232 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/6/22 17:46	TG
Aroclor-1242 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/6/22 17:46	TG
Aroclor-1248 [1]	0.46	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/6/22 17:46	TG
Aroclor-1254 [1]	0.74	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/6/22 17:46	TG
Aroclor-1260 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/6/22 17:46	TG
Aroclor-1262 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/6/22 17:46	TG
Aroclor-1268 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/6/22 17:46	TG
Surrogates	% Recovery	Recovery Limits	Flag/Qual						
Decachlorobiphenyl [1]	126	30-150							
Decachlorobiphenyl [2]	102	30-150							
Tetrachloro-m-xylene [1]	92.6	30-150							
Tetrachloro-m-xylene [2]	88.6	30-150							



39 Spruce Street \* East Longmeadow, MA 01028 \* FAX 413/525-6405 \* TEL. 413/525-2332

Project Location: Amherst, MA

Sample Description:

Work Order: 2211677

Date Received: 9/27/2022

Field Sample #: LT-MR-VMP-603

Sampled: 9/26/2022 11:36

Sample ID: 2211677-03

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	10/2/22	10/6/22 18:03	TG
Aroclor-1221 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/6/22 18:03	TG
Aroclor-1232 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/6/22 18:03	TG
Aroclor-1242 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/6/22 18:03	TG
Aroclor-1248 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/6/22 18:03	TG
Aroclor-1254 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/6/22 18:03	TG
Aroclor-1260 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/6/22 18:03	TG
Aroclor-1262 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/6/22 18:03	TG
Aroclor-1268 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/6/22 18:03	TG
Surrogates	% Recovery	Recovery Limits	Flag/Qual						
Decachlorobiphenyl [1]	127	30-150						10/6/22 18:03	
Decachlorobiphenyl [2]	102	30-150						10/6/22 18:03	
Tetrachloro-m-xylene [1]	95.1	30-150						10/6/22 18:03	
Tetrachloro-m-xylene [2]	91.9	30-150						10/6/22 18:03	

39 Spruce Street \* East Longmeadow, MA 01028 \* FAX 413/525-6405 \* TEL. 413/525-2332

Project Location: Amherst, MA

Sample Description:

Work Order: 2211677

Date Received: 9/27/2022

Field Sample #: LT-MR-VMP-604

Sampled: 9/26/2022 11:45

Sample ID: 2211677-04

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	10/2/22	10/6/22 18:21	TG
Aroclor-1221 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/6/22 18:21	TG
Aroclor-1232 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/6/22 18:21	TG
Aroclor-1242 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/6/22 18:21	TG
Aroclor-1248 [1]	0.52	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/6/22 18:21	TG
Aroclor-1254 [1]	0.62	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/6/22 18:21	TG
Aroclor-1260 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/6/22 18:21	TG
Aroclor-1262 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/6/22 18:21	TG
Aroclor-1268 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/6/22 18:21	TG
Surrogates	% Recovery	Recovery Limits	Flag/Qual						
Decachlorobiphenyl [1]	126	30-150						10/6/22 18:21	
Decachlorobiphenyl [2]	101	30-150						10/6/22 18:21	
Tetrachloro-m-xylene [1]	93.7	30-150						10/6/22 18:21	
Tetrachloro-m-xylene [2]	89.7	30-150						10/6/22 18:21	

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Project Location: Amherst, MA

Sample Description:

Work Order: 2211677

Date Received: 9/27/2022

Field Sample #: LT-MR-VMP-605

Sampled: 9/26/2022 11:52

Sample ID: 2211677-05

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	10/2/22	10/6/22 18:39	TG
Aroclor-1221 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/6/22 18:39	TG
Aroclor-1232 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/6/22 18:39	TG
Aroclor-1242 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/6/22 18:39	TG
Aroclor-1248 [1]	0.69	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/6/22 18:39	TG
Aroclor-1254 [1]	1.1	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/6/22 18:39	TG
Aroclor-1260 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/6/22 18:39	TG
Aroclor-1262 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/6/22 18:39	TG
Aroclor-1268 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/6/22 18:39	TG
Surrogates	% Recovery		Recovery Limits		Flag/Qual				
Decachlorobiphenyl [1]	96.9		30-150				10/6/22 18:39		
Decachlorobiphenyl [2]	80.0		30-150				10/6/22 18:39		
<b>Tetrachloro-m-xylene [1]</b>	<b>26.5</b>	*	30-150		S-20		10/6/22 18:39		
<b>Tetrachloro-m-xylene [2]</b>	<b>25.8</b>	*	30-150		S-20		10/6/22 18:39		

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Project Location: Amherst, MA

Sample Description:

Work Order: 2211677

Date Received: 9/27/2022

Field Sample #: LT-MR-VMP-606

Sampled: 9/26/2022 12:07

Sample ID: 2211677-06

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	10/2/22	10/6/22 18:56	TG
Aroclor-1221 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/6/22 18:56	TG
Aroclor-1232 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/6/22 18:56	TG
Aroclor-1242 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/6/22 18:56	TG
Aroclor-1248 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/6/22 18:56	TG
Aroclor-1254 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/6/22 18:56	TG
Aroclor-1260 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/6/22 18:56	TG
Aroclor-1262 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/6/22 18:56	TG
Aroclor-1268 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/6/22 18:56	TG
Surrogates	% Recovery	Recovery Limits	Flag/Qual						
Decachlorobiphenyl [1]	129	30-150							
Decachlorobiphenyl [2]	104	30-150							
Tetrachloro-m-xylene [1]	98.6	30-150							
Tetrachloro-m-xylene [2]	97.0	30-150							

39 Spruce Street \* East Longmeadow, MA 01028 \* FAX 413/525-6405 \* TEL. 413/525-2332

Project Location: Amherst, MA

Sample Description:

Work Order: 2211677

Date Received: 9/27/2022

Field Sample #: LT-CR-VMP-607

Sampled: 9/26/2022 12:32

Sample ID: 2211677-07

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	10/2/22	10/6/22 19:14	TG
Aroclor-1221 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/6/22 19:14	TG
Aroclor-1232 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/6/22 19:14	TG
Aroclor-1242 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/6/22 19:14	TG
Aroclor-1248 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/6/22 19:14	TG
Aroclor-1254 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/6/22 19:14	TG
Aroclor-1260 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/6/22 19:14	TG
Aroclor-1262 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/6/22 19:14	TG
Aroclor-1268 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/6/22 19:14	TG
Surrogates	% Recovery	Recovery Limits	Flag/Qual						
Decachlorobiphenyl [1]	129	30-150							
Decachlorobiphenyl [2]	103	30-150							
Tetrachloro-m-xylene [1]	98.1	30-150							
Tetrachloro-m-xylene [2]	94.2	30-150							

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Project Location: Amherst, MA

Sample Description:

Work Order: 2211677

Date Received: 9/27/2022

Field Sample #: LT-CR-VMP-608

Sampled: 9/26/2022 12:36

Sample ID: 2211677-08

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	10/2/22	10/6/22 19:32	TG
Aroclor-1221 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/6/22 19:32	TG
Aroclor-1232 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/6/22 19:32	TG
Aroclor-1242 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/6/22 19:32	TG
Aroclor-1248 [1]	0.45	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/6/22 19:32	TG
Aroclor-1254 [2]	0.92	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/6/22 19:32	TG
Aroclor-1260 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/6/22 19:32	TG
Aroclor-1262 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/6/22 19:32	TG
Aroclor-1268 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/6/22 19:32	TG
Surrogates	% Recovery	Recovery Limits	Flag/Qual						
Decachlorobiphenyl [1]	122	30-150						10/6/22 19:32	
Decachlorobiphenyl [2]	97.1	30-150						10/6/22 19:32	
Tetrachloro-m-xylene [1]	63.1	30-150						10/6/22 19:32	
Tetrachloro-m-xylene [2]	59.5	30-150						10/6/22 19:32	

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Project Location: Amherst, MA

Sample Description:

Work Order: 2211677

Date Received: 9/27/2022

Field Sample #: LT-MR-VMP-609

Sampled: 9/26/2022 12:52

Sample ID: 2211677-09

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	10/2/22	10/6/22 19:49	TG
Aroclor-1221 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/6/22 19:49	TG
Aroclor-1232 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/6/22 19:49	TG
Aroclor-1242 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/6/22 19:49	TG
Aroclor-1248 [1]	0.68	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/6/22 19:49	TG
Aroclor-1254 [1]	3.1	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/6/22 19:49	TG
Aroclor-1260 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/6/22 19:49	TG
Aroclor-1262 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/6/22 19:49	TG
Aroclor-1268 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/6/22 19:49	TG
Surrogates	% Recovery	Recovery Limits	Flag/Qual						
Decachlorobiphenyl [1]	131	30-150						10/6/22 19:49	
Decachlorobiphenyl [2]	104	30-150						10/6/22 19:49	
Tetrachloro-m-xylene [1]	99.4	30-150						10/6/22 19:49	
Tetrachloro-m-xylene [2]	96.5	30-150						10/6/22 19:49	

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Project Location: Amherst, MA

Sample Description:

Work Order: 2211677

Date Received: 9/27/2022

Field Sample #: LT-MR-VMP-610

Sampled: 9/26/2022 12:57

Sample ID: 2211677-10

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	10/2/22	10/6/22 22:16	TG
Aroclor-1221 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/6/22 22:16	TG
Aroclor-1232 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/6/22 22:16	TG
Aroclor-1242 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/6/22 22:16	TG
Aroclor-1248 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/6/22 22:16	TG
Aroclor-1254 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/6/22 22:16	TG
Aroclor-1260 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/6/22 22:16	TG
Aroclor-1262 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/6/22 22:16	TG
Aroclor-1268 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/6/22 22:16	TG
Surrogates	% Recovery	Recovery Limits	Flag/Qual						
Decachlorobiphenyl [1]	128	30-150							
Decachlorobiphenyl [2]	104	30-150							
Tetrachloro-m-xylene [1]	99.2	30-150							
Tetrachloro-m-xylene [2]	96.3	30-150							



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Project Location: Amherst, MA

Sample Description:

Work Order: 2211677

Date Received: 9/27/2022

Field Sample #: LT-MR-VMP-611

Sampled: 9/26/2022 13:10

Sample ID: 2211677-11

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	10/2/22	10/6/22 22:34	TG
Aroclor-1221 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/6/22 22:34	TG
Aroclor-1232 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/6/22 22:34	TG
Aroclor-1242 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/6/22 22:34	TG
Aroclor-1248 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/6/22 22:34	TG
Aroclor-1254 [1]	1.1	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/6/22 22:34	TG
Aroclor-1260 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/6/22 22:34	TG
Aroclor-1262 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/6/22 22:34	TG
Aroclor-1268 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/6/22 22:34	TG
Surrogates	% Recovery	Recovery Limits	Flag/Qual						
Decachlorobiphenyl [1]	131	30-150							
Decachlorobiphenyl [2]	106	30-150							
Tetrachloro-m-xylene [1]	103	30-150							
Tetrachloro-m-xylene [2]	102	30-150							

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Project Location: Amherst, MA

Sample Description:

Work Order: 2211677

Date Received: 9/27/2022

Field Sample #: LT-MR-VMP-612

Sampled: 9/26/2022 13:38

Sample ID: 2211677-12

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	10/2/22	10/6/22 22:51	TG
Aroclor-1221 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/6/22 22:51	TG
Aroclor-1232 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/6/22 22:51	TG
Aroclor-1242 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/6/22 22:51	TG
Aroclor-1248 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/6/22 22:51	TG
Aroclor-1254 [1]	1.2	0.20	µg/Wipe	1	P-02	SW-846 8082A	10/2/22	10/6/22 22:51	TG
Aroclor-1260 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/6/22 22:51	TG
Aroclor-1262 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/6/22 22:51	TG
Aroclor-1268 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/6/22 22:51	TG
Surrogates	% Recovery	Recovery Limits	Flag/Qual						
Decachlorobiphenyl [1]	126	30-150							
Decachlorobiphenyl [2]	103	30-150							
Tetrachloro-m-xylene [1]	99.5	30-150							
Tetrachloro-m-xylene [2]	97.3	30-150							

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Project Location: Amherst, MA

Sample Description:

Work Order: 2211677

Date Received: 9/27/2022

Field Sample #: LT-MR-VMP-613

Sampled: 9/26/2022 13:44

Sample ID: 2211677-13

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	10/2/22	10/6/22 23:09	TG
Aroclor-1221 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/6/22 23:09	TG
Aroclor-1232 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/6/22 23:09	TG
Aroclor-1242 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/6/22 23:09	TG
Aroclor-1248 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/6/22 23:09	TG
Aroclor-1254 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/6/22 23:09	TG
Aroclor-1260 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/6/22 23:09	TG
Aroclor-1262 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/6/22 23:09	TG
Aroclor-1268 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/6/22 23:09	TG
Surrogates	% Recovery	Recovery Limits	Flag/Qual						
Decachlorobiphenyl [1]	121	30-150						10/6/22 23:09	
Decachlorobiphenyl [2]	99.0	30-150						10/6/22 23:09	
Tetrachloro-m-xylene [1]	101	30-150						10/6/22 23:09	
Tetrachloro-m-xylene [2]	98.6	30-150						10/6/22 23:09	

39 Spruce Street \* East Longmeadow, MA 01028 \* FAX 413/525-6405 \* TEL. 413/525-2332

Project Location: Amherst, MA

Sample Description:

Work Order: 2211677

Date Received: 9/27/2022

Field Sample #: LT-MR-VMP-614

Sampled: 9/26/2022 13:50

Sample ID: 2211677-14

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	10/2/22	10/6/22 23:27	TG
Aroclor-1221 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/6/22 23:27	TG
Aroclor-1232 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/6/22 23:27	TG
Aroclor-1242 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/6/22 23:27	TG
Aroclor-1248 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/6/22 23:27	TG
Aroclor-1254 [1]	2.0	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/6/22 23:27	TG
Aroclor-1260 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/6/22 23:27	TG
Aroclor-1262 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/6/22 23:27	TG
Aroclor-1268 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/6/22 23:27	TG
Surrogates	% Recovery	Recovery Limits	Flag/Qual						
Decachlorobiphenyl [1]	129	30-150							
Decachlorobiphenyl [2]	105	30-150							
Tetrachloro-m-xylene [1]	103	30-150							
Tetrachloro-m-xylene [2]	102	30-150							

39 Spruce Street \* East Longmeadow, MA 01028 \* FAX 413/525-6405 \* TEL. 413/525-2332

Project Location: Amherst, MA

Sample Description:

Work Order: 2211677

Date Received: 9/27/2022

Field Sample #: LT-MR-VMP-615

Sampled: 9/26/2022 14:00

Sample ID: 2211677-15

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	10/2/22	10/6/22 23:44	TG
Aroclor-1221 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/6/22 23:44	TG
Aroclor-1232 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/6/22 23:44	TG
Aroclor-1242 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/6/22 23:44	TG
Aroclor-1248 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/6/22 23:44	TG
Aroclor-1254 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/6/22 23:44	TG
Aroclor-1260 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/6/22 23:44	TG
Aroclor-1262 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/6/22 23:44	TG
Aroclor-1268 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/6/22 23:44	TG
Surrogates	% Recovery	Recovery Limits	Flag/Qual						
Decachlorobiphenyl [1]	127	30-150							
Decachlorobiphenyl [2]	104	30-150							
Tetrachloro-m-xylene [1]	104	30-150							
Tetrachloro-m-xylene [2]	103	30-150							

39 Spruce Street \* East Longmeadow, MA 01028 \* FAX 413/525-6405 \* TEL. 413/525-2332

Project Location: Amherst, MA

Sample Description:

Work Order: 2211677

Date Received: 9/27/2022

Field Sample #: LT-BR-VMP-616

Sampled: 9/26/2022 14:06

Sample ID: 2211677-16

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	10/2/22	10/7/22 0:02	TG
Aroclor-1221 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/7/22 0:02	TG
Aroclor-1232 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/7/22 0:02	TG
Aroclor-1242 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/7/22 0:02	TG
Aroclor-1248 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/7/22 0:02	TG
Aroclor-1254 [1]	2.2	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/7/22 0:02	TG
Aroclor-1260 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/7/22 0:02	TG
Aroclor-1262 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/7/22 0:02	TG
Aroclor-1268 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/7/22 0:02	TG
Surrogates	% Recovery	Recovery Limits	Flag/Qual						
Decachlorobiphenyl [1]	125	30-150							
Decachlorobiphenyl [2]	102	30-150							
Tetrachloro-m-xylene [1]	100	30-150							
Tetrachloro-m-xylene [2]	97.7	30-150							

39 Spruce Street \* East Longmeadow, MA 01028 \* FAX 413/525-6405 \* TEL. 413/525-2332

Project Location: Amherst, MA

Sample Description:

Work Order: 2211677

Date Received: 9/27/2022

Field Sample #: LT-BR-VMP-617

Sampled: 9/26/2022 14:15

Sample ID: 2211677-17

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	10/2/22	10/7/22 0:20	TG
Aroclor-1221 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/7/22 0:20	TG
Aroclor-1232 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/7/22 0:20	TG
Aroclor-1242 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/7/22 0:20	TG
Aroclor-1248 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/7/22 0:20	TG
Aroclor-1254 [1]	0.20	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/7/22 0:20	TG
Aroclor-1260 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/7/22 0:20	TG
Aroclor-1262 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/7/22 0:20	TG
Aroclor-1268 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/7/22 0:20	TG
Surrogates	% Recovery	Recovery Limits	Flag/Qual						
Decachlorobiphenyl [1]	127	30-150							
Decachlorobiphenyl [2]	104	30-150							
Tetrachloro-m-xylene [1]	104	30-150							
Tetrachloro-m-xylene [2]	102	30-150							

39 Spruce Street \* East Longmeadow, MA 01028 \* FAX 413/525-6405 \* TEL. 413/525-2332

Project Location: Amherst, MA

Sample Description:

Work Order: 2211677

Date Received: 9/27/2022

Field Sample #: LT-MR-VMP-618

Sampled: 9/26/2022 14:28

Sample ID: 2211677-18

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	10/2/22	10/7/22 0:37	TG
Aroclor-1221 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/7/22 0:37	TG
Aroclor-1232 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/7/22 0:37	TG
Aroclor-1242 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/7/22 0:37	TG
Aroclor-1248 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/7/22 0:37	TG
Aroclor-1254 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/7/22 0:37	TG
Aroclor-1260 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/7/22 0:37	TG
Aroclor-1262 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/7/22 0:37	TG
Aroclor-1268 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/7/22 0:37	TG
Surrogates	% Recovery	Recovery Limits	Flag/Qual						
Decachlorobiphenyl [1]	79.1	30-150						10/7/22 0:37	
Decachlorobiphenyl [2]	66.2	30-150						10/7/22 0:37	
Tetrachloro-m-xylene [1]	31.4	30-150						10/7/22 0:37	
Tetrachloro-m-xylene [2]	31.3	30-150						10/7/22 0:37	



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Project Location: Amherst, MA

Sample Description:

Work Order: 2211677

Date Received: 9/27/2022

Field Sample #: LT-BR-VMP-619

Sampled: 9/26/2022 14:35

Sample ID: 2211677-19

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	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/7/22 0:55	TG
Aroclor-1221 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/7/22 0:55	TG
Aroclor-1232 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/7/22 0:55	TG
Aroclor-1242 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/7/22 0:55	TG
Aroclor-1248 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/7/22 0:55	TG
Aroclor-1254 [1]	0.27	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/7/22 0:55	TG
Aroclor-1260 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/7/22 0:55	TG
Aroclor-1262 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/7/22 0:55	TG
Aroclor-1268 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/7/22 0:55	TG
Surrogates	% Recovery	Recovery Limits	Flag/Qual						
Decachlorobiphenyl [1]	125	30-150							
Decachlorobiphenyl [2]	102	30-150							
Tetrachloro-m-xylene [1]	101	30-150							
Tetrachloro-m-xylene [2]	98.2	30-150							

39 Spruce Street \* East Longmeadow, MA 01028 \* FAX 413/525-6405 \* TEL. 413/525-2332

Project Location: Amherst, MA

Sample Description:

Work Order: 2211677

Date Received: 9/27/2022

Field Sample #: LT-BR-VMP-620

Sampled: 9/26/2022 14:42

Sample ID: 2211677-20

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	10/2/22	10/7/22 1:13	TG
Aroclor-1221 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/7/22 1:13	TG
Aroclor-1232 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/7/22 1:13	TG
Aroclor-1242 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/7/22 1:13	TG
Aroclor-1248 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/7/22 1:13	TG
Aroclor-1254 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/7/22 1:13	TG
Aroclor-1260 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/7/22 1:13	TG
Aroclor-1262 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/7/22 1:13	TG
Aroclor-1268 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/7/22 1:13	TG
Surrogates	% Recovery	Recovery Limits	Flag/Qual						
Decachlorobiphenyl [1]	126	30-150						10/7/22 1:13	
Decachlorobiphenyl [2]	103	30-150						10/7/22 1:13	
Tetrachloro-m-xylene [1]	101	30-150						10/7/22 1:13	
Tetrachloro-m-xylene [2]	98.8	30-150						10/7/22 1:13	

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39 Spruce Street \* East Longmeadow, MA 01028 \* FAX 413/525-6405 \* TEL. 413/525-2332**Sample Extraction Data**

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

Lab Number [Field ID]	Batch	Initial [Wipe]	Final [mL]	Date
22I1677-01 [LT-BR-VMP-601]	B318611	1.00	10.0	10/02/22
22I1677-02 [LT-BR-VMP-602]	B318611	1.00	10.0	10/02/22
22I1677-03 [LT-MR-VMP-603]	B318611	1.00	10.0	10/02/22
22I1677-04 [LT-MR-VMP-604]	B318611	1.00	10.0	10/02/22
22I1677-05 [LT-MR-VMP-605]	B318611	1.00	10.0	10/02/22
22I1677-06 [LT-MR-VMP-606]	B318611	1.00	10.0	10/02/22
22I1677-07 [LT-CR-VMP-607]	B318611	1.00	10.0	10/02/22
22I1677-08 [LT-CR-VMP-608]	B318611	1.00	10.0	10/02/22
22I1677-09 [LT-MR-VMP-609]	B318611	1.00	10.0	10/02/22
22I1677-10 [LT-MR-VMP-610]	B318611	1.00	10.0	10/02/22
22I1677-11 [LT-MR-VMP-611]	B318611	1.00	10.0	10/02/22
22I1677-12 [LT-MR-VMP-612]	B318611	1.00	10.0	10/02/22
22I1677-13 [LT-MR-VMP-613]	B318611	1.00	10.0	10/02/22
22I1677-14 [LT-MR-VMP-614]	B318611	1.00	10.0	10/02/22
22I1677-15 [LT-MR-VMP-615]	B318611	1.00	10.0	10/02/22
22I1677-16 [LT-BR-VMP-616]	B318611	1.00	10.0	10/02/22
22I1677-17 [LT-BR-VMP-617]	B318611	1.00	10.0	10/02/22
22I1677-18 [LT-MR-VMP-618]	B318611	1.00	10.0	10/02/22
22I1677-19 [LT-BR-VMP-619]	B318611	1.00	10.0	10/02/22
22I1677-20 [LT-BR-VMP-620]	B318611	1.00	10.0	10/02/22

39 Spruce Street \* East Longmeadow, MA 01028 \* FAX 413/525-6405 \* TEL. 413/525-2332

**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 B318611 - SW-846 3540C**
**Blank (B318611-BLK1)**

Prepared: 10/02/22 Analyzed: 10/06/22

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	2.64		µg/Wipe	2.00		132	30-150			
Surrogate: Decachlorobiphenyl [2C]	2.15		µg/Wipe	2.00		107	30-150			
Surrogate: Tetrachloro-m-xylene	2.00		µg/Wipe	2.00		100	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	1.97		µg/Wipe	2.00		98.5	30-150			

**LCS (B318611-BS1)**

Prepared: 10/02/22 Analyzed: 10/06/22

Aroclor-1016	0.41	0.20	µg/Wipe	0.500		81.2	40-140			
Aroclor-1016 [2C]	0.43	0.20	µg/Wipe	0.500		87.0	40-140			
Aroclor-1260	0.40	0.20	µg/Wipe	0.500		80.1	40-140			
Aroclor-1260 [2C]	0.38	0.20	µg/Wipe	0.500		75.2	40-140			
Surrogate: Decachlorobiphenyl	2.52		µg/Wipe	2.00		126	30-150			
Surrogate: Decachlorobiphenyl [2C]	2.07		µg/Wipe	2.00		104	30-150			
Surrogate: Tetrachloro-m-xylene	1.95		µg/Wipe	2.00		97.7	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	1.92		µg/Wipe	2.00		95.9	30-150			

**LCS Dup (B318611-BSD1)**

Prepared: 10/02/22 Analyzed: 10/06/22

Aroclor-1016	0.43	0.20	µg/Wipe	0.500		85.5	40-140	5.08	30	
Aroclor-1016 [2C]	0.46	0.20	µg/Wipe	0.500		92.6	40-140	6.29	30	
Aroclor-1260	0.41	0.20	µg/Wipe	0.500		82.7	40-140	3.17	30	
Aroclor-1260 [2C]	0.39	0.20	µg/Wipe	0.500		77.7	40-140	3.25	30	
Surrogate: Decachlorobiphenyl	2.48		µg/Wipe	2.00		124	30-150			
Surrogate: Decachlorobiphenyl [2C]	2.06		µg/Wipe	2.00		103	30-150			
Surrogate: Tetrachloro-m-xylene	1.91		µg/Wipe	2.00		95.6	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	1.89		µg/Wipe	2.00		94.4	30-150			

39 Spruce Street \* East Longmeadow, MA 01028 \* FAX 413/525-6405 \* TEL. 413/525-2332

## IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

*SW-846 8082A*

LT-BR-VMP-601

Lab Sample ID: 22I1677-01      Date(s) Analyzed: 10/06/2022    10/06/2022  
 Instrument ID (1): ECD4      Instrument ID (2): ECD4  
 GC Column (1):                      ID:                      (mm)      GC Column (2):                      ID:                      (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%RPD
			FROM	TO		
Aroclor-1254	1	0.000	0.000	0.000	0.24	
	2	0.000	0.000	0.000	0.24	0.0

39 Spruce Street \* East Longmeadow, MA 01028 \* FAX 413/525-6405 \* TEL. 413/525-2332

## IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

*SW-846 8082A*

**LT-BR-VMP-602**

Lab Sample ID: 2211677-02      Date(s) Analyzed: 10/06/2022    10/06/2022  
 Instrument ID (1): ECD4      Instrument ID (2): ECD4  
 GC Column (1):                      ID:                      (mm)      GC Column (2):                      ID:                      (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%RPD
			FROM	TO		
Aroclor-1248	1	0.000	0.000	0.000	0.46	
	2	0.000	0.000	0.000	0.39	16.5
Aroclor-1254	1	0.000	0.000	0.000	0.74	
	2	0.000	0.000	0.000	0.72	2.7

39 Spruce Street \* East Longmeadow, MA 01028 \* FAX 413/525-6405 \* TEL. 413/525-2332

## IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

*SW-846 8082A*

**LT-MR-VMP-604**

Lab Sample ID: 2211677-04      Date(s) Analyzed: 10/06/2022    10/06/2022  
 Instrument ID (1): ECD4      Instrument ID (2): ECD4  
 GC Column (1):                      ID:                      (mm)      GC Column (2):                      ID:                      (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%RPD
			FROM	TO		
Aroclor-1248	1	0.000	0.000	0.000	0.52	
	2	0.000	0.000	0.000	0.42	21.3
Aroclor-1254	1	0.000	0.000	0.000	0.62	
	2	0.000	0.000	0.000	0.61	1.6

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## IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

*SW-846 8082A*

**LT-MR-VMP-605**

Lab Sample ID: 2211677-05      Date(s) Analyzed: 10/06/2022    10/06/2022  
 Instrument ID (1): ECD4      Instrument ID (2): ECD4  
 GC Column (1):                      ID:                      (mm)      GC Column (2):                      ID:                      (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%RPD
			FROM	TO		
Aroclor-1248	1	0.000	0.000	0.000	0.69	
	2	0.000	0.000	0.000	0.55	22.6
Aroclor-1254	1	0.000	0.000	0.000	1.1	
	2	0.000	0.000	0.000	1.0	9.5



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## IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

*SW-846 8082A*

**LT-CR-VMP-608**

Lab Sample ID: 2211677-08      Date(s) Analyzed: 10/06/2022    10/06/2022  
 Instrument ID (1): ECD4      Instrument ID (2): ECD4  
 GC Column (1):                      ID:                      (mm)      GC Column (2):                      ID:                      (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%RPD
			FROM	TO		
Aroclor-1248	1	0.000	0.000	0.000	0.45	
	2	0.000	0.000	0.000	0.33	30.8
Aroclor-1254	1	0.000	0.000	0.000	0.89	
	2	0.000	0.000	0.000	0.92	3.3

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## IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

*SW-846 8082A*

**LT-MR-VMP-609**

Lab Sample ID: 2211677-09      Date(s) Analyzed: 10/06/2022    10/06/2022  
 Instrument ID (1): ECD4      Instrument ID (2): ECD4  
 GC Column (1):                      ID:                      (mm)      GC Column (2):                      ID:                      (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%RPD
			FROM	TO		
Aroclor-1248	1	0.000	0.000	0.000	0.68	
	2	0.000	0.000	0.000	0.55	21.1
Aroclor-1254	1	0.000	0.000	0.000	3.1	
	2	0.000	0.000	0.000	2.9	6.7

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**IDENTIFICATION SUMMARY  
FOR SINGLE COMPONENT ANALYTES****LT-MR-VMP-611***SW-846 8082A*

Lab Sample ID: 22I1677-11 Date(s) Analyzed: 10/06/2022 10/06/2022  
Instrument ID (1): ECD4 Instrument ID (2): ECD4  
GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%RPD
			FROM	TO		
Aroclor-1254	1	0.000	0.000	0.000	1.1	
	2	0.000	0.000	0.000	1.0	9.5

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**IDENTIFICATION SUMMARY  
FOR SINGLE COMPONENT ANALYTES****LT-MR-VMP-612***SW-846 8082A*

Lab Sample ID: 2211677-12 Date(s) Analyzed: 10/06/2022 10/06/2022  
Instrument ID (1): ECD4 Instrument ID (2): ECD4  
GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%RPD
			FROM	TO		
Aroclor-1254	1	0.000	0.000	0.000	1.2	
	2	0.000	0.000	0.000	2.4	66.7

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**IDENTIFICATION SUMMARY  
FOR SINGLE COMPONENT ANALYTES****LT-MR-VMP-614***SW-846 8082A*

Lab Sample ID: 22I1677-14 Date(s) Analyzed: 10/06/2022 10/06/2022  
Instrument ID (1): ECD4 Instrument ID (2): ECD4  
GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%RPD
			FROM	TO		
Aroclor-1254	1	0.000	0.000	0.000	2.0	
	2	0.000	0.000	0.000	1.7	16.2

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**IDENTIFICATION SUMMARY  
FOR SINGLE COMPONENT ANALYTES****LT-BR-VMP-616***SW-846 8082A*

Lab Sample ID: 2211677-16 Date(s) Analyzed: 10/07/2022 10/07/2022  
Instrument ID (1): ECD4 Instrument ID (2): ECD4  
GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%RPD
			FROM	TO		
Aroclor-1254	1	0.000	0.000	0.000	2.2	
	2	0.000	0.000	0.000	2.2	0.0

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**IDENTIFICATION SUMMARY  
FOR SINGLE COMPONENT ANALYTES****LT-BR-VMP-619***SW-846 8082A*

Lab Sample ID: 2211677-19 Date(s) Analyzed: 10/07/2022 10/07/2022  
Instrument ID (1): ECD4 Instrument ID (2): ECD4  
GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%RPD
			FROM	TO		
Aroclor-1254	1	0.000	0.000	0.000	0.27	
	2	0.000	0.000	0.000	0.23	16.0

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## IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

*SW-846 8082A*

LCS

Lab Sample ID: B318611-BS1      Date(s) Analyzed: 10/06/2022    10/06/2022  
 Instrument ID (1): ECD4      Instrument ID (2): ECD4  
 GC Column (1):                      ID:                      (mm)      GC Column (2):                      ID:                      (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%RPD
			FROM	TO		
Aroclor-1016	1	0.000	0.000	0.000	0.41	
	2	0.000	0.000	0.000	0.43	4.8
Aroclor-1260	1	0.000	0.000	0.000	0.40	
	2	0.000	0.000	0.000	0.38	5.1



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## IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

*SW-846 8082A*

LCS Dup

Lab Sample ID: B318611-BSD1      Date(s) Analyzed: 10/06/2022    10/06/2022  
 Instrument ID (1): ECD4      Instrument ID (2): ECD4  
 GC Column (1):                      ID:                      (mm)      GC Column (2):                      ID:                      (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%RPD
			FROM	TO		
Aroclor-1016	1	0.000	0.000	0.000	0.43	
	2	0.000	0.000	0.000	0.46	6.7
Aroclor-1260	1	0.000	0.000	0.000	0.41	
	2	0.000	0.000	0.000	0.39	5.0

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*	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
ND	Not Detected
RL	Reporting Limit is at the level of quantitation (LOQ)
DL	Detection Limit is the lower limit of detection determined by the MDL study
MCL	Maximum Contaminant 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.
P-02	Sample RPD between primary and confirmatory analysis exceeded 40%. Per EPA method 8000, the lower value was reported due to obvious chromatographic interference on the column with the higher result.
S-20	Surrogate recovery is outside of control limits. Sample media does not allow for re-extraction.

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**CERTIFICATIONS**
**Certified Analyses included in this Report**

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

Con-Test, a Pace Environmental Laboratory, operates under the following certifications and accreditations:

Code	Description	Number	Expires
AIHA	AIHA-LAP, LLC - ISO 17025:2017	100033	03/1/2024
MA	Massachusetts DEP	M-MA100	06/30/2023
CT	Connecticut Department of Public Health	PH-0165	12/31/2022
NY	New York State Department of Health	10899 NELAP	04/1/2023
NH	New Hampshire Environmental Lab	2516 NELAP	02/5/2023
RI	Rhode Island Department of Health	LAO00373	12/30/2022
NC	North Carolina Div. of Water Quality	652	12/31/2022
NJ	New Jersey DEP	MA007 NELAP	06/30/2023
FL	Florida Department of Health	E871027 NELAP	06/30/2023
VT	Vermont Department of Health Lead Laboratory	LL720741	07/30/2023
VT-DW	Vermont Department of Health Drinking Water	VT-255716	06/12/2023
ME	State of Maine	MA00100	06/9/2023
VA	Commonwealth of Virginia	460217	12/14/2022
NH-P	New Hampshire Environmental Lab	2557 NELAP	09/6/2023
NC-DW	North Carolina Department of Health and Human Services	25703	07/31/2023
PA	Commonwealth of Pennsylvania DEP	68-05812	06/30/2023
MI	Dept. of Env, Great Lakes, and Energy	9100	06/30/2023
NB-CT	Connecticut Department of Public Health	PH-0554	09/30/2023
NB-NJ	New Jersey DEP	NY015 NELAP	06/30/2023
NB-NY	New York State Department of Health	10142 NELAP	04/1/2023

2211677

Doc # 381 Rev 5\_07/13/2021

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39 Spruce Street  
East Longmeadow, MA 01028

CHAIN OF CUSTODY RECORD

## ANALYSIS REQUESTED

Requested Turnaround Time: 7-Day ☐ 10-Day ☐ 15-Day ☐ 30-Day ☐ 60-Day ☐ 90-Day ☐ 120-Day ☐ 180-Day ☐ 240-Day ☐ 360-Day ☐ 480-Day ☐ 720-Day ☐ 1080-Day ☐ 1440-Day ☐ 1800-Day ☐ 2160-Day ☐ 2520-Day ☐ 2880-Day ☐ 3240-Day ☐ 3600-Day ☐ 3960-Day ☐ 4320-Day ☐ 4680-Day ☐ 5040-Day ☐ 5400-Day ☐ 5760-Day ☐ 6120-Day ☐ 6480-Day ☐ 6840-Day ☐ 7200-Day ☐ 7560-Day ☐ 7920-Day ☐ 8280-Day ☐ 8640-Day ☐ 9000-Day ☐ 9360-Day ☐ 9720-Day ☐ 10080-Day ☐ 10440-Day ☐ 10800-Day ☐ 11160-Day ☐ 11520-Day ☐ 11880-Day ☐ 12240-Day ☐ 12600-Day ☐ 12960-Day ☐ 13320-Day ☐ 13680-Day ☐ 14040-Day ☐ 14400-Day ☐ 14760-Day ☐ 15120-Day ☐ 15480-Day ☐ 15840-Day ☐ 16200-Day ☐ 16560-Day ☐ 16920-Day ☐ 17280-Day ☐ 17640-Day ☐ 18000-Day ☐ 18360-Day ☐ 18720-Day ☐ 19080-Day ☐ 19440-Day ☐ 19800-Day ☐ 20160-Day ☐ 20520-Day ☐ 20880-Day ☐ 21240-Day ☐ 21600-Day ☐ 21960-Day ☐ 22320-Day ☐ 22680-Day ☐ 23040-Day ☐ 23400-Day ☐ 23760-Day ☐ 24120-Day ☐ 24480-Day ☐ 24840-Day ☐ 25200-Day ☐ 25560-Day ☐ 25920-Day ☐ 26280-Day ☐ 26640-Day ☐ 27000-Day ☐ 27360-Day ☐ 27720-Day ☐ 28080-Day ☐ 28440-Day ☐ 28800-Day ☐ 29160-Day ☐ 29520-Day ☐ 29880-Day ☐ 30240-Day ☐ 30600-Day ☐ 30960-Day ☐ 31320-Day ☐ 31680-Day ☐ 32040-Day ☐ 32400-Day ☐ 32760-Day ☐ 33120-Day ☐ 33480-Day ☐ 33840-Day ☐ 34200-Day ☐ 34560-Day ☐ 34920-Day ☐ 35280-Day ☐ 35640-Day ☐ 36000-Day ☐ 36360-Day ☐ 36720-Day ☐ 37080-Day ☐ 37440-Day ☐ 37800-Day ☐ 38160-Day ☐ 38520-Day ☐ 38880-Day ☐ 39240-Day ☐ 39600-Day ☐ 39960-Day ☐ 40320-Day ☐ 40680-Day ☐ 41040-Day ☐ 41400-Day ☐ 41760-Day ☐ 42120-Day ☐ 42480-Day ☐ 42840-Day ☐ 43200-Day ☐ 43560-Day ☐ 43920-Day ☐ 44280-Day ☐ 44640-Day ☐ 45000-Day ☐ 45360-Day ☐ 45720-Day ☐ 46080-Day ☐ 46440-Day ☐ 46800-Day ☐ 47160-Day ☐ 47520-Day ☐ 47880-Day ☐ 48240-Day ☐ 48600-Day ☐ 48960-Day ☐ 49320-Day ☐ 49680-Day ☐ 50040-Day ☐ 50400-Day ☐ 50760-Day ☐ 51120-Day ☐ 51480-Day ☐ 51840-Day ☐ 52200-Day ☐ 52560-Day ☐ 52920-Day ☐ 53280-Day ☐ 53640-Day ☐ 54000-Day ☐ 54360-Day ☐ 54720-Day ☐ 55080-Day ☐ 55440-Day ☐ 55800-Day ☐ 56160-Day ☐ 56520-Day ☐ 56880-Day ☐ 57240-Day ☐ 57600-Day ☐ 57960-Day ☐ 58320-Day ☐ 58680-Day ☐ 59040-Day ☐ 59400-Day ☐ 59760-Day ☐ 60120-Day ☐ 60480-Day ☐ 60840-Day ☐ 61200-Day ☐ 61560-Day ☐ 61920-Day ☐ 62280-Day ☐ 62640-Day ☐ 63000-Day ☐ 63360-Day ☐ 63720-Day ☐ 64080-Day ☐ 64440-Day ☐ 64800-Day ☐ 65160-Day ☐ 65520-Day ☐ 65880-Day ☐ 66240-Day ☐ 66600-Day ☐ 66960-Day ☐ 67320-Day ☐ 67680-Day ☐ 68040-Day ☐ 68400-Day ☐ 68760-Day ☐ 69120-Day ☐ 69480-Day ☐ 69840-Day ☐ 70200-Day ☐ 70560-Day ☐ 70920-Day ☐ 71280-Day ☐ 71640-Day ☐ 72000-Day ☐ 72360-Day ☐ 72720-Day ☐ 73080-Day ☐ 73440-Day ☐ 73800-Day ☐ 74160-Day ☐ 74520-Day ☐ 74880-Day ☐ 75240-Day ☐ 75600-Day ☐ 75960-Day ☐ 76320-Day ☐ 76680-Day ☐ 77040-Day ☐ 77400-Day ☐ 77760-Day ☐ 78120-Day ☐ 78480-Day ☐ 78840-Day ☐ 79200-Day ☐ 79560-Day ☐ 79920-Day ☐ 80280-Day ☐ 80640-Day ☐ 81000-Day ☐ 81360-Day ☐ 81720-Day ☐ 82080-Day ☐ 82440-Day ☐ 82800-Day ☐ 83160-Day ☐ 83520-Day ☐ 83880-Day ☐ 84240-Day ☐ 84600-Day ☐ 84960-Day ☐ 85320-Day ☐ 85680-Day ☐ 86040-Day ☐ 86400-Day ☐ 86760-Day ☐ 87120-Day ☐ 87480-Day ☐ 87840-Day ☐ 88200-Day ☐ 88560-Day ☐ 88920-Day ☐ 89280-Day ☐ 89640-Day ☐ 90000-Day ☐ 90360-Day ☐ 90720-Day ☐ 91080-Day ☐ 91440-Day ☐ 91800-Day ☐ 92160-Day ☐ 92520-Day ☐ 92880-Day ☐ 93240-Day ☐ 93600-Day ☐ 93960-Day ☐ 94320-Day ☐ 94680-Day ☐ 95040-Day ☐ 95400-Day ☐ 95760-Day ☐ 96120-Day ☐ 96480-Day ☐ 96840-Day ☐ 97200-Day ☐ 97560-Day ☐ 97920-Day ☐ 98280-Day ☐ 98640-Day ☐ 99000-Day ☐ 99360-Day ☐ 99720-Day ☐ 100080-Day ☐ 100440-Day ☐ 100800-Day ☐ 101160-Day ☐ 101520-Day ☐ 101880-Day ☐ 102240-Day ☐ 102600-Day ☐ 102960-Day ☐ 103320-Day ☐ 103680-Day ☐ 104040-Day ☐ 104400-Day ☐ 104760-Day ☐ 105120-Day ☐ 105480-Day ☐ 105840-Day ☐ 106200-Day ☐ 106560-Day ☐ 106920-Day ☐ 107280-Day ☐ 107640-Day ☐ 108000-Day ☐ 108360-Day ☐ 108720-Day ☐ 109080-Day ☐ 109440-Day ☐ 109800-Day ☐ 110160-Day ☐ 110520-Day ☐ 110880-Day ☐ 111240-Day ☐ 111600-Day ☐ 111960-Day ☐ 112320-Day ☐ 112680-Day ☐ 113040-Day ☐ 113400-Day ☐ 113760-Day ☐ 114120-Day ☐ 114480-Day ☐ 114840-Day ☐ 115200-Day ☐ 115560-Day ☐ 115920-Day ☐ 116280-Day ☐ 116640-Day ☐ 117000-Day ☐ 117360-Day ☐ 117720-Day ☐ 118080-Day ☐ 118440-Day ☐ 118800-Day ☐ 119160-Day ☐ 119520-Day ☐ 119880-Day ☐ 120240-Day ☐ 120600-Day ☐ 120960-Day ☐ 121320-Day ☐ 121680-Day ☐ 122040-Day ☐ 122400-Day ☐ 122760-Day ☐ 123120-Day ☐ 123480-Day ☐ 123840-Day ☐ 124200-Day ☐ 124560-Day ☐ 124920-Day ☐ 125280-Day ☐ 125640-Day ☐ 126000-Day ☐ 126360-Day ☐ 126720-Day ☐ 127080-Day ☐ 127440-Day ☐ 127800-Day ☐ 128160-Day ☐ 128520-Day ☐ 128880-Day ☐ 129240-Day ☐ 129600-Day ☐ 129960-Day ☐ 130320-Day ☐ 130680-Day ☐ 131040-Day ☐ 131400-Day ☐ 131760-Day ☐ 132120-Day ☐ 132480-Day ☐ 132840-Day ☐ 133200-Day ☐ 133560-Day ☐ 133920-Day ☐ 134280-Day ☐ 134640-Day ☐ 135000-Day ☐ 135360-Day ☐ 135720-Day ☐ 136080-Day ☐ 136440-Day ☐ 136800-Day ☐ 137160-Day ☐ 137520-Day ☐ 137880-Day ☐ 138240-Day ☐ 138600-Day ☐ 138960-Day ☐ 139320-Day ☐ 139680-Day ☐ 140040-Day ☐ 140400-Day ☐ 140760-Day ☐ 141120-Day ☐ 141480-Day ☐ 141840-Day ☐ 142200-Day ☐ 142560-Day ☐ 142920-Day ☐ 143280-Day ☐ 143640-Day ☐ 144000-Day ☐ 144360-Day ☐ 144720-Day ☐ 145080-Day ☐ 145440-Day ☐ 145800-Day ☐ 146160-Day ☐ 146520-Day ☐ 146880-Day ☐ 147240-Day ☐ 147600-Day ☐ 147960-Day ☐ 148320-Day ☐ 148680-Day ☐ 149040-Day ☐ 149400-Day ☐ 149760-Day ☐ 150120-Day ☐ 150480-Day ☐ 150840-Day ☐ 151200-Day ☐ 151560-Day ☐ 151920-Day ☐ 152280-Day ☐ 152640-Day ☐ 153000-Day ☐ 153360-Day ☐ 153720-Day ☐ 154080-Day ☐ 154440-Day ☐ 154800-Day ☐ 155160-Day ☐ 155520-Day ☐ 155880-Day ☐ 156240-Day ☐ 156600-Day ☐ 156960-Day ☐ 157320-Day ☐ 157680-Day ☐ 158040-Day ☐ 158400-Day ☐ 158760-Day ☐ 159120-Day ☐ 159480-Day ☐ 159840-Day ☐ 160200-Day ☐ 160560-Day ☐ 160920-Day ☐ 161280-Day ☐ 161640-Day ☐ 162000-Day ☐ 162360-Day ☐ 162720-Day ☐ 163080-Day ☐ 163440-Day ☐ 163800-Day ☐ 164160-Day ☐ 164520-Day ☐ 164880-Day ☐ 165240-Day ☐ 165600-Day ☐ 165960-Day ☐ 166320-Day ☐ 166680-Day ☐ 167040-Day ☐ 167400-Day ☐ 167760-Day ☐ 168120-Day ☐ 168480-Day ☐ 168840-Day ☐ 169200-Day ☐ 169560-Day ☐ 169920-Day ☐ 170280-Day ☐ 170640-Day ☐ 171000-Day ☐ 171360-Day ☐ 171720-Day ☐ 172080-Day ☐ 172440-Day ☐ 172800-Day ☐ 173160-Day ☐ 173520-Day ☐ 173880-Day ☐ 174240-Day ☐ 174600-Day ☐ 174960-Day ☐ 175320-Day ☐ 175680-Day ☐ 176040-Day ☐ 176400-Day ☐ 176760-Day ☐ 177120-Day ☐ 177480-Day ☐ 177840-Day ☐ 178200-Day ☐ 178560-Day ☐ 178920-Day ☐ 179280-Day ☐ 179640-Day ☐ 180000-Day ☐ 180360-Day ☐ 180720-Day ☐ 181080-Day ☐ 181440-Day ☐ 181800-Day ☐ 182160-Day ☐ 182520-Day ☐ 182880-Day ☐ 183240-Day ☐ 183600-Day ☐ 183960-Day ☐ 184320-Day ☐ 184680-Day ☐ 185040-Day ☐ 185400-Day ☐ 185760-Day ☐ 186120-Day ☐ 186480-Day ☐ 186840-Day ☐ 187200-Day ☐ 187560-Day ☐ 187920-Day ☐ 188280-Day ☐ 188640-Day ☐ 189000-Day ☐ 189360-Day ☐ 189720-Day ☐ 190080-Day ☐ 190440-Day ☐ 190800-Day ☐ 191160-Day ☐ 191520-Day ☐ 191880-Day ☐ 192240-Day ☐ 192600-Day ☐ 192960-Day ☐ 193320-Day ☐ 193680-Day ☐ 194040-Day ☐ 194400-Day ☐ 194760-Day ☐ 195120-Day ☐ 195480-Day ☐ 195840-Day ☐ 196200-Day ☐ 196560-Day ☐ 196920-Day ☐ 197280-Day ☐ 197640-Day ☐ 198000-Day ☐ 198360-Day ☐ 198720-Day ☐ 199080-Day ☐ 199440-Day ☐ 199800-Day ☐ 200160-Day ☐ 200520-Day ☐ 200880-Day ☐ 201240-Day ☐ 201600-Day ☐ 201960-Day ☐ 202320-Day ☐ 202680-Day ☐ 203040-Day ☐ 203400-Day ☐ 203760-Day ☐ 204120-Day ☐ 204480-Day ☐ 204840-Day ☐ 205200-Day ☐ 205560-Day ☐ 205920-Day ☐ 206280-Day ☐ 206640-Day ☐ 207000-Day ☐ 207360-Day ☐ 207720-Day ☐ 208080-Day ☐ 208440-Day ☐ 208800-Day ☐ 209160-Day ☐ 209520-Day ☐ 209880-Day ☐ 210240-Day ☐ 210600-Day ☐ 210960-Day ☐ 211320-Day ☐ 211680-Day ☐ 212040-Day ☐ 212400-Day ☐ 212760-Day ☐ 213120-Day ☐ 213480-Day ☐ 213840-Day ☐ 214200-Day ☐ 214560-Day ☐ 214920-Day ☐ 215280-Day ☐ 215640-Day ☐ 216000-Day ☐ 216360-Day ☐ 216720-Day ☐ 217080-Day ☐ 217440-Day ☐ 217800-Day ☐ 218160-Day ☐ 218520-Day ☐ 218880-Day ☐ 219240-Day ☐ 219600-Day ☐ 219960-Day ☐ 220320-Day ☐ 220680-Day ☐ 221040-Day ☐ 221400-Day ☐ 221760-Day ☐ 222120-Day ☐ 222480-Day ☐ 222840-Day ☐ 223200-Day ☐ 223560-Day ☐ 223920-Day ☐ 224280-Day ☐ 224640-Day ☐ 225000-Day ☐ 225360-Day ☐ 225720-Day ☐ 226080-Day ☐ 226440-Day ☐ 226800-Day ☐ 227160-Day ☐ 227520-Day ☐ 227880-Day ☐ 228240-Day ☐ 228600-Day ☐ 228960-Day ☐ 229320-Day ☐ 229680-Day ☐ 230040-Day ☐ 230400-Day ☐ 230760-Day ☐ 231120-Day ☐ 231480-Day ☐ 231840-Day ☐ 232200-Day ☐ 232560-Day ☐ 232920-Day ☐ 233280-Day ☐ 233640-Day ☐ 234000-Day ☐ 234360-Day ☐ 234720-Day ☐ 235080-Day ☐ 235440-Day ☐ 235800-Day ☐ 236160-Day ☐ 236520-Day ☐ 236880-Day ☐ 237240-Day ☐ 237600-Day ☐ 237960-Day ☐ 238320-Day ☐ 238680-Day ☐ 239040-Day ☐ 239400-Day ☐ 239760-Day ☐ 240120-Day ☐ 240480-Day ☐ 240840-Day ☐ 241200-Day ☐ 241560-Day ☐ 241920-Day ☐ 242280-Day ☐ 242640-Day ☐ 243000-Day ☐ 243360-Day ☐ 243720-Day ☐ 244080-Day ☐ 244440-Day ☐ 244800-Day ☐ 245160-Day ☐ 245520-Day ☐ 245880-Day ☐ 246240-Day ☐ 246600-Day ☐ 246960-Day ☐ 247320-Day ☐ 247680-Day ☐ 248040-Day ☐ 248400-Day ☐ 248760-Day ☐ 249120-Day ☐ 249480-Day ☐ 249840-Day ☐ 250200-Day ☐ 250560-Day ☐ 250920-Day ☐ 251280-Day ☐ 251640-Day ☐ 252000-Day ☐ 252360-Day ☐ 252720-Day ☐ 253080-Day ☐ 253440-Day ☐ 253800-Day ☐ 254160-Day ☐ 254520-Day ☐ 254880-Day ☐ 255240-Day ☐ 255600-Day ☐ 255960-Day ☐ 256320-Day ☐ 256680-Day ☐ 257040-Day ☐ 257400-Day ☐ 257760-Day ☐ 258120-Day ☐ 258480-Day ☐ 258840-Day ☐ 259200-Day ☐ 259560-Day ☐ 259920-Day ☐ 260280-Day ☐ 260640-Day ☐ 261000-Day ☐ 261360-Day ☐ 261720-Day ☐ 262080-Day ☐ 262440-Day ☐ 262800-Day ☐ 263160-Day ☐ 263520-Day ☐ 263880-Day ☐ 264240-Day ☐ 264600-Day ☐ 264960-Day ☐ 265320-Day ☐ 265680-Day ☐ 266040-Day ☐ 266400-Day ☐ 266760-Day ☐ 267120-Day ☐ 267480-Day ☐ 267840-Day ☐ 268200-Day ☐ 268560-Day ☐ 268920-Day ☐ 269280-Day ☐ 269640-Day ☐ 270000-Day ☐ 270360-Day ☐ 270720-Day ☐ 271080-Day ☐ 271440-Day ☐ 271800-Day ☐ 272160-Day ☐ 272520-Day ☐ 272880-Day ☐ 273240-Day ☐ 273600-Day ☐ 273960-Day ☐ 274320-Day ☐ 274680-Day ☐ 275040-Day ☐ 275400-Day ☐ 275760-Day ☐ 276120-Day ☐ 276480-Day ☐ 276840-Day ☐ 277200-Day ☐ 277560-Day ☐ 277920-Day ☐ 278280-Day ☐ 278640-Day ☐ 279000-Day ☐ 279360-Day ☐ 279720-Day ☐ 280080-Day ☐ 280440-Day ☐ 280800-Day ☐ 281160-Day ☐ 281520-Day ☐ 281880-Day ☐ 282240-Day ☐ 282600-Day ☐ 282960-Day ☐ 283320-Day ☐ 283680-Day ☐ 284040-Day ☐ 284400-Day ☐ 284760-Day ☐ 285120-Day ☐ 285480-Day ☐ 285840-Day ☐ 286200-Day ☐ 286560-Day ☐ 286920-Day ☐ 287280-Day ☐ 287640-Day ☐ 288000-Day ☐ 288360-Day ☐ 288720-Day ☐ 289080-Day ☐ 289440-Day ☐ 289800-Day ☐ 290160-Day ☐ 290520-Day ☐ 290880-Day ☐ 291240-Day ☐ 291600-Day ☐ 291960-Day ☐ 292320-Day ☐ 292680-Day ☐ 293040-Day ☐ 293400-Day ☐ 293760-Day ☐ 294120-Day ☐ 294480-Day ☐ 294840-Day ☐ 295200-Day ☐ 295560-Day ☐ 295920-Day ☐ 296280-Day ☐ 296640-Day ☐ 297000-Day ☐ 297360-Day ☐ 297720-Day ☐ 298080-Day ☐ 298440-Day ☐ 298800-Day ☐ 299160-Day ☐ 299520-Day ☐ 299880-Day ☐ 300240-Day ☐ 300600-Day ☐ 300960-Day ☐ 301320-Day ☐ 301680-Day ☐ 302040-Day ☐ 302400-Day ☐ 302760-Day ☐ 303120-Day ☐ 303480-Day ☐ 303840-Day ☐ 304200-Day ☐ 304560-Day ☐ 304920-Day ☐ 305280-Day ☐ 305640-Day ☐ 306000-Day ☐ 306360-Day ☐ 306720-Day ☐ 307080-Day ☐ 307440-Day ☐ 307800-Day ☐ 308160-Day ☐ 308520-Day ☐ 308880-Day ☐ 309240-Day ☐ 309600-Day ☐ 309960-Day ☐ 310320-Day ☐ 310680-Day ☐ 311040-Day ☐ 311400-Day ☐ 311760-Day ☐ 312120-Day ☐ 312480-Day ☐ 312840-Day ☐ 313200-Day ☐ 313560-Day ☐ 313920-Day ☐ 314280-Day ☐ 314640-Day ☐ 315000-Day ☐ 315360-Day ☐ 315720-Day ☐ 316080-Day



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



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

Client WAC  
Received By AM Date 01/27/22 Time 1625  
How were the samples received? In Cooler T No Cooler        On Ice T No Ice         
Direct From Sample        Ambient        Melted Ice         
Were samples within Temperature? Within 2-6°C T By Gun # 2 Actual Temp - 3.7  
By Blank #        Actual Temp -         
Was Custody Seal In tact? MA Were Samples Tampered with? MA  
Was COC Relinquished? T Does Chain Agree With Samples? T  
Are there broken/leaking/loose caps on any samples? F  
Is COC in ink/ Legible? T Were samples received within holding time? T  
Did COC include all Client? T Analysis? T Sampler Name? T  
pertinent Information? Project? T ID's? T Collection Dates/Times? T  
Are Sample labels filled out and legible? T  
Are there Lab to Filters? F Who was notified?         
Are there Rushes? F Who was notified?         
Are there Short Holds? F Who was notified?         
Samples are received within holding time? T Is there enough Volume? T  
Is there Headspace where applicable? MA MS/MSD? F  
Proper Media/Containers Used? T splitting samples required F  
Were trip blanks received? F On COC? F  
Do All Samples Have the proper pH? MA Acid        Base       

Vials	#	Containers:	#	#	#
Unp-		1 Liter Amb.		1 Liter Plastic	
HCL-		500 mL Amb.		500 mL Plastic	
Meoh-		250 mL Amb.		250 mL Plastic	
Bisulfate-		Col./Bacteria		Flashpoint	
DI-		Other Plastic		Other Glass	
Thiosulfate-		SOC Kit		Plastic Bag	
Sulfuric-		Perchlorate		Ziplock	
					16 oz Amb.
					8oz Amb/Clear
					4oz Amb/Clear
					2oz Amb/Clear
					Encore
					Frozen:

#### Unused Media

Vials	#	Containers:	#	#	#
Unp-		1 Liter Amb.		1 Liter Plastic	
HCL-		500 mL Amb.		500 mL Plastic	
Meoh-		250 mL Amb.		250 mL Plastic	
Bisulfate-		Col./Bacteria		Flashpoint	
DI-		Other Plastic		Other Glass	
Thiosulfate-		SOC Kit		Plastic Bag	
Sulfuric-		Perchlorate		Ziplock	
					16 oz Amb.
					8oz Amb/Clear
					4oz Amb/Clear
					2oz Amb/Clear
					Encore
					Frozen:

Comments:

October 6, 2022

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

Project Location: Amherst, MA  
Client Job Number:  
Project Number: 0225695  
Laboratory Work Order Number: 22I1678

Enclosed are results of analyses for samples as received by the laboratory on September 27, 2022. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Meghan E. Kelley  
Project Manager

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39 Spruce Street \* East Longmeadow, MA 01028 \* FAX 413/525-6405 \* TEL. 413/525-2332Woodard & Curran - Andover, MA  
40 Shattuck Road., Suite 110  
Andover, MA 01810  
ATTN: George Franklin

REPORT DATE: 10/6/2022

PURCHASE ORDER NUMBER:

PROJECT NUMBER: 0225695

**ANALYTICAL SUMMARY**

---

WORK ORDER NUMBER: 2211678

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

PROJECT LOCATION: Amherst, MA

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
LT-BR-VMP-621	2211678-01	Wipe		SW-846 8082A	
LT-BR-VMP-622	2211678-02	Wipe		SW-846 8082A	
LT-BR-VMP-623	2211678-03	Wipe		SW-846 8082A	
LT-BR-VMP-624	2211678-04	Wipe		SW-846 8082A	
LT-CR-VMP-625	2211678-05	Wipe		SW-846 8082A	
LT-CR-VMP-626	2211678-06	Wipe		SW-846 8082A	
LT-CR-VMP-627	2211678-07	Wipe		SW-846 8082A	
LT-CR-VMP-628	2211678-08	Wipe		SW-846 8082A	
LT-CR-VMP-629	2211678-09	Wipe		SW-846 8082A	
LT-CR-VMP-630	2211678-10	Wipe		SW-846 8082A	
LT-CR-VMP-631	2211678-11	Wipe		SW-846 8082A	
LT-CR-VMP-632	2211678-12	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 Con-Test, a Pace 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.



Lisa A. Worthington  
Technical Representative

39 Spruce Street \* East Longmeadow, MA 01028 \* FAX 413/525-6405 \* TEL. 413/525-2332

Project Location: Amherst, MA

Sample Description:

Work Order: 2211678

Date Received: 9/27/2022

Field Sample #: LT-BR-VMP-621

Sampled: 9/27/2022 14:48

Sample ID: 2211678-01

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	10/2/22	10/5/22 12:21	TG
Aroclor-1221 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/5/22 12:21	TG
Aroclor-1232 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/5/22 12:21	TG
Aroclor-1242 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/5/22 12:21	TG
Aroclor-1248 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/5/22 12:21	TG
Aroclor-1254 [2]	0.33	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/5/22 12:21	TG
Aroclor-1260 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/5/22 12:21	TG
Aroclor-1262 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/5/22 12:21	TG
Aroclor-1268 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/5/22 12:21	TG
Surrogates	% Recovery	Recovery Limits	Flag/Qual						
Decachlorobiphenyl [1]	110	30-150							
Decachlorobiphenyl [2]	115	30-150							
Tetrachloro-m-xylene [1]	91.4	30-150							
Tetrachloro-m-xylene [2]	94.7	30-150							

39 Spruce Street \* East Longmeadow, MA 01028 \* FAX 413/525-6405 \* TEL. 413/525-2332

Project Location: Amherst, MA

Sample Description:

Work Order: 2211678

Date Received: 9/27/2022

Field Sample #: LT-BR-VMP-622

Sampled: 9/27/2022 14:58

Sample ID: 2211678-02

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	10/2/22	10/5/22 12:39	TG
Aroclor-1221 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/5/22 12:39	TG
Aroclor-1232 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/5/22 12:39	TG
Aroclor-1242 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/5/22 12:39	TG
Aroclor-1248 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/5/22 12:39	TG
Aroclor-1254 [2]	0.20	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/5/22 12:39	TG
Aroclor-1260 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/5/22 12:39	TG
Aroclor-1262 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/5/22 12:39	TG
Aroclor-1268 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/5/22 12:39	TG
Surrogates	% Recovery	Recovery Limits	Flag/Qual						
Decachlorobiphenyl [1]	110	30-150							
Decachlorobiphenyl [2]	114	30-150							
Tetrachloro-m-xylene [1]	93.5	30-150							
Tetrachloro-m-xylene [2]	97.0	30-150							

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Project Location: Amherst, MA

Sample Description:

Work Order: 2211678

Date Received: 9/27/2022

Field Sample #: LT-BR-VMP-623

Sampled: 9/26/2022 15:08

Sample ID: 2211678-03

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	10/2/22	10/5/22 12:56	TG
Aroclor-1221 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/5/22 12:56	TG
Aroclor-1232 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/5/22 12:56	TG
Aroclor-1242 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/5/22 12:56	TG
Aroclor-1248 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/5/22 12:56	TG
Aroclor-1254 [2]	0.20	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/5/22 12:56	TG
Aroclor-1260 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/5/22 12:56	TG
Aroclor-1262 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/5/22 12:56	TG
Aroclor-1268 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/5/22 12:56	TG
Surrogates	% Recovery	Recovery Limits	Flag/Qual						
Decachlorobiphenyl [1]	112	30-150							
Decachlorobiphenyl [2]	118	30-150							
Tetrachloro-m-xylene [1]	96.8	30-150							
Tetrachloro-m-xylene [2]	100	30-150							

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Project Location: Amherst, MA

Sample Description:

Work Order: 2211678

Date Received: 9/27/2022

Field Sample #: LT-BR-VMP-624

Sampled: 9/26/2022 15:10

Sample ID: 2211678-04

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	10/2/22	10/5/22 13:14	TG
Aroclor-1221 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/5/22 13:14	TG
Aroclor-1232 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/5/22 13:14	TG
Aroclor-1242 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/5/22 13:14	TG
Aroclor-1248 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/5/22 13:14	TG
Aroclor-1254 [2]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/5/22 13:14	TG
Aroclor-1260 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/5/22 13:14	TG
Aroclor-1262 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/5/22 13:14	TG
Aroclor-1268 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/5/22 13:14	TG
Surrogates	% Recovery	Recovery Limits	Flag/Qual						
Decachlorobiphenyl [1]	114	30-150						10/5/22 13:14	
Decachlorobiphenyl [2]	118	30-150						10/5/22 13:14	
Tetrachloro-m-xylene [1]	96.7	30-150						10/5/22 13:14	
Tetrachloro-m-xylene [2]	99.7	30-150						10/5/22 13:14	

39 Spruce Street \* East Longmeadow, MA 01028 \* FAX 413/525-6405 \* TEL. 413/525-2332

Project Location: Amherst, MA

Sample Description:

Work Order: 2211678

Date Received: 9/27/2022

Field Sample #: LT-CR-VMP-625

Sampled: 9/26/2022 15:26

Sample ID: 2211678-05

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	10/2/22	10/5/22 13:31	TG
Aroclor-1221 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/5/22 13:31	TG
Aroclor-1232 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/5/22 13:31	TG
Aroclor-1242 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/5/22 13:31	TG
Aroclor-1248 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/5/22 13:31	TG
Aroclor-1254 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/5/22 13:31	TG
Aroclor-1260 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/5/22 13:31	TG
Aroclor-1262 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/5/22 13:31	TG
Aroclor-1268 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/5/22 13:31	TG
Surrogates	% Recovery	Recovery Limits	Flag/Qual						
Decachlorobiphenyl [1]	110	30-150							
Decachlorobiphenyl [2]	114	30-150							
Tetrachloro-m-xylene [1]	94.0	30-150							
Tetrachloro-m-xylene [2]	97.1	30-150							

39 Spruce Street \* East Longmeadow, MA 01028 \* FAX 413/525-6405 \* TEL. 413/525-2332

Project Location: Amherst, MA

Sample Description:

Work Order: 2211678

Date Received: 9/27/2022

Field Sample #: LT-CR-VMP-626

Sampled: 9/26/2022 15:30

Sample ID: 2211678-06

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	10/2/22	10/5/22 13:49	TG
Aroclor-1221 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/5/22 13:49	TG
Aroclor-1232 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/5/22 13:49	TG
Aroclor-1242 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/5/22 13:49	TG
Aroclor-1248 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/5/22 13:49	TG
Aroclor-1254 [2]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/5/22 13:49	TG
Aroclor-1260 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/5/22 13:49	TG
Aroclor-1262 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/5/22 13:49	TG
Aroclor-1268 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/5/22 13:49	TG
Surrogates	% Recovery	Recovery Limits	Flag/Qual						
Decachlorobiphenyl [1]	111	30-150						10/5/22 13:49	
Decachlorobiphenyl [2]	115	30-150						10/5/22 13:49	
Tetrachloro-m-xylene [1]	96.2	30-150						10/5/22 13:49	
Tetrachloro-m-xylene [2]	99.4	30-150						10/5/22 13:49	



39 Spruce Street \* East Longmeadow, MA 01028 \* FAX 413/525-6405 \* TEL. 413/525-2332

Project Location: Amherst, MA

Sample Description:

Work Order: 2211678

Date Received: 9/27/2022

Field Sample #: LT-CR-VMP-627

Sampled: 9/26/2022 15:38

Sample ID: 2211678-07

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	10/2/22	10/5/22 14:06	TG
Aroclor-1221 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/5/22 14:06	TG
Aroclor-1232 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/5/22 14:06	TG
Aroclor-1242 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/5/22 14:06	TG
Aroclor-1248 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/5/22 14:06	TG
Aroclor-1254 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/5/22 14:06	TG
Aroclor-1260 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/5/22 14:06	TG
Aroclor-1262 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/5/22 14:06	TG
Aroclor-1268 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/5/22 14:06	TG
Surrogates	% Recovery	Recovery Limits	Flag/Qual						
Decachlorobiphenyl [1]	112	30-150						10/5/22 14:06	
Decachlorobiphenyl [2]	116	30-150						10/5/22 14:06	
Tetrachloro-m-xylene [1]	93.9	30-150						10/5/22 14:06	
Tetrachloro-m-xylene [2]	97.0	30-150						10/5/22 14:06	

39 Spruce Street \* East Longmeadow, MA 01028 \* FAX 413/525-6405 \* TEL. 413/525-2332

Project Location: Amherst, MA

Sample Description:

Work Order: 2211678

Date Received: 9/27/2022

Field Sample #: LT-CR-VMP-628

Sampled: 9/26/2022 15:44

Sample ID: 2211678-08

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	10/2/22	10/5/22 14:24	TG
Aroclor-1221 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/5/22 14:24	TG
Aroclor-1232 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/5/22 14:24	TG
Aroclor-1242 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/5/22 14:24	TG
Aroclor-1248 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/5/22 14:24	TG
Aroclor-1254 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/5/22 14:24	TG
Aroclor-1260 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/5/22 14:24	TG
Aroclor-1262 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/5/22 14:24	TG
Aroclor-1268 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/5/22 14:24	TG
Surrogates	% Recovery	Recovery Limits	Flag/Qual						
Decachlorobiphenyl [1]	109	30-150							
Decachlorobiphenyl [2]	112	30-150							
Tetrachloro-m-xylene [1]	93.9	30-150							
Tetrachloro-m-xylene [2]	97.0	30-150							

39 Spruce Street \* East Longmeadow, MA 01028 \* FAX 413/525-6405 \* TEL. 413/525-2332

Project Location: Amherst, MA

Sample Description:

Work Order: 2211678

Date Received: 9/27/2022

Field Sample #: LT-CR-VMP-629

Sampled: 9/26/2022 15:53

Sample ID: 2211678-09

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	10/2/22	10/5/22 14:41	TG
Aroclor-1221 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/5/22 14:41	TG
Aroclor-1232 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/5/22 14:41	TG
Aroclor-1242 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/5/22 14:41	TG
Aroclor-1248 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/5/22 14:41	TG
Aroclor-1254 [2]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/5/22 14:41	TG
Aroclor-1260 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/5/22 14:41	TG
Aroclor-1262 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/5/22 14:41	TG
Aroclor-1268 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/5/22 14:41	TG
Surrogates	% Recovery	Recovery Limits	Flag/Qual						
Decachlorobiphenyl [1]	110	30-150							
Decachlorobiphenyl [2]	113	30-150							
Tetrachloro-m-xylene [1]	94.6	30-150							
Tetrachloro-m-xylene [2]	97.8	30-150							

39 Spruce Street \* East Longmeadow, MA 01028 \* FAX 413/525-6405 \* TEL. 413/525-2332

Project Location: Amherst, MA

Sample Description:

Work Order: 2211678

Date Received: 9/27/2022

Field Sample #: LT-CR-VMP-630

Sampled: 9/26/2022 15:55

Sample ID: 2211678-10

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	10/2/22	10/5/22 14:59	TG
Aroclor-1221 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/5/22 14:59	TG
Aroclor-1232 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/5/22 14:59	TG
Aroclor-1242 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/5/22 14:59	TG
Aroclor-1248 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/5/22 14:59	TG
Aroclor-1254 [2]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/5/22 14:59	TG
Aroclor-1260 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/5/22 14:59	TG
Aroclor-1262 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/5/22 14:59	TG
Aroclor-1268 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/5/22 14:59	TG
Surrogates	% Recovery	Recovery Limits	Flag/Qual						
Decachlorobiphenyl [1]	115	30-150							
Decachlorobiphenyl [2]	119	30-150							
Tetrachloro-m-xylene [1]	98.8	30-150							
Tetrachloro-m-xylene [2]	103	30-150							

39 Spruce Street \* East Longmeadow, MA 01028 \* FAX 413/525-6405 \* TEL. 413/525-2332

Project Location: Amherst, MA

Sample Description:

Work Order: 2211678

Date Received: 9/27/2022

Field Sample #: LT-CR-VMP-631

Sampled: 9/26/2022 16:06

Sample ID: 2211678-11

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	10/2/22	10/5/22 15:16	TG
Aroclor-1221 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/5/22 15:16	TG
Aroclor-1232 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/5/22 15:16	TG
Aroclor-1242 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/5/22 15:16	TG
Aroclor-1248 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/5/22 15:16	TG
Aroclor-1254 [1]	0.22	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/5/22 15:16	TG
Aroclor-1260 [2]	0.33	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/5/22 15:16	TG
Aroclor-1262 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/5/22 15:16	TG
Aroclor-1268 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/5/22 15:16	TG
Surrogates	% Recovery	Recovery Limits	Flag/Qual						
Decachlorobiphenyl [1]	110	30-150							
Decachlorobiphenyl [2]	114	30-150							
Tetrachloro-m-xylene [1]	96.1	30-150							
Tetrachloro-m-xylene [2]	99.5	30-150							

39 Spruce Street \* East Longmeadow, MA 01028 \* FAX 413/525-6405 \* TEL. 413/525-2332

Project Location: Amherst, MA

Sample Description:

Work Order: 2211678

Date Received: 9/27/2022

Field Sample #: LT-CR-VMP-632

Sampled: 9/26/2022 16:08

Sample ID: 2211678-12

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	10/2/22	10/5/22 15:34	TG
Aroclor-1221 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/5/22 15:34	TG
Aroclor-1232 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/5/22 15:34	TG
Aroclor-1242 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/5/22 15:34	TG
Aroclor-1248 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/5/22 15:34	TG
Aroclor-1254 [2]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/5/22 15:34	TG
Aroclor-1260 [2]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/5/22 15:34	TG
Aroclor-1262 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/5/22 15:34	TG
Aroclor-1268 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	10/2/22	10/5/22 15:34	TG
Surrogates	% Recovery	Recovery Limits	Flag/Qual						
Decachlorobiphenyl [1]	112	30-150							
Decachlorobiphenyl [2]	116	30-150							
Tetrachloro-m-xylene [1]	95.5	30-150							
Tetrachloro-m-xylene [2]	99.0	30-150							

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39 Spruce Street \* East Longmeadow, MA 01028 \* FAX 413/525-6405 \* TEL. 413/525-2332**Sample Extraction Data****Prep Method: SW-846 3540C      Analytical Method: SW-846 8082A**

Lab Number [Field ID]	Batch	Initial [Wipe]	Final [mL]	Date
22I1678-01 [LT-BR-VMP-621]	B318612	1.00	10.0	10/02/22
22I1678-02 [LT-BR-VMP-622]	B318612	1.00	10.0	10/02/22
22I1678-03 [LT-BR-VMP-623]	B318612	1.00	10.0	10/02/22
22I1678-04 [LT-BR-VMP-624]	B318612	1.00	10.0	10/02/22
22I1678-05 [LT-CR-VMP-625]	B318612	1.00	10.0	10/02/22
22I1678-06 [LT-CR-VMP-626]	B318612	1.00	10.0	10/02/22
22I1678-07 [LT-CR-VMP-627]	B318612	1.00	10.0	10/02/22
22I1678-08 [LT-CR-VMP-628]	B318612	1.00	10.0	10/02/22
22I1678-09 [LT-CR-VMP-629]	B318612	1.00	10.0	10/02/22
22I1678-10 [LT-CR-VMP-630]	B318612	1.00	10.0	10/02/22
22I1678-11 [LT-CR-VMP-631]	B318612	1.00	10.0	10/02/22
22I1678-12 [LT-CR-VMP-632]	B318612	1.00	10.0	10/02/22

39 Spruce Street \* East Longmeadow, MA 01028 \* FAX 413/525-6405 \* TEL. 413/525-2332

**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 B318612 - SW-846 3540C**
**Blank (B318612-BLK1)**

Prepared: 10/02/22 Analyzed: 10/05/22

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	2.09		µg/Wipe	2.00		104	30-150			
Surrogate: Decachlorobiphenyl [2C]	2.23		µg/Wipe	2.00		111	30-150			
Surrogate: Tetrachloro-m-xylene	1.80		µg/Wipe	2.00		90.0	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	1.88		µg/Wipe	2.00		93.8	30-150			

**LCS (B318612-BS1)**

Prepared: 10/02/22 Analyzed: 10/05/22

Aroclor-1016	0.52	0.20	µg/Wipe	0.500		103	40-140			
Aroclor-1016 [2C]	0.53	0.20	µg/Wipe	0.500		105	40-140			
Aroclor-1260	0.47	0.20	µg/Wipe	0.500		94.8	40-140			
Aroclor-1260 [2C]	0.47	0.20	µg/Wipe	0.500		94.2	40-140			
Surrogate: Decachlorobiphenyl	2.22		µg/Wipe	2.00		111	30-150			
Surrogate: Decachlorobiphenyl [2C]	2.37		µg/Wipe	2.00		119	30-150			
Surrogate: Tetrachloro-m-xylene	1.92		µg/Wipe	2.00		96.1	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	2.01		µg/Wipe	2.00		100	30-150			

**LCS Dup (B318612-BSD1)**

Prepared: 10/02/22 Analyzed: 10/05/22

Aroclor-1016	0.43	0.20	µg/Wipe	0.500		86.5	40-140	17.9	30	
Aroclor-1016 [2C]	0.55	0.20	µg/Wipe	0.500		109	40-140	3.47	30	
Aroclor-1260	0.44	0.20	µg/Wipe	0.500		89.0	40-140	6.38	30	
Aroclor-1260 [2C]	0.44	0.20	µg/Wipe	0.500		87.7	40-140	7.15	30	
Surrogate: Decachlorobiphenyl	2.26		µg/Wipe	2.00		113	30-150			
Surrogate: Decachlorobiphenyl [2C]	2.36		µg/Wipe	2.00		118	30-150			
Surrogate: Tetrachloro-m-xylene	1.92		µg/Wipe	2.00		96.1	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	2.04		µg/Wipe	2.00		102	30-150			



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## IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

*SW-846 8082A*

LT-BR-VMP-621

Lab Sample ID: 22I1678-01      Date(s) Analyzed: 10/05/2022    10/05/2022  
 Instrument ID (1): ECD11      Instrument ID (2): ECD11  
 GC Column (1):                      ID:                      (mm)    GC Column (2):                      ID:                      (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%RPD
			FROM	TO		
Aroclor-1254	1	0.000	0.000	0.000	0.32	
	2	0.000	0.000	0.000	0.33	3.1

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**IDENTIFICATION SUMMARY  
FOR SINGLE COMPONENT ANALYTES****LT-BR-VMP-622***SW-846 8082A*

Lab Sample ID: 2211678-02 Date(s) Analyzed: 10/05/2022 10/05/2022  
Instrument ID (1): ECD11 Instrument ID (2): ECD11  
GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%RPD
			FROM	TO		
Aroclor-1254	1	0.000	0.000	0.000	0.20	
	2	0.000	0.000	0.000	0.20	0.0

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## IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

*SW-846 8082A*

**LT-CR-VMP-631**

Lab Sample ID: 2211678-11      Date(s) Analyzed: 10/05/2022    10/05/2022  
 Instrument ID (1): ECD11      Instrument ID (2): ECD11  
 GC Column (1):                      ID:                      (mm)      GC Column (2):                      ID:                      (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%RPD
			FROM	TO		
Aroclor-1254	1	0.000	0.000	0.000	0.22	
	2	0.000	0.000	0.000	0.22	0.0
Aroclor-1260	1	0.000	0.000	0.000	0.33	
	2	0.000	0.000	0.000	0.33	0.0

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## IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

*SW-846 8082A*

LCS

Lab Sample ID: B318612-BS1      Date(s) Analyzed: 10/05/2022    10/05/2022  
 Instrument ID (1): ECD11      Instrument ID (2): ECD11  
 GC Column (1):                      ID:                      (mm)      GC Column (2):                      ID:                      (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%RPD
			FROM	TO		
Aroclor-1016	1	0.000	0.000	0.000	0.52	
	2	0.000	0.000	0.000	0.53	1.9
Aroclor-1260	1	0.000	0.000	0.000	0.47	
	2	0.000	0.000	0.000	0.47	0.0

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## IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

*SW-846 8082A*

LCS Dup

Lab Sample ID: B318612-BSD1      Date(s) Analyzed: 10/05/2022    10/05/2022  
 Instrument ID (1): ECD11      Instrument ID (2): ECD11  
 GC Column (1):                      ID:                      (mm)      GC Column (2):                      ID:                      (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%RPD
			FROM	TO		
Aroclor-1016	1	0.000	0.000	0.000	0.43	
	2	0.000	0.000	0.000	0.55	24.5
Aroclor-1260	1	0.000	0.000	0.000	0.44	
	2	0.000	0.000	0.000	0.44	2.3

---

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*	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
ND	Not Detected
RL	Reporting Limit is at the level of quantitation (LOQ)
DL	Detection Limit is the lower limit of detection determined by the MDL study
MCL	Maximum Contaminant 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.

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

Con-Test, a Pace Environmental Laboratory, operates under the following certifications and accreditations:

Code	Description	Number	Expires
AIHA	AIHA-LAP, LLC - ISO 17025:2017	100033	03/1/2024
MA	Massachusetts DEP	M-MA100	06/30/2023
CT	Connecticut Department of Public Health	PH-0165	12/31/2022
NY	New York State Department of Health	10899 NELAP	04/1/2023
NH	New Hampshire Environmental Lab	2516 NELAP	02/5/2023
RI	Rhode Island Department of Health	LAO00373	12/30/2022
NC	North Carolina Div. of Water Quality	652	12/31/2022
NJ	New Jersey DEP	MA007 NELAP	06/30/2023
FL	Florida Department of Health	E871027 NELAP	06/30/2023
VT	Vermont Department of Health Lead Laboratory	LL720741	07/30/2023
VT-DW	Vermont Department of Health Drinking Water	VT-255716	06/12/2023
ME	State of Maine	MA00100	06/9/2023
VA	Commonwealth of Virginia	460217	12/14/2022
NH-P	New Hampshire Environmental Lab	2557 NELAP	09/6/2023
NC-DW	North Carolina Department of Health and Human Services	25703	07/31/2023
PA	Commonwealth of Pennsylvania DEP	68-05812	06/30/2023
MI	Dept. of Env, Great Lakes, and Energy	9100	06/30/2023
NB-CT	Connecticut Department of Public Health	PH-0554	09/30/2023
NB-NJ	New Jersey DEP	NY015 NELAP	06/30/2023
NB-NY	New York State Department of Health	10142 NELAP	04/1/2023







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East Longmeadow, MA. 01028  
P: 413-525-2332  
F: 413-525-6405  
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Doc# 277 Rev 6 July 2022

Login Sample Receipt Checklist - (Rejection Criteria Listing - Using Acceptance Policy) Any False Statement will be brought to the attention of the Client - State True or False

Client WAC  
Received By MA Date 01/27/22 Time 1625  
How were the samples received? In Cooler T No Cooler \_\_\_\_\_ On Ice T No Ice \_\_\_\_\_  
Direct From Sample \_\_\_\_\_ Ambient \_\_\_\_\_ Melted Ice \_\_\_\_\_  
Were samples within Temperature? Within 2-6°C T By Gun # 2 Actual Temp - 3.7  
By Blank # \_\_\_\_\_ Actual Temp - \_\_\_\_\_  
Was Custody Seal In tact? MA Were Samples Tampered with? MA  
Was COC Relinquished? T Does Chain Agree With Samples? T  
Are there broken/leaking/loose caps on any samples? F  
Is COC in ink/ Legible? T Were samples received within holding time? T  
Did COC include all Client? T Analysis? T Sampler Name? T  
pertinent Information? Project? T ID's? T Collection Dates/Times? T  
Are Sample labels filled out and legible? T  
Are there Lab to Filters? F Who was notified? \_\_\_\_\_  
Are there Rushes? F Who was notified? \_\_\_\_\_  
Are there Short Holds? F Who was notified? \_\_\_\_\_  
Samples are received within holding time? T Is there enough Volume? T  
Is there Headspace where applicable? MA MS/MSD? F  
Proper Media/Containers Used? T splitting samples require F  
Were trip blanks receive F On COC? F  
Do All Samples Have the proper pH? MA Acid Base

Vials	#	Containers:	#	#	#
Unp-		1 Liter Amb.		1 Liter Plastic	16 oz Amb.
HCL-		500 mL Amb.		500 mL Plastic	8oz Amb/Clear
Meoh-		250 mL Amb.		250 mL Plastic	4oz Amb/Clear
Bisulfate-		Col./Bacteria		Flashpoint	2oz Amb/Clear
DI-		Other Plastic		Other Glass	Encore
Thiosulfate-		SOC Kit		Plastic Bag	Frozen:
Sulfuric-		Perchlorate		Ziplock	

#### Unused Media

Vials	#	Containers:	#	#	#
Unp-		1 Liter Amb.		1 Liter Plastic	16 oz Amb.
HCL-		500 mL Amb.		500 mL Plastic	8oz Amb/Clear
Meoh-		250 mL Amb.		250 mL Plastic	4oz Amb/Clear
Bisulfate-		Col./Bacteria		Flashpoint	2oz Amb/Clear
DI-		Other Plastic		Other Glass	Encore
Thiosulfate-		SOC Kit		Plastic Bag	Frozen:
Sulfuric-		Perchlorate		Ziplock	

Comments:

October 12, 2022

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

Project Location: Amherst, MA  
Client Job Number:  
Project Number: 0225695  
Laboratory Work Order Number: 22I1679

Enclosed are results of analyses for samples as received by the laboratory on September 27, 2022. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Meghan E. Kelley  
Project Manager

## Table of Contents

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40 Shattuck Road., Suite 110  
Andover, MA 01810  
ATTN: George Franklin

REPORT DATE: 10/12/2022

PURCHASE ORDER NUMBER:

PROJECT NUMBER: 0225695

**ANALYTICAL SUMMARY**

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WORK ORDER NUMBER: 2211679

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

PROJECT LOCATION: Amherst, MA

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
LT-MR-IAS-601	2211679-01	Indoor air		TO-10A/EPA 680 Modified	
LT-BR-IAS-602	2211679-02	Indoor air		TO-10A/EPA 680 Modified	
LT-MR-IAS-603	2211679-03	Indoor air		TO-10A/EPA 680 Modified	
LT-CR-IAS-604	2211679-04	Indoor air		TO-10A/EPA 680 Modified	
LT-CR-IAS-605	2211679-05	Indoor air		TO-10A/EPA 680 Modified	

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**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:**

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**V-05**  
Continuing calibration verification (CCV) did not meet method specifications and was biased on the low side for this compound.

**Analyte & Samples(s) Qualified:****Decachlorobiphenyl**

22I1679-01[LT-MR-IAS-601], 22I1679-02[LT-BR-IAS-602], 22I1679-03[LT-MR-IAS-603], 22I1679-04[LT-CR-IAS-604], 22I1679-05[LT-CR-IAS-605], S077493-CCV1

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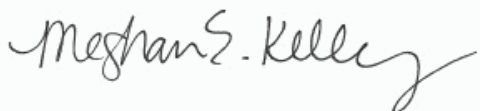
**V-34**  
Initial calibration verification (ICV) did not meet method specifications and was biased on the low side for this compound. Reported result is estimated.

**Analyte & Samples(s) Qualified:****Decachlorobiphenyl**

22I1679-01[LT-MR-IAS-601], 22I1679-02[LT-BR-IAS-602], 22I1679-03[LT-MR-IAS-603], 22I1679-04[LT-CR-IAS-604], 22I1679-05[LT-CR-IAS-605], B318377-BLK1, B318377-BS1, B318377-BSD1, S077493-CCV1, S077493-CCV2

The results of analyses reported only relate to samples submitted to Con-Test, a Pace 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.



Meghan E. Kelley  
Reporting Specialist

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**ANALYTICAL RESULTS**

Project Location: Amherst, MA

Date Received: 9/27/2022

**Field Sample #: LT-MR-IAS-601**
**Sample ID: 2211679-01**

Sample Matrix: Indoor air

Sampled: 9/26/2022 16:20

Sample Description/Location:

Sub Description/Location:

Flow Controller ID:

Sample Type:

Air Volume L: 2600

**Work Order: 2211679**
**TO-10A/EPA 680 Modified**

Analyte	Total µg		Flag/Qual	ug/m3		Dilution	Date/Time		Analyst
	Results	RL		Results	RL		Analyzed		
Monochlorobiphenyls	ND	0.0010	V-05, V-34	ND	0.00038	1	10/4/22	15:12	SPF
Dichlorobiphenyls	0.0068	0.0010		0.0026	0.00038	1	10/4/22	15:12	SPF
Trichlorobiphenyls	0.026	0.0020		0.010	0.00077	1	10/4/22	15:12	SPF
Tetrachlorobiphenyls	0.28	0.0020		0.11	0.00077	1	10/4/22	15:12	SPF
Pentachlorobiphenyls	0.31	0.0020		0.12	0.00077	1	10/4/22	15:12	SPF
Hexachlorobiphenyls	0.070	0.0020		0.027	0.00077	1	10/4/22	15:12	SPF
Heptachlorobiphenyls	0.013	0.0030		0.0049	0.0012	1	10/4/22	15:12	SPF
Octachlorobiphenyls	ND	0.0030		ND	0.0012	1	10/4/22	15:12	SPF
Nonachlorobiphenyls	ND	0.0050		ND	0.0019	1	10/4/22	15:12	SPF
Decachlorobiphenyl	ND	0.0050		ND	0.0019	1	10/4/22	15:12	SPF
Total Polychlorinated biphenyls	0.71			0.27		1	10/4/22	15:12	SPF
Surrogates	% Recovery			% REC Limits					
Tetrachloro-m-xylene	74.4			50-125			10/4/22	15:12	

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**ANALYTICAL RESULTS**

Project Location: Amherst, MA  
 Date Received: 9/27/2022  
**Field Sample #: LT-BR-IAS-602**  
**Sample ID: 2211679-02**  
 Sample Matrix: Indoor air  
 Sampled: 9/26/2022 16:55

Sample Description/Location:  
 Sub Description/Location:

**Work Order: 2211679**

Flow Controller ID:  
 Sample Type:  
 Air Volume L: 2600

**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	V-05, V-34	ND	0.00038	1	10/4/22	15:49	SPF
Dichlorobiphenyls	0.0080	0.0010		0.0031	0.00038	1	10/4/22	15:49	SPF
Trichlorobiphenyls	0.12	0.0020		0.045	0.00077	1	10/4/22	15:49	SPF
Tetrachlorobiphenyls	0.46	0.0020		0.18	0.00077	1	10/4/22	15:49	SPF
Pentachlorobiphenyls	0.48	0.0020		0.18	0.00077	1	10/4/22	15:49	SPF
Hexachlorobiphenyls	0.087	0.0020		0.034	0.00077	1	10/4/22	15:49	SPF
Heptachlorobiphenyls	0.013	0.0030		0.0051	0.0012	1	10/4/22	15:49	SPF
Octachlorobiphenyls	ND	0.0030		ND	0.0012	1	10/4/22	15:49	SPF
Nonachlorobiphenyls	ND	0.0050		ND	0.0019	1	10/4/22	15:49	SPF
Decachlorobiphenyl	ND	0.0050		ND	0.0019	1	10/4/22	15:49	SPF
Total Polychlorinated biphenyls	1.2			0.45	1	10/4/22	15:49	SPF	

Surrogates	% Recovery	% REC Limits	
Tetrachloro-m-xylene	67.9	50-125	10/4/22 15:49



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**ANALYTICAL RESULTS**

Project Location: Amherst, MA

Date Received: 9/27/2022

Field Sample #: LT-MR-IAS-603

Sample ID: 2211679-03

Sample Matrix: Indoor air

Sampled: 9/26/2022 16:42

Sample Description/Location:

Sub Description/Location:

Work Order: 2211679

Flow Controller ID:

Sample Type:

Air Volume L: 2600

**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	V-05, V-34	ND	0.00038	1	10/4/22	16:27	SPF
Dichlorobiphenyls	0.0020	0.0010		0.00075	0.00038	1	10/4/22	16:27	SPF
Trichlorobiphenyls	0.062	0.0020		0.024	0.00077	1	10/4/22	16:27	SPF
Tetrachlorobiphenyls	0.15	0.0020		0.058	0.00077	1	10/4/22	16:27	SPF
Pentachlorobiphenyls	0.13	0.0020		0.049	0.00077	1	10/4/22	16:27	SPF
Hexachlorobiphenyls	0.044	0.0020		0.017	0.00077	1	10/4/22	16:27	SPF
Heptachlorobiphenyls	0.010	0.0030		0.0038	0.0012	1	10/4/22	16:27	SPF
Octachlorobiphenyls	ND	0.0030		ND	0.0012	1	10/4/22	16:27	SPF
Nonachlorobiphenyls	ND	0.0050		ND	0.0019	1	10/4/22	16:27	SPF
Decachlorobiphenyl	ND	0.0050		ND	0.0019	1	10/4/22	16:27	SPF
Total Polychlorinated biphenyls	0.40			0.15	1	10/4/22	16:27	SPF	

Surrogates	% Recovery	% REC Limits	
Tetrachloro-m-xylene	70.4	50-125	10/4/22 16:27

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**ANALYTICAL RESULTS**

Project Location: Amherst, MA  
 Date Received: 9/27/2022  
**Field Sample #: LT-CR-IAS-604**  
**Sample ID: 2211679-04**  
 Sample Matrix: Indoor air  
 Sampled: 9/26/2022 17:07

Sample Description/Location:  
 Sub Description/Location:

**Work Order: 2211679**

Flow Controller ID:  
 Sample Type:  
 Air Volume L: 2600

**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	V-05, V-34	ND	0.00038	1	10/4/22	17:04	SPF
Dichlorobiphenyls	0.0094	0.0010		0.0036	0.00038	1	10/4/22	17:04	SPF
Trichlorobiphenyls	0.060	0.0020		0.023	0.00077	1	10/4/22	17:04	SPF
Tetrachlorobiphenyls	0.25	0.0020		0.095	0.00077	1	10/4/22	17:04	SPF
Pentachlorobiphenyls	0.27	0.0020		0.10	0.00077	1	10/4/22	17:04	SPF
Hexachlorobiphenyls	0.036	0.0020		0.014	0.00077	1	10/4/22	17:04	SPF
Heptachlorobiphenyls	ND	0.0030		ND	0.0012	1	10/4/22	17:04	SPF
Octachlorobiphenyls	ND	0.0030		ND	0.0012	1	10/4/22	17:04	SPF
Nonachlorobiphenyls	ND	0.0050		ND	0.0019	1	10/4/22	17:04	SPF
Decachlorobiphenyl	ND	0.0050		ND	0.0019	1	10/4/22	17:04	SPF
Total Polychlorinated biphenyls	0.62			0.24		1	10/4/22	17:04	SPF

Surrogates	% Recovery	% REC Limits	
Tetrachloro-m-xylene	66.8	50-125	10/4/22 17:04

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**ANALYTICAL RESULTS**

Project Location: Amherst, MA  
 Date Received: 9/27/2022  
**Field Sample #: LT-CR-IAS-605**  
**Sample ID: 2211679-05**  
 Sample Matrix: Indoor air  
 Sampled: 9/26/2022 17:07

Sample Description/Location:  
 Sub Description/Location:

**Work Order: 2211679**

Flow Controller ID:  
 Sample Type:  
 Air Volume L: 2600

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

Analyte	Total µg		Flag/Qual	ug/m3		Dilution	Date/Time		Analyst
	Results	RL		Results	RL		Analyzed		
Monochlorobiphenyls	ND	0.0010		ND	0.00038	1	10/4/22 17:42	SPF	
Dichlorobiphenyls	0.0087	0.0010		0.0033	0.00038	1	10/4/22 17:42	SPF	
Trichlorobiphenyls	0.052	0.0020		0.020	0.00077	1	10/4/22 17:42	SPF	
Tetrachlorobiphenyls	0.24	0.0020		0.091	0.00077	1	10/4/22 17:42	SPF	
Pentachlorobiphenyls	0.27	0.0020		0.10	0.00077	1	10/4/22 17:42	SPF	
Hexachlorobiphenyls	0.038	0.0020		0.015	0.00077	1	10/4/22 17:42	SPF	
Heptachlorobiphenyls	ND	0.0030		ND	0.0012	1	10/4/22 17:42	SPF	
Octachlorobiphenyls	ND	0.0030		ND	0.0012	1	10/4/22 17:42	SPF	
Nonachlorobiphenyls	ND	0.0050		ND	0.0019	1	10/4/22 17:42	SPF	
Decachlorobiphenyl	ND	0.0050	V-05, V-34	ND	0.0019	1	10/4/22 17:42	SPF	
Total Polychlorinated biphenyls	0.60			0.23		1	10/4/22 17:42	SPF	

Surrogates	% Recovery	% REC Limits	
Tetrachloro-m-xylene	67.8	50-125	10/4/22 17:42

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

Lab Number [Field ID]	Batch	Initial [Cartridge	Final [mL]	Date
22I1679-01 [LT-MR-IAS-601]	B318377	1.00	1.00	09/29/22
22I1679-02 [LT-BR-IAS-602]	B318377	1.00	1.00	09/29/22
22I1679-03 [LT-MR-IAS-603]	B318377	1.00	1.00	09/29/22
22I1679-04 [LT-CR-IAS-604]	B318377	1.00	1.00	09/29/22
22I1679-05 [LT-CR-IAS-605]	B318377	1.00	1.00	09/29/22

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39 Spruce Street \* East Longmeadow, MA 01028 \* FAX 413/525-6405 \* TEL. 413/525-2332

## QUALITY CONTROL

## PCB Homologues by GC/MS (Air) 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 B318377 - SW-846 3540C											
Blank (B318377-BLK1)					Prepared: 09/29/22 Analyzed: 10/04/22						
Monochlorobiphenyls	ND	0.0010									
Dichlorobiphenyls	ND	0.0010									
Trichlorobiphenyls	ND	0.0020									
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									V-34
Total Polychlorinated biphenyls	0.0										
Surrogate: Tetrachloro-m-xylene	0.155				0.200		77.4	50-125			
LCS (B318377-BS1)					Prepared: 09/29/22 Analyzed: 10/04/22						
Monochlorobiphenyls	0.13	0.0010			0.200		63.8	40-140			
Dichlorobiphenyls	0.15	0.0010			0.200		73.2	40-140			
Trichlorobiphenyls	0.17	0.0020			0.200		82.9	40-140			
Tetrachlorobiphenyls	0.32	0.0020			0.400		81.2	40-140			
Pentachlorobiphenyls	0.35	0.0020			0.400		87.7	40-140			
Hexachlorobiphenyls	0.31	0.0020			0.400		77.6	40-140			
Heptachlorobiphenyls	0.42	0.0030			0.600		69.7	40-140			
Octachlorobiphenyls	0.44	0.0030			0.600		72.5	40-140			
Nonachlorobiphenyls	0.78	0.0050			1.00		78.4	40-140			
Decachlorobiphenyl	0.69	0.0050			1.00		68.7	40-140			V-34
Surrogate: Tetrachloro-m-xylene	0.140				0.200		70.2	50-125			
LCS Dup (B318377-BSD1)					Prepared: 09/29/22 Analyzed: 10/04/22						
Monochlorobiphenyls	0.14	0.0010			0.200		67.5	40-140	5.62	50	
Dichlorobiphenyls	0.14	0.0010			0.200		69.9	40-140	4.69	50	
Trichlorobiphenyls	0.16	0.0020			0.200		79.6	40-140	4.12	50	
Tetrachlorobiphenyls	0.31	0.0020			0.400		77.3	40-140	4.94	50	
Pentachlorobiphenyls	0.35	0.0020			0.400		86.9	40-140	0.905	50	
Hexachlorobiphenyls	0.30	0.0020			0.400		75.4	40-140	2.89	50	
Heptachlorobiphenyls	0.41	0.0030			0.600		67.5	40-140	3.26	50	
Octachlorobiphenyls	0.43	0.0030			0.600		71.6	40-140	1.30	50	
Nonachlorobiphenyls	0.76	0.0050			1.00		76.5	40-140	2.49	50	
Decachlorobiphenyl	0.71	0.0050			1.00		70.7	40-140	2.92	50	V-34
Surrogate: Tetrachloro-m-xylene	0.144				0.200		71.9	50-125			

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39 Spruce Street \* East Longmeadow, MA 01028 \* FAX 413/525-6405 \* TEL. 413/525-2332**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
ND	Not Detected
RL	Reporting Limit is at the level of quantitation (LOQ)
DL	Detection Limit is the lower limit of detection determined by the MDL study
MCL	Maximum Contaminant 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.
V-05	Continuing calibration verification (CCV) did not meet method specifications and was biased on the low side for this compound.
V-34	Initial calibration verification (ICV) did not meet method specifications and was biased on the low side for this compound. Reported result is estimated.

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**INTERNAL STANDARD AREA AND RT SUMMARY**
**TO-10A/EPA 680 Modified**

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
<b>Blank (B318377-BLK1 )</b>			Lab File ID: F22S277006.D			Analyzed: 10/04/22 13:19			
Phenanthrene-d10	769998	19.965				70 - 130	19.9650	+/-0.50	
Chrysene-d12	500090	27.578				70 - 130	27.5780	+/-0.50	
<b>LCS (B318377-BS1 )</b>			Lab File ID: F22S277007.D			Analyzed: 10/04/22 13:57			
Phenanthrene-d10	796695	19.965				70 - 130	19.9650	+/-0.50	
Chrysene-d12	492632	27.578				70 - 130	27.5780	+/-0.50	
<b>LCS Dup (B318377-BSD1 )</b>			Lab File ID: F22S277008.D			Analyzed: 10/04/22 14:34			
Phenanthrene-d10	787372	19.965				70 - 130	19.9650	+/-0.50	
Chrysene-d12	497016	27.578				70 - 130	27.5780	+/-0.50	
<b>LT-MR-IAS-601 (2211679-01 )</b>			Lab File ID: F22S277009.D			Analyzed: 10/04/22 15:12			
Phenanthrene-d10	759981	19.965				70 - 130	19.9650	+/-0.50	
Chrysene-d12	493061	27.578				70 - 130	27.5780	+/-0.50	
<b>LT-BR-IAS-602 (2211679-02 )</b>			Lab File ID: F22S277010.D			Analyzed: 10/04/22 15:49			
Phenanthrene-d10	773486	19.965				70 - 130	19.9650	+/-0.50	
Chrysene-d12	498861	27.576				70 - 130	27.5760	+/-0.50	
<b>LT-MR-IAS-603 (2211679-03 )</b>			Lab File ID: F22S277011.D			Analyzed: 10/04/22 16:27			
Phenanthrene-d10	705306	19.965				70 - 130	19.9650	+/-0.50	
Chrysene-d12	466363	27.578				70 - 130	27.5780	+/-0.50	
<b>LT-CR-IAS-604 (2211679-04 )</b>			Lab File ID: F22S277012.D			Analyzed: 10/04/22 17:04			
Phenanthrene-d10	721172	19.965				70 - 130	19.9650	+/-0.50	
Chrysene-d12	487543	27.578				70 - 130	27.5780	+/-0.50	
<b>LT-CR-IAS-605 (2211679-05 )</b>			Lab File ID: F22S277013.D			Analyzed: 10/04/22 17:42			
Phenanthrene-d10	809378	19.965				70 - 130	19.9650	+/-0.50	
Chrysene-d12	496500	27.576				70 - 130	27.5760	+/-0.50	

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CONTINUING CALIBRATION CHECK

COMPOUND	TYPE			RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)

# Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

\* Values outside of QC limits



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CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
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No certified Analyses included in this Report

Con-Test, a Pace Environmental Laboratory, operates under the following certifications and accreditations:

Code	Description	Number	Expires
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39 Spruce St.  
East Longmeadow, MA. 01028  
P: 413-525-2332  
F: 413-525-6405  
www.pacelabs.com



Doc# 278 Rev 7 July 2022

**Air Media Sample Receipt Checklist - (Rejection Criteria Listing - Using Acceptance Policy) Any False Statement will be brought to the attention of the Client - State True or False**

Client Woodard & Curran

Received By [Signature] Date 9/27/22 Time 1625

How Were the samples received? In Cooler T On Ice T No Ice

In Box  Ambient  Melted Ice

Were samples within Temperature Compliance? Within 2-6°C T By Gun # 3 Actual Temp -5.5

By Blank #  Actual Temp

Was Custody Seal In tact? na Were Samples Tampered with? na

Was COC Relinquished? T Does Chain Agree With Samples? T

Are there any loose caps/valves on any samples? F

Is COC in ink/ Legible? T Were samples received within holding time? T

Did COC Include all Pertinent Information? Client? T Analysis? T Sampler Name? T

Project? T ID's? T Collection Dates/Times? T

Are Sample Labels filled out and legible? T

Are there Rushes? F Who was notified?

Samples are received within holding time? T

Proper Media Used? T Individually Certified Cans? F

Are there Trip Blanks? F Is there enough Volume? T

Containers:	#	Size	Regulator	Duration	Accessories:		
Summa Cans					Nut/Ferrule		IC Train
Tedlar Bags					Tubing		
TO-17 Tubes					T-Connector		Shipping Charges
Radiello					Syringe		
Pufs/TO-11s	<u>5</u>	<u>LV</u>			Tedlar		

Can #'s					Reg #'s				
Unused Media					Pufs/TO-17's				
					<u>090922</u>	<u>-01</u>			
						<u>-02</u>			
						<u>-03</u>			
						<u>-04</u>			
						<u>-05</u>			

Comments: