



December 22, 2015

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

Re: Long-Term Monitoring and Maintenance Implementation – 2015 Monitoring Results
University of Massachusetts, Amherst, Massachusetts

Dear Ms. Tisa:

On behalf of the University of Massachusetts, this report has been prepared and is being submitted to document the results from the 2015 long term monitoring activities 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; four rounds of post-remediation monitoring have been conducted (2012 – 2015) as described in this report;
- Southwest Concourse – The MMIP was submitted on December 29, 2010 in accordance with Condition 13 of the EPA's Southwest Residential Area Concourse PCB Cleanup and Disposal Approval under 40 CFR 761.61 (a) and (c) and 761.79 (h) dated August 30, 2010; monitoring activities were also conducted at those areas described in the PCB Remediation Plan Amendment dated May 9, 2011; four rounds of post-remediation monitoring have been conducted (2012 – 2015) as described in this report;
- 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; three rounds of post-remediation monitoring have been conducted (2013 – 2015) as described in this report;
- Orchard Hill Residential:
 - 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; four rounds of post-remediation monitoring have been conducted (2012 – 2015) as described in this report;
 - 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 complete on the exterior joints submitted on April 24, 2012 as part of the PCB Remediation Plan/Close Out Document for Field and Grayson House by ATC Associates, Inc.; four rounds of post-remediation monitoring have been conducted (2013 – 2015) as described in this report; and
- Sylvan Residential – 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). An EPA



Approval has not been issued for this work; two rounds of post-remediation monitoring have been conducted (2014 and 2015) as described in this report.

As previously discussed, the activities conducted in support of the monitoring and maintenance activities for these projects are being submitted under a single cover to streamline reporting and review of these activities. The locations of these areas are depicted on Figure 1.

An overall summary of the 2015 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 surfaces in former direct contact with the caulking as well as a limited extent of masonry materials beyond the former joints.

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

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

MONITORING ACTIVITIES –2015

Woodard & Curran performed the following monitoring activities during 2015:

- Tobin Hall Deck – A visual inspection of the encapsulated concrete pillar surfaces was performed and two verification wipe samples collected;
- Dubois Library – A visual inspection of encapsulated interior concrete building walls, ceiling, and CMU block in-fills in the elevator lobbies was conducted and seven verification wipe samples were collected from the lobby areas. In addition, five indoor air samples were collected during three rounds of indoor air sampling conducted in the lobbies (February, July, and October);



- Southwest Concourse – A visual inspection of encapsulated exterior concrete building walls, retaining walls, and concrete within the pedestrian tunnel was conducted and 19 verification wipe samples collected from representative locations throughout the project area;
- Orchard Hill Residential – At the Webster House, a visual inspection of the encapsulated interior elevator lobby walls and the metal cladding/window frames on the northwest building elevation was performed and three verification wipe samples collected from the interior lobby walls. At the Field and Grayson Houses, a visual inspection was completed in the 6th floor elevator lobbies, the stairwells, and of the exterior concrete spandrels. Two wipe samples were collected from the exterior spandrels and one was collected from the elevator lobby walls. Additionally, a visual inspection of encapsulated concrete parapet wall materials at the roofline of the buildings was performed; and
- Sylvan Residential – For all three buildings, visual inspections of encapsulated brick and replacement caulking associated with the exterior control joints, interior encapsulated walls, and interior encapsulated ceilings were conducted. In addition, a total of 32 wipe samples were collected from the encapsulated interior and exterior surfaces as part of the long term monitoring.

RESULTS

A summary of the results of the 2015 monitoring activities for each building is included in Attachments 1 through 5 to this letter. Complete analytical laboratory reports, along with a data validation summary, are provided in Attachment 6.

The 2015 inspection and sampling results indicate that the liquid coatings and secondary barriers continue to be effective containment barriers to residual concentrations of PCBs in the masonry.

As described in Attachments 1 and 3, relatively minor flaking and peeling were observed in the clear acrylic coatings applied to select concrete surfaces at the Tobin Hall Deck and in the Southwest Concourse Area. Wipe samples collected from these minor areas of observed flaking and peeling indicate that PCBs were not detected above the target level of 1.0 µg/100 cm².

As described in Attachment 5, results of wipe sampling conducted on the surface of replacement caulking within the control joints of the three Sylvan Complex buildings indicate that PCBs continue to be reported at concentrations > 1 µg/100cm² in both hexane and saline wipes. However, verification wipe sampling results remain below those reported in wipe samples collected directly from the surface of the epoxy coating prior to installation of the caulking in 2012.

Maintenance Activities

Based on the results of the annual monitoring the following maintenance activities are proposed to be conducted:

- Tobin Hall – the small area of flaking and peeling acrylic coating on the northern column is proposed to be replaced with two coats of Sikagard 62 liquid epoxy to match the southern column.
- Southwest Concourse – the isolated areas of damaged epoxy will be patched with Sikagard 62 liquid epoxy to match the existing coatings; with regard to the areas where the clear coating was observed to be flaking and peeling, UMass is still evaluating options for different coatings that could be used on these masonry surfaces.



Corrective Measures

Based on the results of the annual monitoring conducted the following corrective measures are proposed to be conducted:

- Sylvan Complex – due to PCB concentrations in the wipe samples of the replacement caulking at the vertical caulked joints at the McNamara building, UMass is evaluating 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 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. Details of the product selected and application will be provided upon selection/implementation.

Continued Monitoring

It is proposed to continue the campus wide monitoring on an annual basis; however, given the consistent and reproducible monitoring results, the frequency for some of the individual areas is proposed to be modified, as follows:

- Sylvan Complex – Visual inspections and wipe sampling to be continued on an annual basis; next event in July 2016 (all areas) – no change proposed.
- Dubois Library – Indoor air sampling to be conducted during one event per year instead of three events as conducted over the last two years (next air sampling event to be conducted in July 2016); visual inspections and wipe sampling to be conducted on a bi-annual basis; next event in July 2017.
- Tobin Hall, and Southwest Concourse – Visual inspections and wipe sampling to be conducted on a bi-annual basis; next event in July 2017.
- Orchard Hill Area – Visual inspections and wipe sampling proposed to be conducted on a bi-annual basis; next event in July 2017.

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.

George J. Franklin, CHMM
Project Scientist

Jeffrey A. Hamel, LSP, LEP
Senior Principal

cc: Terri Wolejko, UMass EH&S

Enclosures: 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 – Data Validation Summary and Analytical Laboratory Reports



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

0 500 1,000 Feet

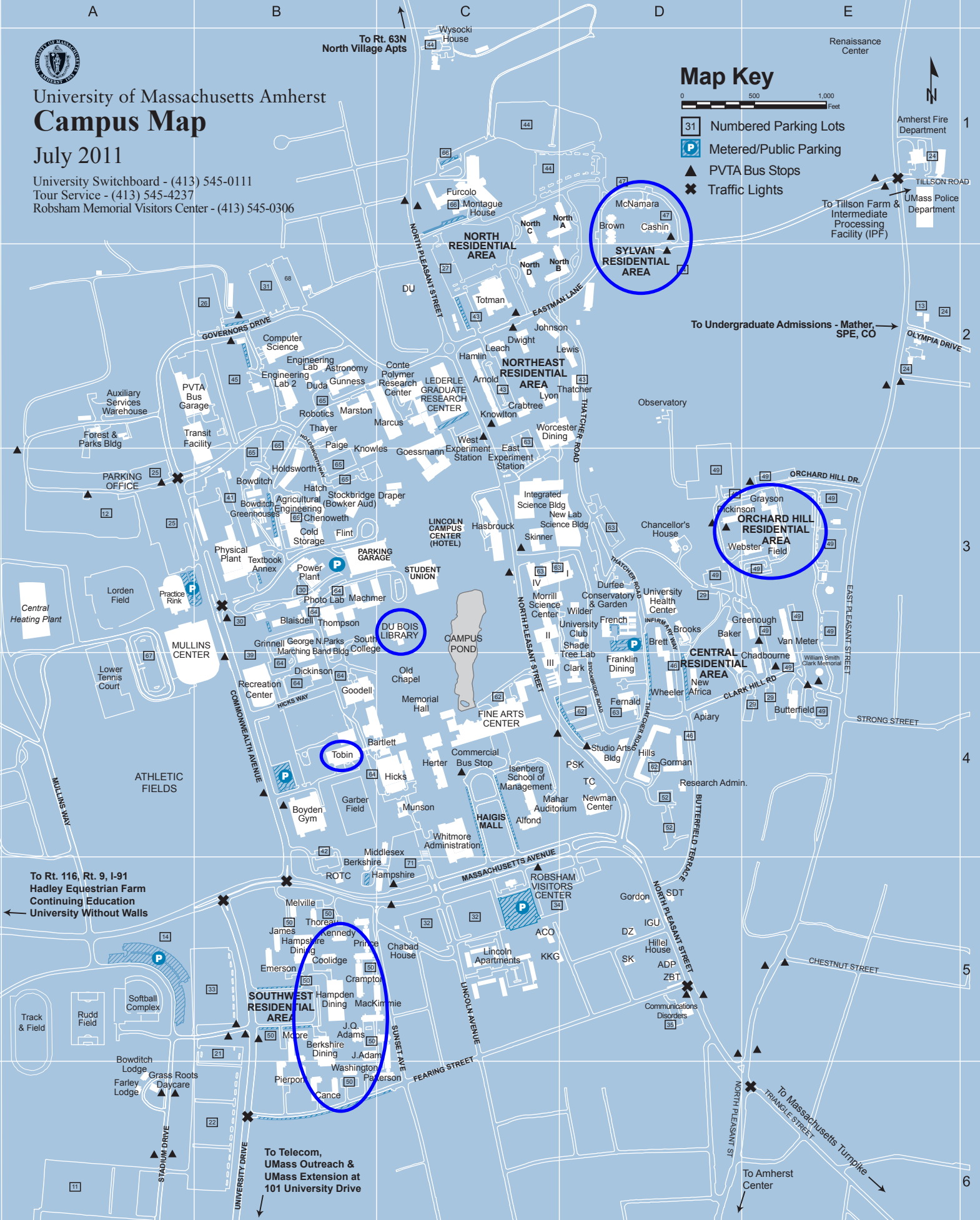


Figure 1 Site Location Map



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 ppm remain beneath a liquid encapsulating coating (residual PCB concentration in masonry reported at a concentration of 2.37 ppm). The encapsulation extends to a distance of six inches above and six inches below the former caulked joint along approximately 80 linear feet (l.f.) of the Tobin Hall building wall and along approximately seven 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. The photo below depicts a portion of the concrete wall encapsulated with the Sikagard 670W acrylic coating and which is no longer accessible as described in the following sections.



Concrete Wall to North of Main Stairway

Baseline Verification Data Summary: Two initial baseline wipe samples were collected in August 2011 from the building wall encapsulated with Sikagard 670W clear acrylic coating as part of the decking removal project. Analytical results reported PCBs as non-detect (< 0.20 µg/100 cm²) 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 µg/100 cm²).

Monitoring and Maintenance Implementation Plan

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

Long term monitoring wipe sampling of the encapsulated surfaces includes the collection of two wipe samples from the encapsulated surfaces (one from the northern portion of the wall and one from the southern portion of the wall). The locations will be randomly selected using a number representing the length of the individual joints in feet. Wipe

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

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 – August 2012

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

Monitoring Activities – October 2013

As described in the 2012 Long Term Maintenance and Monitoring Report, repairs to the area observed to be damaged by the hose connection were to be conducted as part of maintenance activities in 2013; however, as part of the final restoration/construction activities associated with the Commonwealth Honors construction project, four foot high retaining walls were constructed to the north and south of the former stair landing eliminating access to the damaged area observed in 2012 as well as the majority of the encapsulated surfaces identified as containing > 1 ppm PCBs (see photo below and Figure 1-1).

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

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

The remaining exposed encapsulated concrete façade was limited to a total of approximately 3.5 square feet of concrete at the northern and southern ends of the stair landing (i.e., seven feet of former joint to a distance of six inches above the former joints). The epoxy coating on the southern façade area was observed to be in good condition while there was limited flaking and peeling observed on the clear acrylic coating on the northern façade area. Analytical results from the two wipe samples collected (1 from each area) indicated that PCBs were non-detect ($< 0.20 \mu\text{g}/100\text{cm}^2$).

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



Northern Side of Stair Landing

Monitoring Activities – July 2014

On July 22, 2014, accessible coatings applied to concrete materials were inspected for signs of deterioration or damage. The remaining exposed concrete areas remained the same as in the 2013 monitoring event and the two sampling areas remained the same. A summary of the results of the visual inspections and wipe sampling is as follows:

- Southern Façade Area - Sikagard 62 liquid epoxy coating was observed to be in good condition with no signs of damage or wear. Results of the wipe sample collected from the epoxy coated surfaces indicated that PCBs were non-detect (LTM-TH-VWC-270 at $< 0.20 \mu\text{g}/100\text{cm}^2$) consistent with previous sampling events; and
- Northern Façade Area - Sikagard 670W clear coat encapsulant was found to be flaking and peeling in select sections of the concrete as observed following the application of the coatings in Fall 2012; a wipe sample was collected from the flaking area and analytical results indicated that PCBs were non-detect (LTM-TH-VWC-271 at $< 0.20 \mu\text{g}/100\text{cm}^2$) consistent with previous sampling events.

Monitoring Activities – July 2015

On July 21, 2015, accessible coatings applied to concrete materials were inspected for signs of deterioration or damage. The remaining exposed concrete areas remained the same as in the 2013 and 2014 monitoring events and the two sampling areas remained the same. A summary of the results of the visual inspections and wipe sampling is as follows:

- Southern Façade Area - Sikagard 62 liquid epoxy coating was observed to be in good condition with no signs of damage or wear. Results of the wipe sample collected from the epoxy coated surfaces indicated that PCBs were non-detect (LTM-TH-VWC-367 at $< 0.20 \mu\text{g}/100\text{cm}^2$) consistent with previous sampling events; and

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

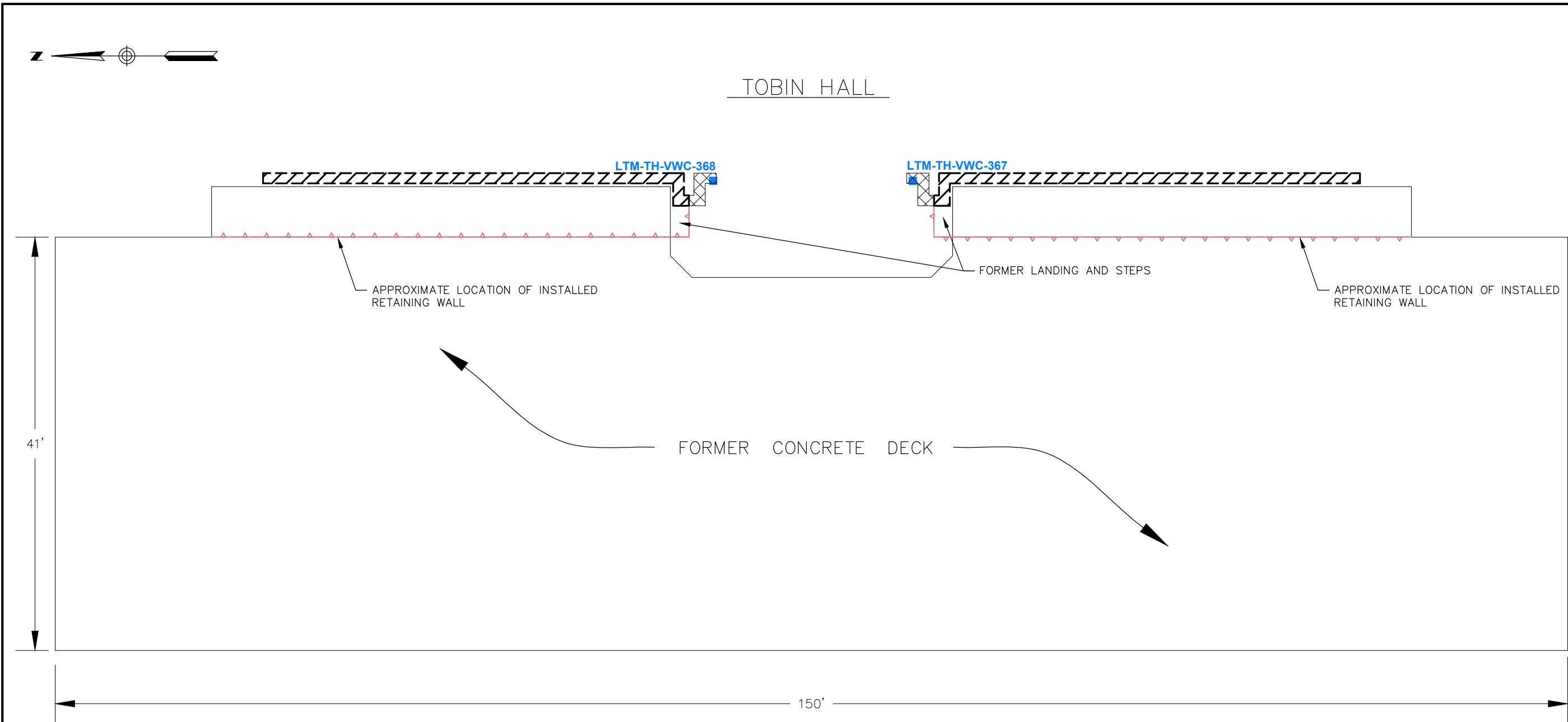
- Northern Façade Area - Sikagard 670W clear coat encapsulant was found to be flaking and peeling in select sections of the concrete as observed during previous inspections; wipe sample was collected from the flaking area and analytical results indicated that PCBs were non-detect (LTM-TH-VWC-368 at < 0.20 µg/100cm²) consistent with previous sampling events.

Maintenance Activities

Based on the observed flaking and peeling of the clear acrylic coating on the northern column, the coating will be replaced with two coats of Sikagard 62 liquid epoxy coating to match the southern concrete column.

Proposed Monitoring Frequency

Based on the consistent results of the visual inspections and wipe sampling activities over the past three years, it is proposed to modify the monitoring frequency to a bi-annual basis with the next scheduled event to be conducted in July 2017.



LEGEND



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



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

LTM-TH-VWC-367 ■ VERIFICATION WIPE SAMPLE LOCATION AND IDENTIFIER



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

ENCAPSULATED BUILDING
SURFACES AND VERIFICATION
WIPE SAMPLE LOCATION

UNIVERSITY OF MASSACHUSETTS
AMHERST, MASSACHUSETTS

2015 TOBIN HALL PCB MMIP REPORT

JOB NO: 225695
DATE: OCTOBER 2015
SCALE: AS NOTED

FIGURE 1



40 Shattuck Road, Suite 110
Andover, Massachusetts 01810
866.702.6371 | www.woodardcurran.com

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, MacKimme House/Stonewall Center

Summary of Remedial Areas

In-Place Management: Residual PCBs at concentrations > 1 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 masonry was 292 parts per million [ppm]):
 - Planned Sub-grade areas – Concrete materials formerly in direct contact with the caulked joint, to a minimum distance of 12 inches below the caulked joint, and to a distance equivalent to the planned final finished grade above the caulked joint (if the final grade was above the former caulked joint) were encapsulated with two coats of tan Sikagard 62 colored epoxy.
 - Planned Above-grade areas – Concrete materials to a minimum distance of 12 inches above the caulked joint or planned finished grade were encapsulated with two coats of clear Sikagard 670W acrylic coating.
- Concrete Ceiling of Pedestrian Tunnel (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 top coat of a white elastomeric acrylic coating was applied to the entire tunnel ceiling.

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



Typical Retaining Wall Application



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

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

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

- Sikagard 62 Epoxy Encapsulated Surfaces – 67 of 69 samples reported as non-detect (the two samples of former direct contact materials in the pedestrian tunnel reported PCBs at concentrations of 7.16 and 24 µg/100 cm²; however, these areas were subsequently covered with a new bead of caulking and a final acrylic coat).
- Sikagard 670W Acrylic Coating Encapsulated Surfaces – 64 of 64 samples collected from above grade locations were reported as non-detect (< 1.0 µg/100 cm²).
- Encapsulated Concrete Building Foundations (July and August 2011) – 6 of 7 samples collected at grade (both epoxy and clear coated surfaces) reported as non-detect and one sample reported at a concentration of 4 µg/100 cm²; however, materials in this area were recoated and results from the follow-up wipe samples indicated PCBs were non-detect (< 1.0 µg/100 cm²).

Monitoring and Maintenance Implementation Plan

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

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 as follows:

- Concrete Structures (retaining walls and ground surface structures):
 - Sub-grade areas (Sikagard 62 epoxy) – Given the inaccessibility to these areas and that all 67 baseline wipe samples were non-detect for PCBs, no long term monitoring samples were proposed from these areas. However, due to modifications to the final site grade during construction, areas encapsulated with the Sikagard 62 liquid epoxy coating remain visible above grade over select portions of the Southwest Concourse. As such, both visual inspections of the epoxy coating and collection of verification wipe samples have been added to the program similar to the planned above grade areas (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.

Monitoring Activities – August 2012

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

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

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

- Sikagard 62 Liquid Epoxy: The visual inspection conducted found no evidence of significant peeling, breakage, or brittleness of the coating. However, some damage was observed at a few isolated exterior locations. Areas of observed deterioration appear to be related to physical impacts to the coating (e.g., impacts from a metal grate at the Kennedy House). Locations of these areas are depicted on Figure 2-1.
- Sikagard 670W: Visual inspection of the clear acrylic coating indicated that the coating remains in good condition over the majority of the encapsulated surfaces. Where present, areas of flaking and peeling were limited to isolated areas typically 4 to 6 inches in size (some areas were observed up to 1 foot in size). More widespread flaking and peeling was observed at two locations: the concrete retaining wall north of the Cance House, and the concrete building wall on the northeast face of the southwest end of the MacKimme House. In addition, areas of flaking and peeling of the Sikagard 670W on the concrete building wall on the southeast corner of the Crampton House appeared to be co-located with areas of visible concrete efflorescence (note, concrete efflorescence was also observed on this building wall outside the limits of the clear coat application).

The locations in which flaking and peeling were observed are depicted on Figure 2-1 (Note: the areas depicted are intended to indicate concrete surfaces on which limited areas of flaking and peeling described above were observed).

- Concrete Ceiling of Pedestrian Tunnel: Visual inspection indicated that the coatings and caulking installed within the joint were in good condition. No deterioration was observed.

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 concrete coated with the Sikagard 62 liquid epoxy coating, caulking, and a final elastomeric acrylic coating in the pedestrian tunnel. Wipe samples were collected from coated surfaces without observed flaking and peeling. Analytical results are presented in Table 2-1. A summary of the samples collected is as follows:

- Sikagard 62 Liquid Epoxy: Wipe samples were collected from representative locations within each of the three main plazas in the Southwest Concourse area. A total of eight wipe samples were collected from concrete retaining walls (2 samples), building walls (3 samples), and concrete along stairs (3 samples). Analytical results were as follows:
 - PCBs were either non-detect (six samples at $< 0.20 \mu\text{g}/100 \text{ cm}^2$) or at a concentration $< 1 \mu\text{g}/100 \text{ cm}^2$ (total PCBs reported as $0.24 \mu\text{g}/100 \text{ cm}^2$) in seven of the eight samples collected; and
 - PCBs were reported at a concentration $> 1 \mu\text{g}/100 \text{ cm}^2$ in sample LTM-SWC-VWC-020 collected from concrete along a stairway in the Washington Plaza with a reported concentration of $1.4 \mu\text{g}/100 \text{ cm}^2$.
- Sikagard 670W: One wipe sample was collected from each of the three main divisions of concrete surfaces in each of the three plazas within the Southwest Concourse area (total of nine samples). Analytical results indicated that PCBs were non-detect ($< 0.20 \mu\text{g}/100 \text{ cm}^2$) in all nine samples collected.
- Concrete Ceiling of Pedestrian Tunnel: One wipe sample was collected from the caulked joint and one wipe sample was collected from coated concrete adjacent to the joint. Analytical results indicated that PCBs were non-detect ($< 0.20 \mu\text{g}/100 \text{ cm}^2$) in the sample collected from the adjacent concrete and $1.6 \mu\text{g}/100 \text{ cm}^2$ in the sample from the new caulking.

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

Monitoring Activities – October 2013

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

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

- Sikagard 62 Liquid Epoxy: The visual inspection conducted found no evidence of significant peeling, breakage, or brittleness of the coating. Some damage in isolated was observed which was consistent with August 2012 observations.
- Sikagard 670W: Visual inspection of the clear acrylic coating indicated that the coating condition remains consistent with the August 2012 observations.
- Concrete Ceiling of Pedestrian Tunnel: Visual inspection indicated that the coatings and caulking installed within the joint were in good condition. No deterioration was observed.

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 concrete coated with the Sikagard 62 liquid epoxy coating, caulking, and a final elastomeric acrylic coating in the pedestrian tunnel. Analytical results are presented on Table 2-1. A summary of the samples collected is as follows:

- Sikagard 62 Liquid Epoxy: Wipe samples were collected from representative locations within each of the three main plazas in the Southwest Concourse area. A total of eight wipe samples were collected from concrete retaining walls (2 samples [no epoxy on retaining walls is exposed in the Washington Plaza], building walls (3 samples), and concrete along stairs (3 samples). Analytical results were as follows:
 - PCBs were either non-detect (six samples at $< 0.20 \mu\text{g}/100\text{cm}^2$) or at a concentration $< 1 \mu\text{g}/100\text{cm}^2$ (total PCBs reported as $0.46 \mu\text{g}/100 \text{ cm}^2$) in seven of the eight samples collected; and
 - PCBs were reported at a concentration $> 1 \mu\text{g}/100 \text{ cm}^2$ in sample LTM-SWC-VWC-027 collected from concrete along a stairway in the Washington Plaza with a reported concentration of $2.4 \mu\text{g}/100 \text{ cm}^2$. This result is consistent with the results from wipe sampling of the same area in 2012 where PCBs were reported at a concentration of $1.4 \mu\text{g}/100\text{cm}^2$.
- Sikagard 670W: One wipe sample was collected from each of the three main divisions of concrete surfaces in each of the three plazas within the Southwest Concourse area (total of nine samples). Of these, three were collected from areas of observed flaking/peeling of the coating. Analytical results from the six samples collected from areas with intact clear coating indicated that PCBs were non-detect ($< 0.20 \mu\text{g}/100\text{cm}^2$). Analytical results from the three samples collected from areas of observed flaking/peeling indicated that PCBs were non-detect (2 samples at $< 0.20 \mu\text{g}/100\text{cm}^2$) and present at a concentration of $0.34 \mu\text{g}/100\text{cm}^2$. The sample with the reported concentration of $0.34 \mu\text{g}/100\text{cm}^2$ was collected at a location with observed efflorescence from the concrete building wall.
- Concrete Ceiling of Pedestrian Tunnel: One wipe sample was collected from the caulked joint and one wipe sample was collected from coated concrete adjacent to the joint. Analytical results were consistent with those reported in 2012 and indicated that PCBs were non-detect ($< 0.20 \mu\text{g}/100 \text{ cm}^2$) in the sample collected from the adjacent concrete and $2.7 \mu\text{g}/100 \text{ cm}^2$ in the sample from the new caulking.

Monitoring Activities – July 2014

Visual inspection and wipe sampling of encapsulated surfaces was conducted in accordance with the MMIP as described above on July 22, 2014. Results of the monitoring activities are summarized below:

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

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

- Sikagard 62 Liquid Epoxy: The visual inspection conducted found no evidence of significant peeling, breakage, or brittleness of the coating. However, some damage was observed at a few isolated exterior locations including areas not previously observed during the 2012 or 2013 monitoring. Locations of these areas are depicted on Figure 2-1.
- Sikagard 670W: Visual inspection of the clear acrylic coating indicated that the coating condition remains in good condition over the majority of the encapsulated surfaces. Overall, areas of flaking and peeling remain generally consistent with 2012 and 2013 observations. The locations in which isolated flaking and peeling were observed are depicted on Figure 2-1.
- Concrete Ceiling of Pedestrian Tunnel: Visual inspection indicated that the coatings and caulking installed within the joint were in good condition. No deterioration was observed.

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 concrete coated with the Sikagard 62 liquid epoxy coating, caulking, and a final elastomeric acrylic coating in the pedestrian tunnel. The locations of the wipe samples are presented on Figure 2-1. Analytical results are presented in Table 2-1. A summary of the samples collected is as follows:

- Sikagard 62 Liquid Epoxy: Wipe samples were collected from representative locations within each of the three main plazas in the Southwest Concourse area. A total of eight wipe samples were collected from concrete retaining walls (2 samples [no epoxy on retaining walls is exposed in the Washington Plaza], building walls (3 samples), and concrete along stairs (3 samples). Analytical results were as follows:
 - PCBs were either non-detect (seven samples at $< 0.20 \mu\text{g}/100\text{cm}^2$) or at a concentration $< 1 \mu\text{g}/100\text{cm}^2$ (total PCBs reported as $0.24 \mu\text{g}/100 \text{ cm}^2$) in the eight verification wipe samples collected. PCBs $\geq 1 \mu\text{g}/100\text{cm}^2$ were not detected on the Washington Plaza stairway as in previous years.
- Sikagard 670W: One wipe sample was collected from each of the three main divisions of concrete surfaces in each of the three plazas within the Southwest Concourse area (total of nine samples). Of these, three were collected from areas of observed flaking/peeling of the coating. Analytical results indicated that PCBs were non-detect ($< 0.20 \mu\text{g}/100\text{cm}^2$) in the nine samples collected.
- Concrete Ceiling of Pedestrian Tunnel: One wipe sample was collected from the caulked joint and one wipe sample was collected from coated concrete adjacent to the joint. Analytical results were consistent with those reported in 2012 and 2013 and indicated that PCBs were non-detect ($< 0.20 \mu\text{g}/100 \text{ cm}^2$) in the sample collected from the adjacent concrete and $1.9 \mu\text{g}/100 \text{ cm}^2$ in the sample from the replacement caulking.

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

Monitoring Activities – July 2015

Visual inspection and wipe sampling of encapsulated surfaces was conducted in accordance with the MMIP as described above on July 21, 2015. Results of the monitoring activities are summarized below:

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

- Sikagard 62 Liquid Epoxy: The visual inspection conducted found no evidence of significant peeling, breakage, or brittleness of the coating. Overall, areas of flaking and peeling remain generally consistent with previous observations. Locations of these areas are depicted on Figure 2-1 and an example of one of the damaged areas is shown in the adjacent photo.
- Sikagard 670W: Visual inspection of the clear acrylic coating indicated that the coating condition remains in good condition over the majority of the encapsulated surfaces. Overall, areas of flaking and peeling remain generally consistent with previous observations. The locations in which isolated flaking and peeling were observed are depicted on Figure 2-1.
- Concrete Ceiling of Pedestrian Tunnel: Visual inspection indicated that the coatings and caulking installed within the joint were in good condition. No deterioration was observed.



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 concrete coated with the Sikagard 62 liquid epoxy coating, caulking, and a final elastomeric acrylic coating in the pedestrian tunnel. The locations of the wipe samples are presented on Figure 2-1. Analytical results are presented in Table 2-1. A summary of the samples collected is as follows:

- Sikagard 62 Liquid Epoxy: Wipe samples were collected from representative locations within each of the three main plazas in the Southwest Concourse area. A total of eight wipe samples were collected from concrete retaining walls (2 samples [no epoxy on retaining walls is exposed in the Washington Plaza], building walls (3 samples), and concrete along stairs (3 samples). Analytical results were as follows:
 - PCBs were non-detect ($< 0.20 \mu\text{g}/100\text{cm}^2$) at seven of the eight verification wipe samples collected and;
 - PCBs were reported at a concentration $> 1 \mu\text{g}/100 \text{ cm}^2$ in sample LTM-SWC-VWC-366 collected from concrete along a stairway in the Washington Plaza with a reported concentration of $4.6 \mu\text{g}/100 \text{ cm}^2$. This result is consistent with the results from wipe sampling of the same area during previous events where PCBs were reported at concentrations of 1.4 and $2.4 \mu\text{g}/100\text{cm}^2$ in 2012 and 2013 (results from 2014 monitoring indicated PCBs were present at a concentration of $0.24 \mu\text{g}/100\text{cm}^2$). This area will identified for continued monitoring as per the long term monitoring plan.
- Sikagard 670W: One wipe sample was collected from each of the three main divisions of concrete surfaces in each of the three plazas within the Southwest Concourse area (total of nine samples). Of these, three were collected from areas of observed flaking/peeling of the coating. Analytical results indicated that PCBs were non-detect ($< 0.20 \mu\text{g}/100\text{cm}^2$) in the nine samples collected.

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

- **Concrete Ceiling of Pedestrian Tunnel:** One wipe sample was collected from the caulked joint and one wipe sample was collected from coated concrete adjacent to the joint. Analytical results were consistent with those reported in 2012, 2013 and 2014 and indicated that PCBs were non-detect ($< 0.20 \mu\text{g}/100 \text{ cm}^2$) in the sample collected from the adjacent concrete and $1.98 \mu\text{g}/100 \text{ cm}^2$ in the sample from the replacement caulking.

Based on these results, the liquid coatings applied to concrete surfaces in the Southwest Concourse and the pedestrian tunnel continue to be effective in encapsulating residual PCBs in masonry. The two samples which detected PCBs $> 1 \mu\text{g}/100 \text{ cm}^2$ ($1.98 \mu\text{g}/100 \text{ cm}^2$ in the pedestrian tunnel and $4.6 \mu\text{g}/100 \text{ cm}^2$ on epoxy coated stairs in Washington Plaza) will continue to be monitored. These areas have a lower probability of access given their locations (Pedestrian Tunnel ceiling and lower portion of a stairway).

Maintenance Activities

The isolated areas of damaged epoxy will be patched through the application of two coats of Sikagard 62 liquid epoxy to match the original application. These repairs will be conducted as part of routine maintenance in the Southwest Concourse.

With regard to the observed flaking and peeling of the clear acrylic coating on some above grade areas, UMass is still evaluating options for different coatings that could be used on these masonry surfaces. Given the minimal additional flaking and peeling observed between 2012 and 2015, it is believed that these areas observed to date are due to conditions at the time of application and not weathering of the coating over time. Based on the limited additional flaking and peeling over time and the results of the wipe testing described above (all results non-detect or $< 1 \mu\text{g}/100 \text{ cm}^2$), these areas will continue to be included for monitoring as the coating evaluation continues.

Proposed Monitoring Frequency

Due to the consistency of the surface wipe sampling results and the physical condition of the coatings, it is proposed to conduct long term monitoring on a bi-annual basis with the next event scheduled for July 2017.

Table 2-1
Summary of Long Term Monitoring Wipe Sampling Results - Southwest Concourse
UMass Amherst

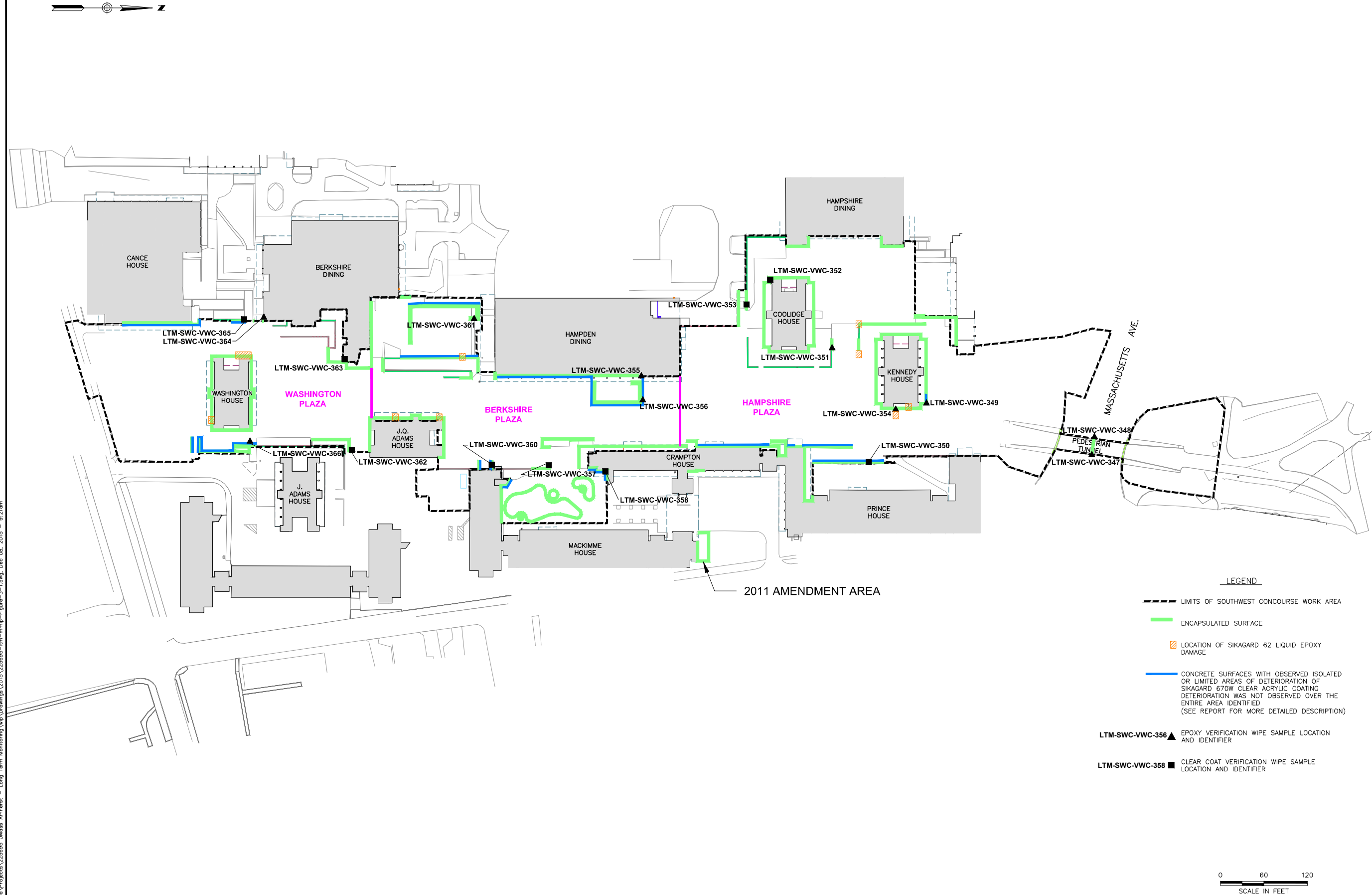
Coating/Area	Surface	Previous Sampling Events			2015 Wipe Samples			
		Sample Date	Sample ID	Total PCBs (ug/100cm ²)	Sample Date	Sample ID	Total PCBs (ug/100cm ²)	Comment
Southwest Concourse - Epoxy Coatings								
Washington Plaza	Building Wall	8/20/2012	LTM-SWC-VWC-017	0.24	7/21/15	LTM-SWC-VWC-364	< 0.20	
		10/10/2013	LTM-SWC-VWC-028	< 0.20				
		7/22/2014	LTM-SWC-VWC-266	<0.20				
	Retaining Wall	--	--	--				No epoxy observed on retaining walls above grade within Washington Plaza therefore sample location not warranted.
	Stairs	8/15/2012	LTM-SWC-VWC-020	1.4	7/21/2015	LTM-SWC-VWC-366	4.6	Sample collected from same locations in all four years
		10/10/2013	LTM-SWC-VWC-027	2.4				
		7/22/2014	LTM-SWC-VWC-267	0.24				
Berkshire Plaza	Building Wall	8/15/2012	LTM-SWC-VWC-015	< 0.20	7/21/15	LTM-SWC-VWC-355	< 0.20	2015 wipe sample collected from same building as 2014 but different location
		10/10/2013	LTM-SWC-VWC-033	< 0.20				
		7/22/2014	LTM-SWC-VWC-262	<0.20				
	Retaining Wall	8/15/2012	LTM-SWC-VWC-012	< 0.20	7/21/15	LTM-SWC-VWC-356	< 0.20	
		10/30/2013	LTM-SWC-VWC-046	< 0.20				
		7/22/2014	LTM-SWC-VWC-260	<0.20				
	Stairs	8/15/2012	LTM-SWC-VWC-013	< 0.20	7/21/15	LTM-SWC-VWC-361	< 0.20	
		10/10/2013	LTM-SWC-VWC-035	< 0.20				
		7/22/2014	LTM-SWC-VWC-264	<0.20				
Hampshire Plaza	Building Wall	8/15/2012	LTM-SWC-VWC-005	< 0.20	7/21/15	LTM-SWC-VWC-349	< 0.20	
		10/10/2013	LTM-SWC-VWC-040	< 0.20				
		7/22/2014	LTM-SWC-VWC-255	<0.20				
	Retaining Wall	8/15/2012	LTM-SWC-VWC-007	< 0.20	7/21/15	LTM-SWC-VWC-351	< 0.20	
		10/10/2013	LTM-SWC-VWC-041	0.46				
		7/22/2014	LTM-SWC-VWC-254	<0.20				
	Stairs	8/15/2012	LTM-SWC-VWC-009	<0.20	7/21/15	LTM-SWC-VWC-354	< 0.20	2015 wipe collected from same location as 2014
		10/10/2013	LTM-SWC-VWC-038	< 0.20				
		7/22/2014	LTM-SWC-VWC-252	<0.20				
Southwest Concourse - Acrylic Coatings								
Washington Plaza	Building Wall	8/15/2012	LTM-SWC-VWC-018	< 0.20	7/21/15	LTM-SWC-VWC-363	< 0.20	
		10/10/2013	LTM-SWC-VWC-031	< 0.20				
		7/22/2014	LTM-SWC-VWC-268	<0.20				
	Retaining Wall	8/15/2012	LTM-SWC-VWC-019	< 0.20	7/21/15	LTM-SWC-VWC-365	< 0.20	2013, 2014 and 2015 samples collected from area of observed flaking/peeling
		10/10/2013	LTM-SWC-VWC-029	< 0.20				
		7/22/2014	LTM-SWC-VWC-269	<0.20				
	Stairs	8/15/2012	LTM-SWC-VWC-021	< 0.20	7/21/15	LTM-SWC-VWC-362	< 0.20	2014 and 2015 samples collected from same location
		10/10/2013	LTM-SWC-VWC-030	< 0.20				
		7/22/2014	LTM-SWC-VWC-265	<0.20				

Table 2-1
Summary of Long Term Monitoring Wipe Sampling Results - Southwest Concourse
UMass Amherst

Coating/Area	Surface	Previous Sampling Events			2015 Wipe Samples			Comment
		Sample Date	Sample ID	Total PCBs (ug/100cm ²)	Sample Date	Sample ID	Total PCBs (ug/100cm ²)	
Berkshire Plaza	Building Wall	8/15/2012	LTM-SWC-VWC-016	< 0.20	7/21/15	LTM-SWC-VWC-358	< 0.20	2013, 2014 and 2015 samples collected from observed flaking/peeling and efflorescence
		10/10/2013	LTM-SWC-VWC-036	0.34				
		7/22/2014	LTM-SWC-VWC-258	<0.20				
	Retaining Wall	8/15/2012	LTM-SWC-VWC-011	< 0.20	7/21/2015	LTM-SWC-VWC-357	< 0.20	
		10/10/2013	LTM-SWC-VWC-037	< 0.20				
		7/22/2014	LTM-SWC-VWC-259	<0.20				
	Stairs	8/15/2012	LTM-SWC-VWC-014	< 0.20	7/21/15	LTM-SWC-VWC-360	< 0.20	
		10/10/2013	LTM-SWC-VWC-032	< 0.20				
		7/22/2014	LTM-SWC-VWC-263	<0.20				
Hampshire Plaza	Building Wall	8/15/2012	LTM-SWC-VWC-006	< 0.20	7/21/15	LTM-SWC-VWC-352	< 0.20	
		10/10/2013	LTM-SWC-VWC-039	< 0.20				
		7/22/2014	LTM-SWC-VWC-256	<0.20				
	Retaining Wall	8/15/2012	LTM-SWC-VWC-008	< 0.20	7/21/2015	LTM-SWC-VWC-350	< 0.20	2013, 2014 and 2015 samples collected from area of observed flaking/peeling on same retaining wall
		10/10/2013	LTM-SWC-VWC-042	< 0.20				
		7/22/2014	LTM-SWC-VWC-253	<0.20				
	Stairs	8/15/2012	LTM-SWC-VWC-010	< 0.20	7/21/2015	LTM-SWC-VWC-353	< 0.20	
		10/10/2013	LTM-SWC-VWC-045	< 0.20				
		7/22/2014	LTM-SWC-VWC-257	<0.20				
Southwest Concourse - Pedestrian Tunnel								
Sika 550W White	Expansion Joint Caulking	8/15/2012	LTM-SWC-VWC-022	1.6	7/21/2015	LTM-SWC-VWC-348	1.98	Wipe samples collected from same location on the joint in all sampling events
		10/10/2013	LTM-SWC-VWK-043	2.7				
		7/22/2014	LTM-SWC-VWK-250	1.9				
	Adjacent Concrete	8/15/2012	LTM-SWC-VWC-023	< 0.20	7/21/15	LTM-SWC-VWC-347	< 0.20	
		10/10/2013	LTM-SWC-VWC-044	< 0.20				
		7/22/2014	LTM-SWC-VWC-251	<0.20				

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.

\\wcc\shared\Projects\225695\Mass Amherst - Long Term Monitoring\wp Drawings\2015\225695-ltm-mmip-figure-3-1.dwg, Dec 08, 2015 - 9:21am



AREAS OF ENCAPSULATED SURFACES
AND OBSERVED DETEIORATION

UNIVERSITY OF MASSACHUSETTS
AMHERST, MASSACHUSETTS

2015 SOUTHWEST CONCOURSE PCB
MMIP REPORT

JOB NO.: 225695.02

DATE: OCTOBER 2015

SCALE: AS NOTED

SHEET: 1 OF 1

FIGURE 2-1

REV	DESCRIPTION	CHECKED BY:	DATE
		JAH	
DESIGNED BY:	ALW	PF	
DRAWN BY:	225695-ltm-mmip-figure-3-1	dwg	



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**

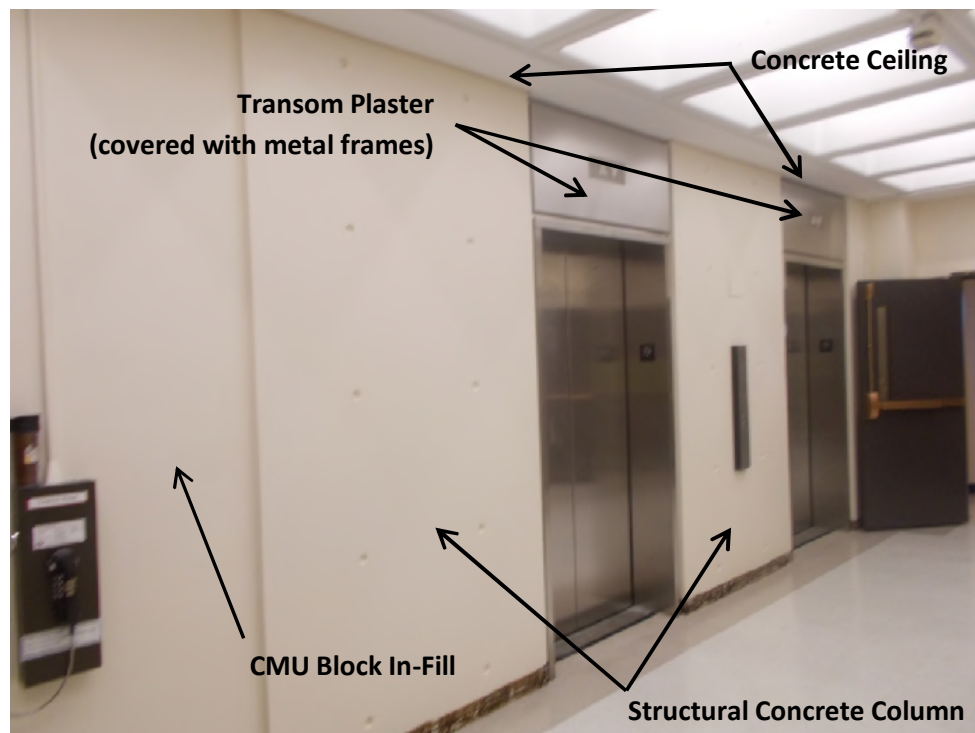
Location: W.E.B Dubois Library

Summary of Remedial Areas

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

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

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

Monitoring and Maintenance Implementation Plan

The Monitoring and Maintenance Implementation Plan (MMIP) was submitted to EPA in March 2013 and included visual inspections of encapsulated surfaces, verification wipe sampling, and continued indoor air 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 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 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

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

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

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

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

Following receipt and review of the indoor air data collected during these two events, as well as the previous indoor air sampling events, recommendations for the continued indoor air monitoring program would be proposed.

Monitoring Activities – Surface Wipe – October 2013

Visual inspections and wipe sampling of the encapsulated materials was conducted on October 11, 2013 in accordance with the MMIP as described above. Results of the monitoring activities are summarized on Table 3-1 and as follows:

- CMU Block In-Fill materials – Liquid coatings applied to the CMU block in-fills within the elevator lobbies were observed to be in good condition with no signs of wear or damage. Three wipe samples were collected from the coated CMU block in-fill materials on the 10th, 19th, and 23rd floors. Analytical results indicated that PCBs were not present above the encapsulation goal of $1 \mu\text{g}/100 \text{ cm}^2$. Two samples were non-detect for PCBs ($< 0.20 \mu\text{g}/100 \text{ cm}^2$) and one wipe sample contained PCBs at a concentration of $0.49 \mu\text{g}/100 \text{ cm}^2$.
- Structural Concrete Columns – Visual inspection found no evidence of deterioration of the coatings applied to the structural concrete columns; however, some physical wearing of the top coat of the latex paint (potentially due to rubbing of the wall surface by trash cans or other objects) was observed. Three wipe samples were collected for PCB analyses. Two wipe samples collected at a distance of 10 inches from the joint on the 16th and 21st floors were reported as non-detect for PCBs ($< 0.20 \mu\text{g}/100 \text{ cm}^2$). One wipe sample collected at a distance of 1.5 inches from the joint on the 4th floor contained PCBs with a reported concentration of 0.49

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

$\mu\text{g}/100\text{ cm}^2$. This sample was collected from the same area as the baseline verification sample which detected $4.6\text{ }\mu\text{g}/100\text{ cm}^2$.

- Concrete Ceiling – Visual inspection found no evidence of deterioration of the coatings applied to the concrete ceiling. One wipe sample was collected from the 20th floor at a distance of six inches from the joint. Analytical results indicated that PCBs were non-detect ($< 0.20\text{ }\mu\text{g}/100\text{ cm}^2$).

Monitoring Activities – Indoor Air – April and October 2013

Results from the two rounds of indoor air sampling are summarized as follows:

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

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

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

The maximum and average concentrations continue to be in the 0.450 to $1.18\text{ }\mu\text{g}/\text{m}^3$ continued monitoring range.

Monitoring Activities – Surface Wipes – July 2014

Visual inspections and wipe sampling of the encapsulated materials was conducted on July 22, 2014 in accordance with the MMIP as described above. Results of the monitoring activities are summarized on Table 3-1 and as follows:

- CMU Block In-Fill materials – Liquid coatings applied to the CMU block in-fills within the elevator lobbies were observed to be in good condition with no signs of wear or damage. Three wipe samples were collected from the coated CMU block in-fill materials on the 5th, 10th, and 13rd floors. Analytical results indicated that PCBs were non-detect ($< 0.20\text{ }\mu\text{g}/100\text{ cm}^2$) at all sample locations.
- Structural Concrete Columns – Visual inspection found no evidence of deterioration of the coatings applied to the structural concrete columns. Three wipe samples were collected for PCB analyses. Two wipe samples collected at a distance of 10 inches from the joint on the 7th and 13th floors were reported as non-detect for PCBs ($< 0.20\text{ }\mu\text{g}/100\text{ cm}^2$). One wipe sample collected at a distance of 1.5 inches from the joint on the 22nd floor contained PCBs with a reported concentration of $0.31\text{ }\mu\text{g}/100\text{ cm}^2$.
- Concrete Ceiling – Visual inspection found no evidence of deterioration of the coatings applied to the concrete ceiling. One wipe sample was collected from the 17th floor at a distance of six inches from the joint. The wipe sample collected at this location contained PCBs with a reported concentration of $0.97\text{ }\mu\text{g}/100\text{ cm}^2$.

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

Monitoring Activities – Indoor Air – February, July, and October 2014

Given the consistency in the sample results between ventilation zones and floors, the number of samples was modified from 10 samples (9 floors, 1 ambient) to 5 (4 floors, 1 ambient), consisting of 2 floors per ventilation zone. Sample locations were biased to floors with higher concentrations during previous sampling events and collected from floors 4 and 13 (zone 1) and floors 19 and 23 (zone 2). Based on 2012 and 2013 indoor air results, three rounds of sampling were conducted to capture indoor air conditions under each of the three temperature/ventilation conditions. These three conditions are as follows:

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

Results from the three rounds of indoor air sampling were as follows:

- February 24, 2014 – Analytical results indicated that total PCBs were present at concentrations ranging from 0.309 to 0.526 $\mu\text{g}/\text{m}^3$ with an average PCB concentration of 0.418 $\mu\text{g}/\text{m}^3$.
- July 22, 2014 – Analytical results indicated that total PCBs were present at concentrations ranging from 0.391 to 0.575 $\mu\text{g}/\text{m}^3$ with an average PCB concentration of 0.506 $\mu\text{g}/\text{m}^3$.
- October 10, 2014 – Analytical results indicated that the total PCBs were present at concentrations ranging from 0.436 to 0.636 $\mu\text{g}/\text{m}^3$ with an average PCB concentration of 0.539 $\mu\text{g}/\text{m}^3$.

Analytical results from the ambient air samples collected outside of the library indicated that PCBs were non-detect ($< 0.005 \mu\text{g}/\text{m}^3$) during the three sampling events.

During all three of the 2014 sampling events, the variability between the minimum, maximum, and average concentrations was relatively consistent and smaller than during previous monitoring events. In addition, the maximum and average concentrations continue to be in or slightly below the 0.450 to 1.18 $\mu\text{g}/\text{m}^3$ continued monitoring range.

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

Monitoring Activities – Surface Wipes – July 2015

Visual inspections and wipe sampling of the encapsulated materials was conducted on July 21, 2015 in accordance with the MMIP as described above. Results of the monitoring activities are summarized on Table 3-1 and as follows:

- CMU Block In-Fill materials – Liquid coatings applied to the CMU block in-fills within the elevator lobbies were observed to be in good condition with no signs of wear or damage. Three wipe samples were collected from the coated CMU block in-fill materials on the 8th, 13th, and 21st floors. Analytical results indicated that PCBs were non-detect ($< 0.20 \mu\text{g}/100 \text{ cm}^2$) at all sample locations.
- Structural Concrete Columns – Visual inspection found no evidence of deterioration of the coatings applied to the structural concrete columns. Three wipe samples were collected for PCB analyses. Two wipe samples collected at a distance of 10 inches from the joint on the 14th and 20th floors were reported as non-detect for PCBs ($< 0.20 \mu\text{g}/100 \text{ cm}^2$). One wipe sample collected at a distance of 1.5 inches from the joint on the 6th floor was reported as non-detect for PCBs ($< 0.20 \mu\text{g}/100 \text{ cm}^2$).
- Concrete Ceiling – Visual inspection found no evidence of deterioration of the coatings applied to the concrete ceiling. One wipe sample was collected from the 17th floor at a distance of six inches from the joint. The wipe sample collected at this location contained PCBs with a reported as non-detect for PCBs ($< 0.20 \mu\text{g}/100 \text{ cm}^2$).

Monitoring Activities – Indoor Air – February, July, and October 2015

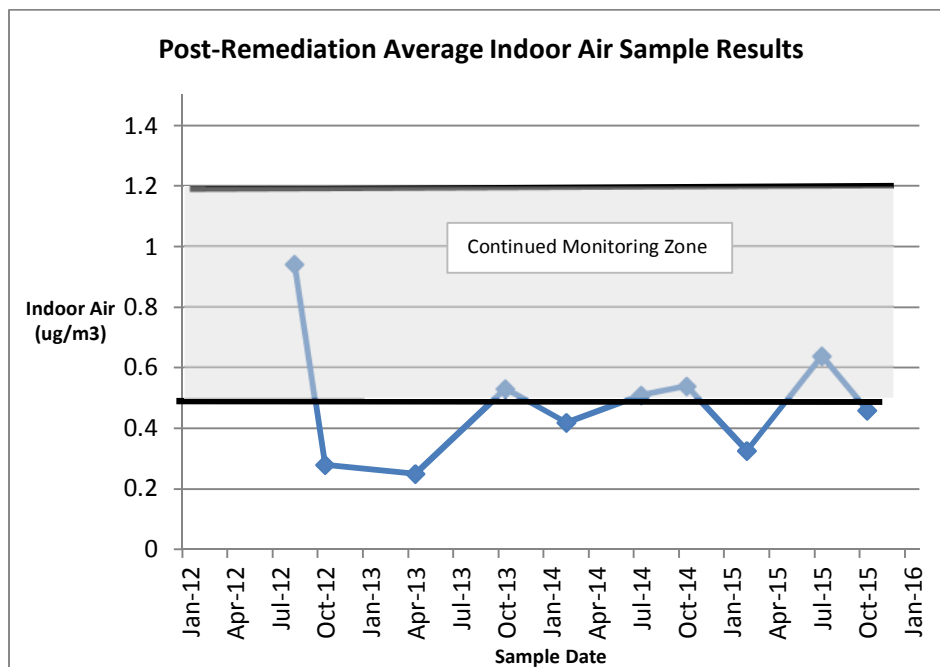
Indoor air samples were collected during three sampling events timed to capture indoor air concentrations under each of the three temperature/ventilation conditions as described above. Indoor air samples were collected from the same floors as the 2014 sampling events. Results from the three rounds of indoor air sampling are summarized on Table 3-2, along with all previous indoor air sample results. The 2015 results are summarized as follows:

- February 19, 2015 – Analytical results indicated that total PCBs were present at concentrations ranging from 0.212 to 0.449 $\mu\text{g}/\text{m}^3$ with an average PCB concentration of 0.327 $\mu\text{g}/\text{m}^3$.
- July 21, 2015 – Analytical results indicated that total PCBs were present at concentrations ranging from 0.373 to 0.834 $\mu\text{g}/\text{m}^3$ with an average PCB concentration of 0.638 $\mu\text{g}/\text{m}^3$.
- October 14, 2015 – Analytical results indicated that the total PCBs were present at concentrations ranging from 0.328 to 0.573 $\mu\text{g}/\text{m}^3$ with an average PCB concentration of 0.459 $\mu\text{g}/\text{m}^3$.
- Analytical results from the ambient air samples collected outside of the library indicated that PCBs were non-detect ($< 0.005 \mu\text{g}/\text{m}^3$) during the three sampling events.

Analytical results from all three monitoring events were relatively consistent with previous sampling activities with the maximum and average concentrations continuing to be in or slightly below the 0.500 to 1.18 $\mu\text{g}/\text{m}^3$ continued monitoring range (Note: adjusted level from 0.450 $\mu\text{g}/\text{m}^3$ to 0.500 $\mu\text{g}/\text{m}^3$ based on EPA's exposure levels for evaluating PCBs in indoor school air for students ages 19 plus and adults, as amended in July 2015).

A graph of the average indoor air concentrations detected during the post-remediation sampling events is depicted below. The highest readings were observed immediately after the remediation activities and since that time, levels have stabilized to near the lower of the target levels.

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



Corrective Actions

Based on the 2015 monitoring activities, no corrective actions are proposed at this time.

Proposed Monitoring Frequency

Based on the consistency of the indoor air samples and surface wipe data collected to date, it is proposed to modify the long term monitoring frequency as follows:

- Visual inspections and surface wipe sampling are to be conducted on a bi-annual basis with the next scheduled monitoring event in July 2017.
- Indoor air sampling is to be conducted on an annual basis given the similar readings observed during the different seasons and ventilation configurations. The one event will be conducted in July of each year to capture PCB concentrations during conditions with warmer temperatures and the ventilation systems in a more closed configuration.

Table 3-1
Summary of Long Term Monitoring Wipe Sampling Results - Dubois Library
UMass Amherst

Coating/Area	Surface	2013 Wipe Samples			2014 Wipe Samples			2015 Wipe Samples		
		Sample Date	Sample ID	Total PCBs (ug/100 cm ²)	Sample Date	Sample ID	Total PCBs (ug/100 cm ²)	Sample Date	Sample ID	Total PCBs (ug/100 cm ²)
Sikagard 55W and Acrylic Latex Paint	CMU Block In- Fill	10/11/2013	DL-23E0-VWC-146	< 0.20	--	--	--			
		10/11/2013	DL-19E0-VWC-149	< 0.20	--	--	--			
		10/11/2013	DL-10E0-VWC-151	0.49	--	--	--			
		--	--	--	7/22/2014	LTM-DL-VWC-237	<0.20			
		--	--	--	7/22/2014	LTM-DL-VWC-238	<0.20			
		--	--	--	7/22/2014	LTM-DL-VWC-239	<0.20			
								7/21/2015	LTM-DL-VWC-243	<0.20
								7/21/2015	LTM-DL-VWC-244	<0.20
								7/21/2015	LTM-DL-VWC-247	<0.20
	Structural Concrete Lobby Walls	10/11/2013	DL-4E0-VWC-152	0.49	--	--	--			
		10/11/2013	DL-16E5-VWC-150	< 0.20	--	--	--			
		10/11/2013	DL-21E3-VWC-147	< 0.20	--	--	--			
		--	--	--	7/22/2014	LTM-DL-VWC-234	0.31			
		--	--	--	7/22/2014	LTM-DL-VWC-235	<0.20			
		--	--	--	7/22/2014	LTM-DL-VWC-236	<0.20			
								7/21/2015	LTM-DL-VWC-242	<0.20
								7/21/2015	LTM-DL-VWC-245	<0.20
								7/21/2015	LTM-DL-VWC-246	<0.20
	Ceiling	10/11/2013	DL-20E3-VWC-148	< 0.20	--	--	--			
					7/22/2014	LTM-DL-VWC-240	0.97			
								7/21/2015	LTM-DL-VWC-249	<0.20

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 3-2
Summary of Indoor Air Sample Results - Dubois Library
UMass Amherst

Floor	Air Sample	PCB Concentration (µg/cartridge)	Flow Rate (L/Minute)	Duration (minutes)	PCB Concentration (µg/m ³)
Project Specific Risk-Based Action Level: 1.18 µg/m³					
Lobby Floor	Pre PCB Remediation Indoor Air Samples				
	January 15, 2010				
4	DL-4E-IAS-088	0.198	2.58	121	0.629
15	DL-15E-IAS-085	0.146	2.6	127	0.442
18	DL-18E-IAS-082	0.193	2.57	128	0.580
Blank	N/A	N/A	N/A	N/A	N/A
QA/QC Sample - Field Duplicate					
18	N/A	N/A	N/A	N/A	N/A
	Post PCB Remediation Indoor Air Samples				
	August 28, 2012				
4	DL-4E-IAS-108	0.41	2.6	240	0.690
15	DL-15E-IAS-109	0.68	2.6	240	1.146
18	DL-18E-IAS-110	0.58	2.6	240	0.977
Blank	DL-OUT-IAS-112	< 0.005	2.6	250	< 0.005
QA/QC Sample - Field Duplicate					
18	DL-18ED-IAS-111	0.56	2.6	240	0.928
	Post PCB Remediation Indoor Air Samples				
	October 16, 2012				
4	DL-4E-IAS-113	0.34	2.6406	241	0.542
5	DL-5E-IAS-114	0.21	2.6517	242	0.332
8	DL-8E-IAS-115	0.25	2.6589	242	0.394
13	DL-13E-IAS-116	0.052	2.6451	244	0.082
15	DL-15E-IAS-117	0.053	2.637	244	0.084
18	DL-18E-IAS-118	0.31	2.6225	246	0.488
19	DL-19E-IAS-119	0.1	2.6826	246	0.154
23	DL-23E-IAS-120	0.26	2.6605	248	0.4
26	DL-26E-IAS-121	0.0091	2.6456	250	0.014
Blank	DL-OUT-IAS-122	0.0	2.6591	240	-
QA/QC Sample - Field Duplicate					
13	DL-13ED-IAS-123	0.37	2.6404	244	0.583
	Post PCB Remediation Indoor Air Samples				
	April 5, 2013				
4	DL-4E-IAS-124	0.21	2.62	245	0.327
5	DL-5E-IAS-125	0.11	2.62	245	0.171
8	DL-8E-IAS-126	0.13	2.62	241	0.206
13	DL-13E-IAS-127	0.23	2.62	242	0.362
15	DL-15E-IAS-128	0.13	2.62	243	0.204
18	DL-18E-IAS-129	0.14	2.62	243	0.220
19	DL-19E-IAS-130	0.26	2.62	244	0.406
23	DL-23E-IAS-131	0.15	2.62	246	0.232
26	DL-26E-IAS-132	0.1	2.62	248	0.154
Blank	DL-OUT-IAS-134	0	2.62	243	0
QA/QC Sample - Field Duplicate					
4	DL-4ED-IAS-133	0.2	2.62	242	0.315

Table 3-2
Summary of Indoor Air Sample Results - Dubois Library
UMass Amherst

Floor	Air Sample	PCB Concentration (µg/cartridge)	Flow Rate (L/Minute)	Duration (minutes)	PCB Concentration (µg/m ³)
Project Specific Risk-Based Action Level: 1.18 µg/m³					
Post PCB Remediation Indoor Air Samples					
October 11, 2013					
4	DL-4E-IAS-135	0.33	2.63	240	0.529
5	DL-5E-IAS-136	0.12	2.63	241	0.191
8	DL-8E-IAS-137	0.22	2.64	240	0.351
13	DL-13E-IAS-138	0.50	2.62	240	0.803
15	DL-15E-IAS-139	0.30	2.63	241	0.478
18	DL-18E-IAS-145	0.31	2.63	240	0.496
19	DL-19E-IAS-140	0.60	2.64	240	0.959
23	DL-23E-IAS-141	0.35	2.62	242	0.559
26	DL-26E-IAS-142	0.23	2.65	242	0.362
Blank	DL-OUT-IAS-144	0.00	2.60	240	<0.0081
QA/QC Sample - Field Duplicate					
4	DL-4ED-IAS-143	0.21	2.63	241	0.335
Post PCB Remediation Indoor Air Samples					
February 24, 2014					
4	DL-4E-IAS-147	0.2	2.57	242	0.325
13	DL-13E-IAS-148	0.32	2.60	243	0.513
19	DL-19E-IAS-149	0.32	2.56	240	0.526
23	DL-23E-IAS-150	0.19	2.59	240	0.309
QA/QC Sample - Field Duplicate					
23	DL-4ED-IAS-151	0.36	2.55	240	0.36
Post PCB Remediation Indoor Air Samples					
July 22, 2014					
4	DL-4E-IAS-201	0.24	2.62	240	0.391
13	DL-13E-IAS-203	0.32	2.67	243	0.506
19	DL-19E-IAS-204	0.37	2.71	244	0.575
23	DL-23E-IAS-205	0.36	2.76	243	0.552
QA/QC Sample - Field Duplicate					
4	DL-4ED-IAS-202	0.26	2.74	242	0.40
Post PCB Remediation Indoor Air Samples					
October 10, 2014					
4	DL-4E-IAS-201	0.3	2.56	240	0.496
13	DL-13E-IAS-203	0.37	2.69	240	0.586
19	DL-19E-IAS-204	0.39	2.61	240	0.636
23	DL-23E-IAS-205	0.27	2.62	240	0.436
QA/QC Sample - Field Duplicate					
4	DL-4ED-IAS-202	0.38	2.64	240	0.614
Post PCB Remediation Indoor Air Samples					
February 19, 2015					
4	DL-4E-IAS-213	0.18	2.93	240	0.259
13	DL-13E-IAS-214	0.25	2.73	240	0.389
19	DL-19E-IAS-216	0.3	2.85	240	0.449
23	DL-23E-IAS-217	0.14	2.82	240	0.212
QA/QC Sample - Field Duplicate					
13	DL-13ED-IAS-205	0.28	2.82	241	0.419

Table 3-2
Summary of Indoor Air Sample Results - Dubois Library
UMass Amherst

Floor	Air Sample	PCB Concentration ($\mu\text{g}/\text{cartridge}$)	Flow Rate (L/Minute)	Duration (minutes)	PCB Concentration ($\mu\text{g}/\text{m}^3$)
Project Specific Risk-Based Action Level: $1.18 \mu\text{g}/\text{m}^3$					
Post PCB Remediation Indoor Air Samples					
July 21, 2015					
4	DL-4E-IAS-219	0.23	2.68	240	0.373
13	DL-13E-IAS-220	0.42	2.71	240	0.680
19	DL-19E-IAS-221	0.52	2.73	240	0.834
23	DL-23E-IAS-223	0.41	2.71	240	0.664
QA/QC Sample - Field Duplicate					
13	DL-13ED-IAS-222	0.41	2.72	241	0.661
Post PCB Remediation Indoor Air Samples					
October 14, 2015					
4	DL-4E-IAS-225	0.2	2.59	240	0.328 UJ
13	DL-13E-IAS-226	0.31	2.57	240	0.519 UJ
19	DL-19E-IAS-228	0.36	2.70	240	0.573 UJ
23	DL-23E-IAS-229	0.25	2.58	242	0.414 UJ
QA/QC Sample - Field Duplicate					
13	DL-13ED-IAS-222	0.31	2.66	240	0.504 UJ

Notes:

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

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

$\mu\text{g}/\text{m}^3$ = micrograms per cubic meter

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



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

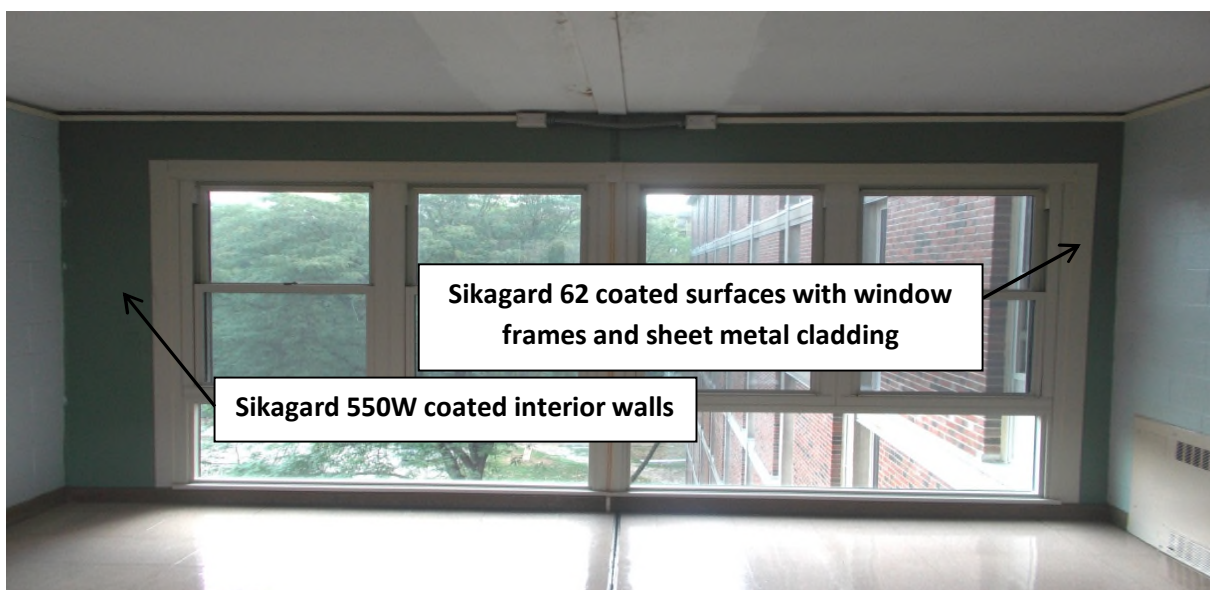
- Exterior Parapet Masonry Joints (2010): Following replacement of caulking along masonry joints at the upper parapet walls of the Field and Grayson Houses, two coats of Sikagard 62 liquid epoxy coating were applied to concrete materials formerly in direct contact with and to a distance of 6 inches from 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 6th 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 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).

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

- 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).



Webster House Elevator Lobby Walls

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

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

indicated that PCBs were non-detect (24 samples at $< 0.20 \mu\text{g}/100\text{cm}^2$) or $< 1 \mu\text{g}/100\text{cm}^2$ (2 samples with total PCBs reported at concentrations of 0.44 and $0.90 \mu\text{g}/100\text{cm}^2$).

- 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 ($< 0.20 \mu\text{g}/100\text{cm}^2$).
 - Sikagard 550W Elastomeric Coated Materials – In August 2012 following completion of the renovation project, one verification wipe sample was collected from encapsulated materials above the 6th floor elevator hall windows. Analytical results indicated that PCBs were non-detect ($< 0.20 \mu\text{g}/100\text{cm}^2$).
- 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 ($< 0.20 \mu\text{g}/100 \text{ cm}^2$) 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 ($< 0.20 \mu\text{g}/100\text{cm}^2$).
- 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 ($< 0.20 \mu\text{g}/100\text{cm}^2$).
- 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 ($< 0.20 \mu\text{g}/100\text{cm}^2$).

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 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 in January 2014 (Field and Grayson Houses) and included visual inspections and verification wipe sampling of encapsulated surfaces.

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

Based on the baseline sample results (all non-detect for PCBs) and some encapsulated areas subsequently covered by window frames and sheet metal cladding, wipe sampling was limited to accessible 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 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 at higher locations (a lift would be required).
- 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 window frames will be collected 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.

Monitoring Activities – August 2012

- Field and Grayson Houses – On August 9, 2012, coated concrete materials associated with the roof line concrete joints were inspected for signs of deterioration or damage to the Sikagard 62 liquid epoxy coating. No areas of damaged, flaking, or peeling were observed. No corrective actions were required based on this inspection.
- Webster House – Monitoring activities were conducted on August 9, 2012. No signs of damage were observed to the sheet metal cladding and window frames on the northwest building elevation. Sheet metal cladding and liquid coatings in the elevator lobby areas were observed to be in good condition with no signs of wear or damage. Wipe samples were collected from the coated CMU block walls on the 3rd, 5th, and 7th floors. Analytical results were all non-detect ($< 0.20 \mu\text{g}/100\text{cm}^2$), as summarized on Table 4-1.

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

Monitoring Activities – September 2013

- Field and Grayson Houses – On September 3, 2013, coated concrete parapet materials were inspected for signs of deterioration or damage to the Sikagard 62 liquid epoxy coating. The visual inspection found no evidence of deterioration of the coating. However, some concrete damage was observed at one joint on the west elevation of the Field House.
- 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. Wipe samples were collected from the coated CMU block walls on the 2nd, 5th, and 6th floors. Analytical results were all non-detect (< 0.20 µg/100cm², as summarized on Table 4-1.

Monitoring Activities – July 2014

- Field and Grayson Houses:
 - Exterior Parapet Masonry Joints – Coated concrete surfaces surrounding the exterior parapet masonry joints were inspected for damage. The visual inspection found no evidence of deterioration of the coating with the exception of the single joint identified at the roofline of Field House in 2013.
 - Concrete Spandrel Beams – Coated concrete surfaces surrounding exterior spandrel beams were inspected. The visual inspection found no evidence of deterioration of the coating. One surface wipe sample was collected from coated surfaces at the exterior spandrel beams at both buildings. Analytical results were non-detect (< 0.20 µg/100cm²) as summarized on Table 4-1.
 - Elevator Hall CMU Block Walls – Coated CMU block materials within the elevator lobby areas were inspected. A limited amount of the coating was observed to be missing on the surfaces within the Grayson House. One wipe sample was collected from the encapsulated surfaces within Field House. Analytical results indicated that PCBs were non-detect (< 0.20 µg/100cm²) as summarized on Table 4-1.
 - 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 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. Wipe samples were collected from the coated CMU block walls on the 2nd, 4th, and 7th floors. Analytical results indicated that PCBs were non-detect (< 0.20 µg/100cm²) as summarized on Table 4-1.

Monitoring Activities – July 2015

- Field and Grayson Houses:
 - Exterior Parapet Masonry Joints – Coated concrete surfaces surrounding the exterior parapet masonry joints were inspected for damage. The visual inspection found no evidence of deterioration of the coating with the exception of the single joint identified at the roofline of Field House in 2013.

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

- Concrete Spandrel Beams – Coated concrete surfaces surrounding exterior spandrel beams were inspected for damage. The visual inspection found no evidence of deterioration of the coating. One surface wipe sample was collected from coated surfaces at the exterior spandrel beams at both buildings. Analytical results were non-detect ($< 0.20 \mu\text{g}/100\text{cm}^2$), as summarized on Table 4-1.
- Elevator Hall CMU Block Walls – Coated CMU block materials within the elevator lobby areas were inspected. A limited amount of the coating was observed to be missing on the surfaces within the Grayson House. One wipe sample was collected from the encapsulated surfaces within Grayson House. Analytical results indicated that PCBs were non-detect ($< 0.20 \mu\text{g}/100\text{cm}^2$), as summarized on Table 4-1.
- 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 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. Wipe samples were collected from the coated CMU block walls on the 3rd, 5th, and 7th floors. Analytical results indicated that PCBs were non-detect ($< 0.20 \mu\text{g}/100\text{cm}^2$) as summarized on Table 4-1.

Corrective Actions

Based on the 2014 and 2015 monitoring, touch-up paint will be applied to the damaged coating on the south wall of the Grayson House 6th floor elevator lobby and the epoxy coating on one exterior parapet wall masonry joint needs to be repaired. These activities will be performed as part of standard maintenance activities when conducted in these areas.

Proposed Monitoring Frequency

Based on the consistent results of the visual inspections and wipe sampling from year to year, it is proposed to conduct the long term monitoring event on a bi-annual basis with the next event scheduled for July 2017.

Table 4-1
Summary of Long Term Monitoring Wipe Sampling Results - Orchard Hill
UMass Amherst

Coating/Area	Surface	Building	Sample Date	Sample ID	Total PCBs (ug/100cm ²)
Sikagard 62 Epoxy	Exterior Spandrel Beams	Field House	7/22/2014	LTM-FH-VWC-228	<0.20
			7/21/2015	LTM-FH-VWC-345	<0.20
		Grayson House	7/22/2014	LTM-GH-VWC-230	<0.20
			7/21/2015	LTM-GH-VWC-344	<0.20
Sika 550W	Interior CMU Block Walls	Webster House	8/9/2012	LTM-WH-VWC-001	< 0.20
			8/9/2012	LTM-WH-VWC-002	< 0.20
			8/9/2012	LTM-WH-VWC-003	< 0.20
			9/3/2013	LTWH-VWC-001	< 0.20
			9/3/2013	LTWH-VWC-002	< 0.20
			9/3/2013	LTWH-VWC-003	< 0.20
			7/22/2014	LTM-WH-VWC-225	<0.20
			7/22/2014	LTM-WH-VWC-226	<0.20
			7/22/2014	LTM-WH-VWC-227	<0.20
			7/21/2015	LTM-WH-VWC-341	<0.20
			7/21/2015	LTM-WH-VWC-342	<0.20
			7/21/2015	LTM-WH-VWC-343	<0.20
		Field House	7/22/2014	LTM-FH-VWC-229	<0.20
		Grayson House	7/21/2015	LTM-GH-VWC-346	<0.20

Notes:

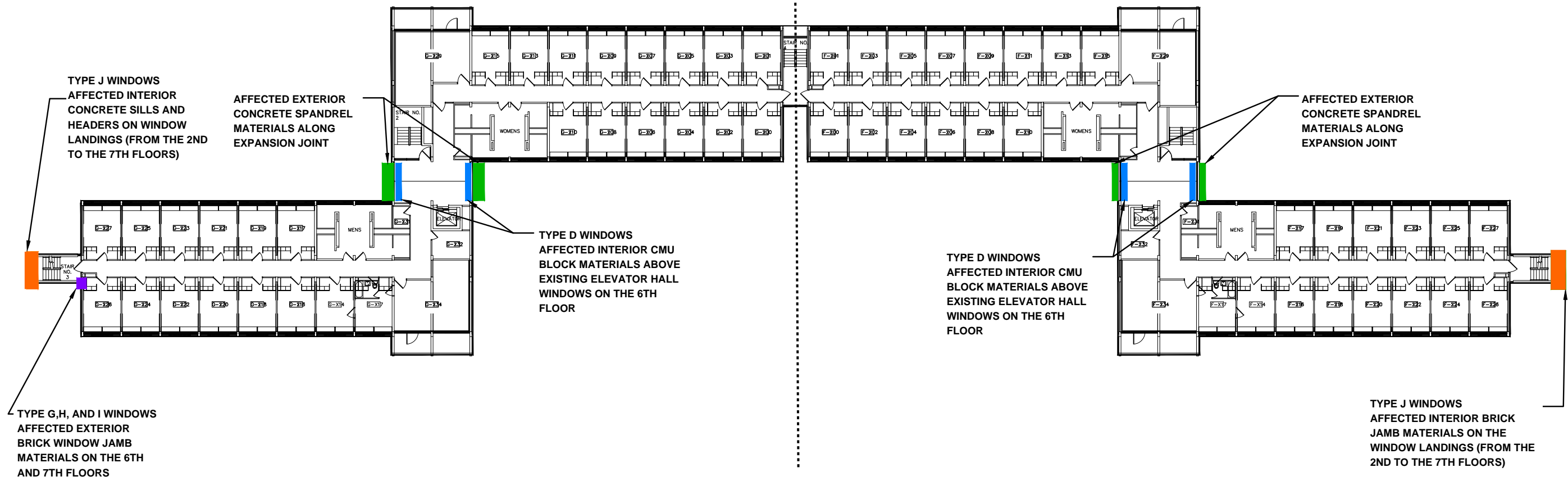
Samples submitted for PCB analysis via USEPA method 8082 with Soxhlet Extraction (3540C).

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

ENCAPSULATED BUILDING SURFACES

Grayson House

Field House



- Notes:
- 1. Original design drawings by CBI Consulting, Inc. modified to show encapsulated building surfaces.
 - 2. This drawing depicts the typical building layout for the second through seventh floors of the Grayson and Field Houses.

1520 Highland Avenue
Cheshire, Connecticut 06410
888.265.8969 | www.woodardcurran.com

**WOODARD
& CURRAN**

COMMITMENT & INTEGRITY DRIVE RESULTS

ENCAPSULATED BUILDING SURFACES

DESIGNED BY: GJF
CHECKED BY: GJF
DRAWN BY: PF

224824-UMA-GRAYSON-U2-1*.dwg

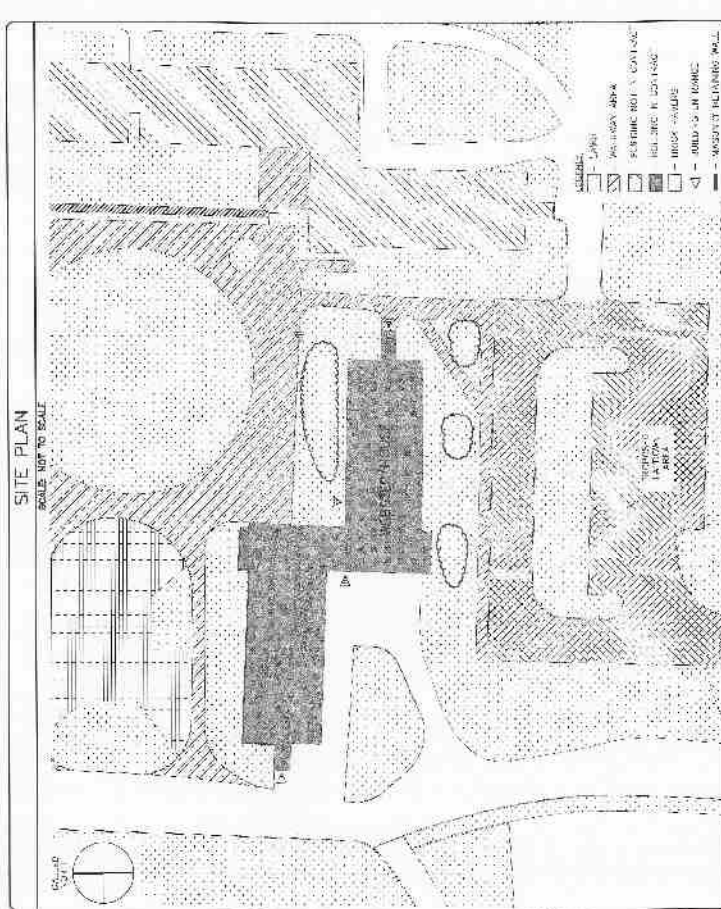
UMASS GRAYSON & FIELD HOUSE
AMHERST, MASSACHUSETTS

Long Term Monitoring and Maintenance
Report

JOB NO: 224824.00
DATE: NOVEMBER 2013
SCALE: NONE

Figure 4-1

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 Residential Area

Building: Brown, Cashin, McNamara

Summary of Remedial Areas

In-Place Management: Residual PCBs at concentrations > 1 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 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 s.f.) – Select interior concrete columns and walls at the Brown and McNamara Residences 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.

Photographs of typical coating application areas are provided below.

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



Typical Interior Encapsulated Surfaces
(Concrete Walls and Ceiling)



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

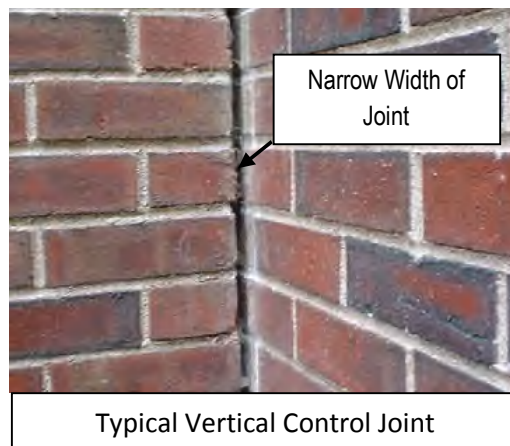
Baseline Verification Data Summary: Following remediation activities, baseline verification wipe samples were collected from encapsulated surfaces as follows:

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

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

- All baseline verification wipe samples from the interior encapsulated areas were below the target level of 1 ug/100cm² with the exception of three samples from McNamara (1.3, 1.5, and 1.6 ug/100cm²).

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

The Monitoring and Maintenance Implementation Plan (MMIP) was submitted to EPA in February 2014 and included visual inspections and wipe sampling.

Visual inspections will be conducted at representative areas of each of the types of encapsulated surfaces to confirm the presence of the encapsulating coatings/barriers. Surface wipe samples will be collected from select encapsulated surfaces to aid in determining the effectiveness of the encapsulants over time.

Encapsulated surfaces associated with the following locations have been selected for sampling as part of the long-term monitoring plan:

- Areas Adjacent to Exterior Façade Horizontal Control Joints in High Occupancy Areas (< 8'-8" ags) (860 l.f.) – 1 sample per building façade (total of 12 samples proposed; 4 per building);
- Areas Adjacent to Exterior Façade Vertical Control Joints in High Occupancy Areas (< 8' -8" ags) (878 l.f.) – 1 sample per building façade (total of 12 samples proposed; 4 per building);
- 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).

In summary, a total of 32 surface wipe samples will be collected from representative locations of the encapsulated surfaces. Where applicable, sample locations will be biased towards locations selected during baseline sampling activities.

Based on the criteria presented above, the rationale for excluding the remaining encapsulated surfaces from the sampling program is summarized below:

- Former Direct Contact Surfaces – no samples are proposed to be collected from surfaces in former direct contact with caulking based on the baseline epoxy wipe sample results and given that each of these surfaces are located beneath a secondary physical barrier (e.g., new caulking, drywall, etc.). The one exception to this condition is that given the baseline results from the exterior façade vertical joints at McNamara (12 samples with reported PCB concentrations > 1 ug/100cm²), wipe samples are proposed to be collected from the caulking at the same 4 locations described above for the wipe samples to be collected from adjacent brick surfaces. This was proposed to be conducted during the first year of monitoring with the

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

results and recommendations provided in the first year report. In addition to the hexane saturated gauze samples of the caulking, at each location a wipe sample will also be collected using a saline saturated gauze pad.

- Low-Occupancy Areas – as described above, no samples are proposed to be collected from exterior surfaces in low-occupancy areas (i.e., surfaces at heights greater than 8'-8" above ground surfaces) given their inaccessibility and the low likelihood that these surfaces will be contacted by occupants or building users.

Monitoring Activities – July 2014

Visual inspection and wipe sampling of encapsulated surfaces was conducted in accordance with the MMIP as described above on July 22, 2014. In addition, due to internal laboratory quality control issues (low surrogate recoveries as described in Attachment 6), limited wipe sampling was conducted during a second site visit on August 20, 2014. Results of the monitoring activities are summarized 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 encapsulated surfaces.
- Interior Concrete Columns/Walls: Visual inspection indicated that coatings installed to masonry materials were in good condition. No deterioration was observed.
- Interior Concrete Ceilings: Visual inspection indicated that coatings installed to masonry materials were in good condition. No deterioration was observed.

Wipe Samples: Wipe samples were collected from coated masonry surfaces as described above. Analytical results are presented in Table 5-1. A summary of the results is as follows:

- Sikagard 670W Clear Acrylic Coating: Wipe samples were collected from brick along horizontal and vertical control joints within high occupancy areas at the three buildings. A total of 24 samples were collected (12 along vertical joints and 12 along horizontal joints) as follows:
 - Horizontal Control Joints – PCBs were reported as either non-detect (7 samples at $< 0.20 \mu\text{g}/100\text{cm}^2$) or present at concentrations $< 1 \mu\text{g}/100\text{cm}^2$ (5 samples with PCB reported at concentrations up to $0.58 \mu\text{g}/100\text{cm}^2$). These results are consistent with the baseline data;
 - Vertical Control Joints – PCBs were reported as non-detect (4 samples at $< 0.20 \mu\text{g}/100\text{cm}^2$) or at concentrations ranging from 0.23 to $3.3 \mu\text{g}/100\text{cm}^2$ (8 samples with an average reported concentration of $1.35 \mu\text{g}/100\text{cm}^2$). Three of the four samples with reported concentrations $> 1 \mu\text{g}/100\text{cm}^2$ were collected from brick surfaces at the McNamara Residence. These results are consistent with the baseline data.
- 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 from the samples indicated that PCBs were either non-detect (2 samples at $< 0.20 \mu\text{g}/100\text{cm}^2$) or present at a concentration of $0.75 \mu\text{g}/100\text{cm}^2$.
- 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

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

Sikagard 670w clear acrylic). Analytical results indicated that PCBs were either non-detect (3 samples at < 0.20 µg/100cm²) or present at concentrations of 0.42 and 0.81 µg/100cm².

As indicated above, based on the baseline data, four wipe samples (one per building elevation) were collected from the surface of the replacement caulking at the McNamara building. Analytical results indicated that PCBs were present in the samples at concentrations of 13, 15, 30, and 53 µg/100cm². These results were consistent with the verification/baseline monitoring wipes collected at the completion of the project where analytical results had indicated that PCBs were present at a maximum concentration of 250 µg/100cm² on the surface of the liquid epoxy coating.

In addition to the hexane wipes, four saline wipes were collected from the locations co-located with the hexane wipe samples to evaluate alternative wipe sampling procedures to assess “surface” concentrations of PCBs to determine if the hexane was “extracting” or “pulling” the PCBs from within the porous caulking. Analytical results from the saline wipes indicated that PCBs were present at concentrations of 0.28, 0.88, 1.0, and 1.4 µg/100cm². 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, rain water, etc.).

Monitoring Activities – July 2015

Visual inspection and wipe sampling of encapsulated surfaces was conducted in accordance with the MMIP as described above on July 21, 2015. Results of the monitoring activities are summarized 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 encapsulated surfaces.
- Interior Concrete Columns/Walls: Visual inspection indicated that coatings installed to masonry materials were in good condition. No deterioration was observed.
- Interior Concrete Ceilings: Visual inspection indicated that coatings installed to masonry materials were in good condition. No deterioration was observed.

Wipe Samples: Wipe samples were collected from coated masonry surfaces as described above. Analytical results are presented in Table 5-1. A summary of the results is as follows:

- Sikagard 670W Clear Acrylic Coating: Wipe samples were collected from brick along horizontal and vertical control joints within high occupancy areas at the three buildings. A total of 24 samples were collected (12 along vertical joints and 12 along horizontal joints) as follows:
 - Vertical Control Joints -- PCBs were reported in 11 samples as either non-detect (8 samples at < 0.20 µg/100cm²) or present at concentrations < 1 µg/100cm² (3 samples with PCB reported at concentrations up to 0.95 µg/100cm²). One sample, collected from the McNamara Residence was reported with PCB concentrations > 1 µg/100cm² (3.4 µg/100cm²). These results are consistent with the baseline data and the 2014 monitoring results;
 - Horizontal Control Joints – PCBs were reported as either non-detect (11 samples at < 0.20 µg/100cm²) or present at concentrations < 1 µg/100cm² (1 sample with PCB reported at a concentration of 0.25 µg/100cm²). These results are consistent with the baseline data and the 2014 monitoring results;

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

- 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 from two of the samples indicated that PCBs were either non-detect ($< 0.20 \mu\text{g}/100\text{cm}^2$) or $< 1 \mu\text{g}/100\text{cm}^2$ ($0.21 \mu\text{g}/100\text{cm}^2$). Analytical results from the third sample indicated that PCBs were present at concentrations slightly above $1 \mu\text{g}/100\text{cm}^2$ with a reported concentration of $1.27 \mu\text{g}/100\text{cm}^2$. These results are consistent with the baseline monitoring event and the results of the 2014 monitoring. The location with reported concentration $> 1 \mu\text{g}/100\text{cm}^2$ will continue to be monitored during future events.
- 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 either non-detect (3 samples at $< 0.20 \mu\text{g}/100\text{cm}^2$) or present at concentrations of 0.38 and $0.66 \mu\text{g}/100\text{cm}^2$.

Based on the results of wipe samples collected directly from surface of the replacement caulking within the vertical control joints located in high occupancy areas (i.e., $< 8'8"$ above grade) at the McNamara building, the initial 2014 wipe event was repeated in 2015 with the collection of four wipe samples (one per building elevation). Analytical results indicated that PCBs were present in the samples at concentrations of 30, 39, 60, $77 \mu\text{g}/100\text{cm}^2$. These results were consistent with the verification/baseline monitoring wipes and the 2014 wipe data (average PCB concentration in 2014 was $27.8 \mu\text{g}/100\text{cm}^2$ and $51.5 \mu\text{g}/100\text{cm}^2$ in 2015).

Consistent with 2014, four saline wipes were collected from locations co-located with the hexane wipe samples to evaluate alternative wipe sampling procedures to assess "surface" concentrations of PCBs. Analytical results from the saline wipes indicated that PCBs were present at concentrations of 1.6, 1.92, 7.3 and $7.6 \mu\text{g}/100\text{cm}^2$. 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, rain water, etc.).

Corrective Actions

Based on the results of wipe samples collected from the replacement caulking at the vertical control joints at McNamara, UMass is evaluating products to apply as secondary physical barriers over the lower portions of the 30 control joints 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 such as Percora Sil Span or equivalent product, designed to span the control joint and adhere to the building with a silicone caulking. A product data sheet for the product is included as Attachment A.

The secondary barrier will be intended to prevent direct contact with the replacement caulking in the vertical control joints as well as to prevent potential migration of PCBs from the surface of the caulking through weathering mechanisms. Following installation, four wipe samples will be collected from the surface of the physical barrier (one per elevation). It is anticipated that after the initial wipe sampling, future long term monitoring will be limited to visual inspections to confirm the barrier is still in place. Details on the product selected and application will be provided upon selection/implementation.

Proposed Monitoring Frequency

No modifications to the monitoring frequency are proposed at this time. The next monitoring event is scheduled for July 2016.

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

UMass Amherst

Coating/Area	Surface		2014 Verification Wipes			2015 Verification Wipes		
			Sample Date	Sample ID	Total PCBs (ug/wipe)	Sample Date	Sample ID	Total PCBs (ug/wipe)
Exterior Control Joints - Adjacent Brick Materials								
High Occupancy Areas	Vertical Joints	McNamara	7/22/2014	LTM-MR-VWBV-200	1.75	7/21/2015	LTM-MR-VWBV-300	0.36 J
			7/22/2014	LTM-MR-VWBV-202	0.69	7/21/2015	LTM-MR-VWBV-303	<0.20
			7/22/2014	LTM-MR-VWBV-204	3.3	7/21/2015	LTM-MR-VWBV-306	0.95 J
			7/22/2014	LTM-MR-VWBV-206	2.4	7/21/2015	LTM-MR-VWBV-309	3.4 J
		Brown	7/22/2014	LTM-BR-VWBV-208	<0.20	7/21/2015	LTM-BR-VWB-316	<0.20
			7/22/2014	LTM-BR-VWBV-210	<0.20	7/21/2015	LTM-BR-VWB-318	<0.20
			7/22/2014	LTM-BR-VWBV-212	<0.20	7/21/2015	LTM-BR-VWB-320	<0.20
			7/22/2014	LTM-BR-VWBV-214	1.2	7/21/2015	LTM-BR-VWB-322	0.24 J
		Cashin	7/22/2014	LTM-CR-VWBV-216	0.23 J	7/21/2015	LTM-CR-VWB-324	<0.20
			7/22/2014	LTM-CR-VWBV-218	0.9	7/21/2015	LTM-CR-VWB-326	<0.20
			7/22/2014	LTM-CR-VWBV-220	<0.20 UJ	7/21/2015	LTM-CR-VWB-328	<0.20
			7/22/2014	LTM-CR-VWBV-222	0.33	7/21/2015	LTM-CR-VWB-330	<0.20
	Horizontal Joints	McNamara	7/22/2014	LTM-MR-VWBH-201	0.5	7/21/2015	LTM-MR-VWBH-302	<0.20
			7/22/2014	LTM-MR-VWBH-203	0.58	7/21/2015	LTM-MR-VWBH-305	<0.20
			7/22/2014	LTM-MR-VWBH-205	0.51	7/21/2015	LTM-MR-VWBH-308	<0.20
			7/22/2014	LTM-MR-VWBH-207	0.5	7/21/2015	LTM-MR-VWBH-311	0.25
		Brown	7/22/2014	LTM-BR-VWBH-209	<0.20	7/21/2015	LTM-BR-VWB-317	<0.20
			7/22/2014	LTM-BR-VWBH-211	<0.20	7/21/2015	LTM-BR-VWB-319	<0.20
			7/22/2014	LTM-BR-VWBH-213	<0.20	7/21/2015	LTM-BR-VWB-321	<0.20
			7/22/2014	LTM-BR-VWBH-215	<0.20	7/21/2015	LTM-BR-VWB-323	<0.20
		Cashin	7/22/2014	LTM-CR-VWBH-217	<0.20	7/21/2015	LTM-CR-VWB-325	<0.20
			7/22/2014	LTM-CR-VWBH-219	0.54	7/21/2015	LTM-CR-VWB-327	<0.20
			7/22/2014	LTM-CR-VWBH-221	<0.20	7/21/2015	LTM-CR-VWB-329	<0.20
			7/22/2014	LTM-CR-VWBH-223	<0.20	7/21/2015	LTM-CR-VWB-331	<0.20
Exterior Control Joints - Former Direct Contact Area								
High Occupancy Areas - McNamara	Surface of Replacement Caulking - Hexane Wipes		7/22/2014	LTM-MR-VWKH-273	30	7/21/2015	LTM-MR-VWKV-301	30
			7/22/2014	LTM-MR-VWKH-275	15	7/21/2015	LTM-MR-VWKV-304	60
			7/22/2014	LTM-MR-VWKH-277	13	7/21/2015	LTM-MR-VWKV-307	39
			7/22/2014	LTM-MR-VWKH-279	53	7/21/2015	LTM-MR-VWKV-310	77
	Surface of Replacement Caulking - Saline Wipes		8/19/2014	LTM-MR-VWKS-280	1.0	7/21/2015	LTM-MR-VWKV-312	1.92 J
			8/19/2014	LTM-MR-VWKS-281	0.88	7/21/2015	LTM-MR-VWKV-313	1.6
			8/19/2014	LTM-MR-VWKS-282	1.4	7/21/2015	LTM-MR-VWKV-314	7.6
			8/19/2014	LTM-MR-VWKS-283	0.28	7/21/2015	LTM-MR-VWKV-315	7.3

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

UMass Amherst

Coating/Area	Surface		2014 Verification Wipes			2015 Verification Wipes		
			Sample Date	Sample ID	Total PCBs (ug/wipe)	Sample Date	Sample ID	Total PCBs (ug/wipe)
Interior Renovation Areas								
Encapsulated Ceiling	Ceiling		7/22/2014	LTM-CRI-VWC-232	<0.20	7/21/2015	LTM-CRI-VWC-333	<0.20
			7/22/2014	LTM-CRI-VWC-233	<0.20	7/21/2015	LTM-CRI-VWC-334	<0.20
			7/22/2014	LTM-MRI-VWC-244	0.42 J	7/21/2015	LTM-MRI-VWC-335	0.66
			7/22/2014	LTM-MRI-VWC-245	0.81	7/21/2015	LTM-MRI-VWCX-336	0.38
			7/22/2014	LTM-BRI-VWC-247	<0.20	7/21/2015	LTM-BRI-VWC-337	<0.20
Encapsulated Walls	Wall		7/22/2014	LTM-MRI-VWC-242	0.75	7/21/2015	LTM-MRI-VWC-338	1.27
			7/22/2014	LTM-MRI-VWC-243	<0.20	7/21/2015	LTM-MRI-VWC-339	<0.20
			7/22/2014	LTM-BRI-VWC-246	<0.20	7/21/2015	LTM-BRI-VWC-340	0.21

Notes:

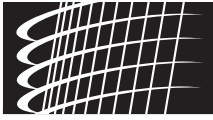
Samples submitted for PCB analysis via USEPA method 8082 with Soxhlet Extraction (3540C).

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

J/UJ = Analytical results qualified as estimated based on data validation. See Attachment 6 for additional information.

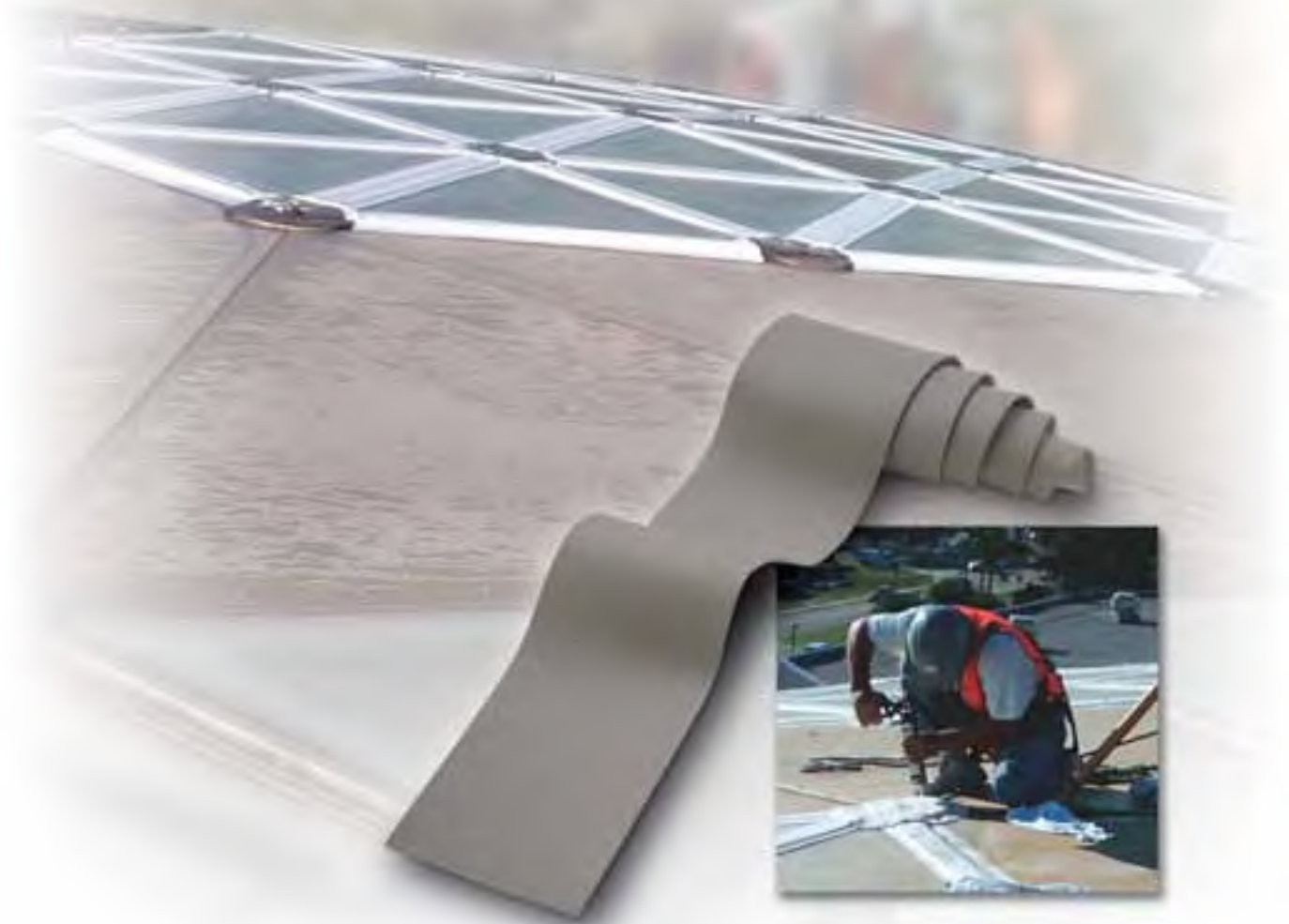
**Attachment 5 – Sylvan Residential Complex
Long-Term Maintenance and Monitoring Program
In-Place Management of PCB Impacted Materials
UMass Amherst**

ATTACHMENT A



PECORA® SIL-SPAN™

Advanced Silicone Technology for Restoration



PECORA
CORPORATION®

Architectural Weatherproofing Products
U.S.A. • since 1862



PECORA® Sil-Span™ Restoration Made Easy

Joint sealant failures are a common occurrence over the lifespan of a building and can result in substantial damage to the property. Repairing these failures can be extremely costly and time consuming particularly in exterior insulation and finish systems (EIFS).

Pecora's Sil-Span™ Preformed Silicone Profiles provide you with an alternative to the traditional method of repairing failed sealant joints.

With Sil-Span, restoring old sealant joints no longer requires the labor intensive steps of removing the existing failed sealant and surface preparation that can often result in substrate damage. Sil-span "bridges" over the joint to waterproof the building envelope while maintaining the original aesthetics of the substrate.

Pecora's Sil-Span combines the properties of advanced silicone technology with the added benefits of:

- Reduced labor costs and easy application
- No EIFS substrate damage common in restoration
- The perfect look – Sil-Span can be custom colored and textured to match virtually any finish

Sil-Span also offers a cost-effective method of correcting failures in metal curtainwalls, stucco, skylights, roofing details, reglets, coping stones and flashing details, areas in the building envelope which are difficult or almost impossible to replace or reseal through conventional methods.



What is Sil-Span™?

Pecora Sil-Span is made of a specially formulated high-molecular weight, low-modulus silicone compound that is extruded into preformed strips or custom shapes.

Properties of Sil-Span™

- ASTM C 1523
- Pre-cured sealant validation by Sealant Waterproofing & Restoration Institute
- 200% movement capability
- Resistance to ultraviolet rays & weathering
- Wide temperature performance range
- High tear resistance
- Minimal dirt pick-up

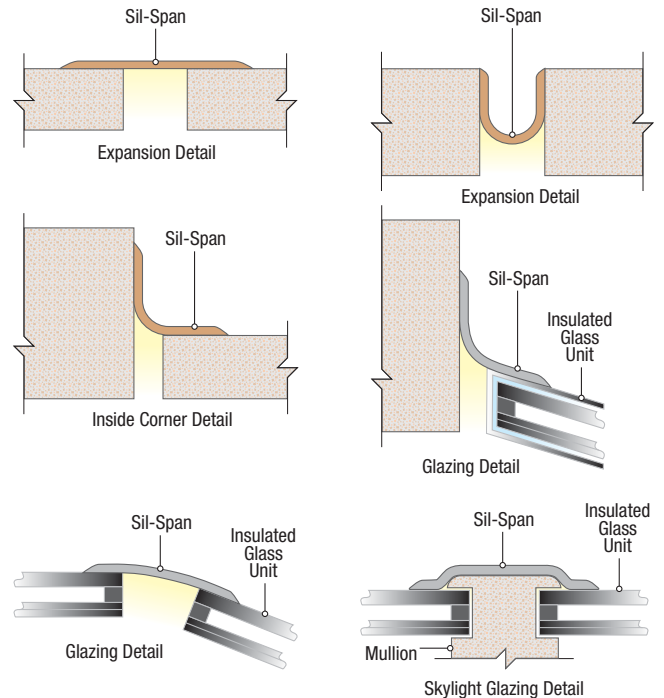
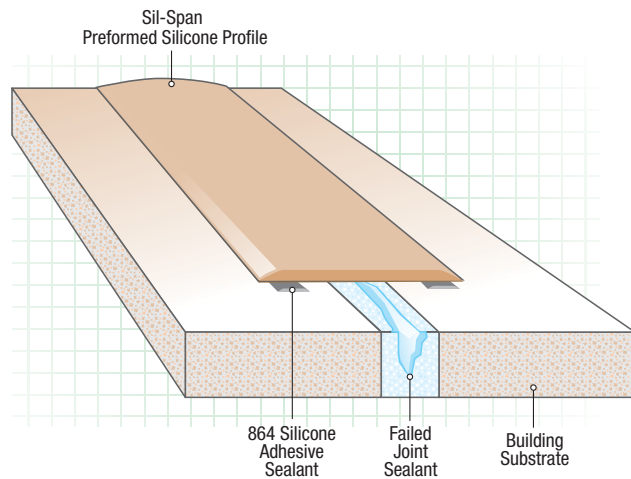


PECORA® Sil-Span™ Advanced Silicone Technology for Restoration

Typical Sil-Span™ Applications

Sil-Span's design properties enable it to be used in a variety of construction applications with expansion joints in EIFS systems being the most common. Sil-Span is also well suited for use on glass-to-glass and glass-to-metal glazing details

where the bond between these two materials has failed. Sil-Span effectively bridges the gap in these applications and creates a clean, even sight line. The details below illustrate a few of these uses.

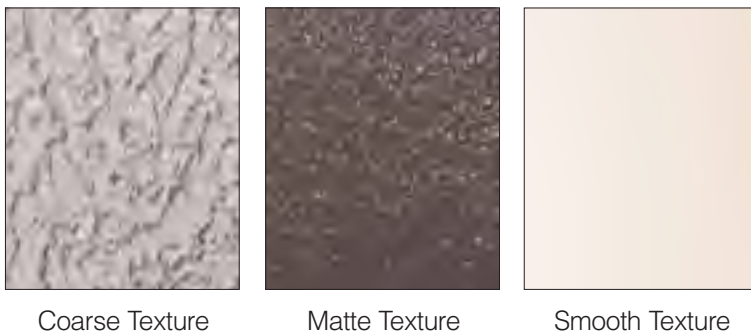


864NST Silicone Bonding/Adhesive Sealant

As the bond between the Sil-Span and the substrate, 864NST exhibits outstanding adhesion to many substrates including rough textures such as EIFS and exposed aggregate.



Sil-Span™ Textures



Sil-Span is texture matched to the most common building substrates. Matte and Coarse textures are available by special order in an almost unlimited range of computer matched custom colors.

Sil-Span™ Standard Colors (Smooth Texture)



Smooth finish Sil-Span is available in the standard colors shown above. Custom colors in a smooth finish are available in special orders. The above colors represent an indication of color. For exact color matching, a cured sample is recommended.

Pecora® Sil-Span™ Application Instructions



Sealant failure in expansion joint



Use a straight edge to mark width of the Sil-Span to be applied



Clean area with alcohol and prime if necessary



Apply Pecora 864NST adhesive/sealant to both sides of the joint



Apply Sil-Span to the prepared joint substrate



Remove excess caulk, trim ends and terminate with a cap bead of 864NST

Note: For profiles 2" or less, the bead of 864NST when applied should spread to a width of approximately 3/8". For profiles greater than 2" the bead of 864NST when applied should spread to a width of approximately 1/2". (Coverage may vary depending on porosity and texture of substrate.)

Sil-Span™ Size & Width Chart

Sil-Span is coded and sized as follows:

SS-100 = 1" x .08" SS-400 = 4" x .08"

SS-150 = 1.5" x .08" SS-500 = 5" x .08"

SS-200 = 2" x .08" SS-600 = 6" x .08"

SS-300 = 3" x .08"

Sil-Span is available by special order for custom shapes, scored for additional flexibility, or in sizes up to 12" wide.

For your next restoration project, choose Sil-Span™ for both hassle-free and worry-free performance.

For more information,
please visit www.pecora.com

Pecora Corporation
165 Wambold Rd., Harleysville, PA 19438
Phone: (215)723-6051 or (800)523-6688
Fax: (215)721-0286

 **PECORA CORPORATION®**
Architectural Weatherproofing Products
U.S.A. • since 1862

Sil-Span™

Preformed Silicone Profiles

Specification Data Sheet



1. BASIC USES

- For the repair of construction joints and/or glazing details by “bridging over” existing sealants and/or gaskets.
- For new construction applications where conventional sealants and weathersealing techniques are not adequate.

2. MANUFACTURER

Pecora Corporation
165 Wambold Road
Harleysville, PA 19438
Phone: 215-723-6051
800-523-6688
Fax: 215-721-0286
Website: www.pecora.com

3. PRODUCT DESCRIPTION

Pecora Sil-Span™ profiles are composed of high-molecular weight, low-modulus silicone, extruded via a unique process. These profiles generally are extruded in standard colors and a smooth texture, but can also be custom colored and textured to match almost any common substrate, in particular those employed in EIFS systems.

Sil-Span™ Product Features:

- extreme movement capability of 200% extension and 50% compression along with high tear resistance
- continuous movement without affecting performance
- absorption of excessive joint movement in shear, including seismic joints
- splicing and attachments of corners seams and changing planes using 864NST Silicone Sealant as the adhesive
- excellent weatherability and resistance to UV, inherent in all high quality silicones
- non-staining, non-bleeding, minimal dirt pickup
- temperature performances range of -60° to +300°F (-51°C to 149°C)
- tapered edge to create a smooth appearance

System Limitations: Sil-Span™ should not be used in/under the following installations/conditions:

- horizontal decks, patios, driveway or terrace joints where abrasion or physical abuse is encountered
- submerged joints or below-the-water line in marine applications
- surfaces with special protective or decorative coatings without prior consultation with Technical Services
- building materials that bleed oils, plasticizers or solvents, i.e. impregnated wood, oil-based caulks, some vulcanized rubber gaskets or tapes

Sizes: Standard Widths:

- 1" (25.4 mm)
- 1.5" (38.1 mm)
- 2" (50.8 mm)
- 3" (76.2 mm)
- 4" (101.6 mm)
- 5" (127.0 mm)
- 6" (152.4 mm)

Special Order: Any size not listed above, between 1" (25.4 mm) and 12" (305 mm).

Thickness: 0.08" (2.0 mm) for all widths.

Finishes/Textures: Standard Sil-Span™ profiles have a Smooth Finish. Matte and Coarse Textures are available in special order.

4. TECHNICAL DATA

Applicable Standards: Sil-Span™ profiles were independently tested in accordance with procedures in ASTM C-719 and withstood 200% extension, 50% compression

without bond loss in masonry-to-masonry, aluminum-to-glass and EIFS-to-EIFS configurations, Sil-Span conforms to ASTM C1523, 864NST Silicone conforms to ASTM C-920, Class 50, and TT-S-1543A.

5. INSTALLATION

Surface Preparation: Surfaces must be dry and clean and free of any type of contamination which could impair adhesion of the 864NST adhesive/sealant. Porous substrates should be cleaned by grinding, blasting, mechanical abrading or a combination of these methods, then wiped with isopropyl alcohol. Metal, glass and plastic surfaces should be cleaned with isopropyl alcohol or by mechanical means followed by the solvent wipe. Soap or detergent and water cleaning treatments are not recommended. Cleaning of surfaces should be done on the same day

PACKAGING

- 25' (15 m) rolls
- 100' (30 m) per carton
- 864NST Silicone**
- 10.1 fl. oz (300 ml) cartridges
- 2-gallon (7.57 L) pails

COLOR

- Bronze, Precast, Tru-White, Aluminum Stone
- 864NST Silicone**
- Bronze, Precast, Tru-White, Aluminum Stone, Limestone, Black, Tan
- Custom color extrusions and special factory applied colors are available.**

TYPICAL PHYSICAL PROPERTIES

Test Property	Value	Test Procedure
Compression Set (%)	0	ASTM D 395
Dynamic (cyclic) Movement Capability (%)	+200/-50	ASTM C1523
Elongation (%)	700	ASTM D412
Hardness (Shore A)	25	ASTM C661
Recovery (%)	100	ASTM D736
Staining/Color Change	None	ASTM C510
Tear Strength (ppi)	20	ASTM D624
Service Temperature (°F)	-60 to +300	ASTM D736
Tensile Strength (psi)	295	ASTM D412

on which the sealant is applied.

Caution: Solvents may be toxic and/or flammable. Refer to solvent manufacturer's instruction or Material Safety Data Sheets.

Priming: The 864NST bonding adhesive/sealant does not require priming on most common substrates. However, we strongly recommend adhesion pretesting, either in the field or in our laboratory, on all porous substrates or other unusual building materials and substrates where special coatings or surface treatments may impair adhesion.

Where priming is indicated, Pecora P-150 should be used on porous substrates including EIFS finishes and Pecora P-120 on special metal and plastic surfaces.

Note: Because the unique extrusion process does not put the Sil-Span™ profiles through a salt water bath, it is not necessary to clean them with an alcohol wipe before installation.

Application: Proper application is essential not only to insure a leak-free joint but also to maintain or enhance the appearance of the structure.

- Use a straight edge to mark the width of the Sil-Span™ to be applied.
- Clean area with isopropyl alcohol and prime.
- Apply 864NST Silicone adhesive/sealant to both sides of the joint. For profiles 2" (50 mm) or less, the bead of 864NST when applied should spread to a width of approximately 3/8" (9 mm) while for profiles larger than 2" (50 mm) the bead of 864NST when applied should spread to a width of 1/2 inch (12 mm).

Adhesive/sealant coverage may vary depending on the porosity or texture of the substrate.

864NST Silicone Adhesive/Sealant Coverage			
Sil-Span	864NST Bead	Tooled	Feet / 10.1 oz.
Profile Width	Diameter	Width	Cartridge
< 2 inches	.25	3/8 inches	16
> 2 inches	.30	1/2 inch	12

- Cover the joints by bedding the Sil-Span™ profiles into the adhesive/sealant.
- Firmly press the profiles onto the substrate using a Pecora-recommended roller to ensure complete contact between the adhesive/sealant and substrate and adhesive/sealant and Sil-Span™ profiles.
- Remove excess sealant; trim ends and terminals with a cap bead of 864NST.

Precautions: Sil-Span™ is safe for use as directed. When using 864NST with Sil-Span™, ensure adequate ventilation or wear appropriate NIOSH-approved respirator. Contact with uncured sealant or with vapors generated during curing may cause respiratory tract irritation. Contact with skin or eyes may cause irritation or allergic reaction. Avoid contact and wash thoroughly after handling. May be harmful if swallowed. Refer to Materials Safety Data Sheet (MSDS) for more information.

FOR PROFESSIONAL USE ONLY KEEP OUT OF THE REACH OF CHILDREN

6. AVAILABILITY AND COST

Pecora products are available from stocking distributors nationwide. For the name and telephone number of your nearest representative, call the number below or visit our website at www.pecora.com.

7. WARRANTY

Pecora Corporation warrants its products to be free of defects. Under this warranty, we will provide, at no charge, replacement materials for, or refund the purchase price of, any product proven to be defective when used in strict accordance with our published recommendations and in applications considered by us as suitable for this product. The determination of eligibility for this warranty, or the choice of remedy available under this warranty, shall be made in our sole discretion and any decisions made by Pecora Corporation shall be final. This

warranty is in lieu of any and all other warranties, expressed or implied, including but not limited to a warranty of merchantability or fitness for a particular purpose and in no case will Pecora be liable for damages other than those expressly stated in this warranty, including but not limited to incidental or consequential damages.

8. MAINTENANCE

Regular maintenance is not necessary. If a Sil-Span profile is damaged, cut out the affected area and replace with a new profile in accordance with instructions under installation, overlapping the ends of the new section to ensure proper adhesion and joint tightness.

9. TECHNICAL SERVICES

Pecora representatives are available to assist you in selecting an appropriate product and to provide on-site application instructions or to conduct jobsite inspections. For further assistance call our Technical Service Department at 800-523-6688.

10. FILING SYSTEMS

- Sweet's Catalog File: www.sweets.com
- General Building
 - 07100 Waterproofing
 - 07920 Sealants
- Civil Engineering
 - 07100 Waterproofing



**ISO 9001:2000
KEMA CERTIFICATE**

Accredited by
ANSI-RAB NAP



PEOPLE • PRODUCTS • PERFORMANCE

www.pecora.com



Attachment 6 – Data Validation Summary and Analytical Laboratory Reports

March 4, 2015

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

Project Location: UMass Amherst
Client Job Number:
Project Number: 225695
Laboratory Work Order Number: 15B0673

Enclosed are results of analyses for samples received by the laboratory on February 19, 2015. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Meghan E. Kelley
Project Manager

Table of Contents

Sample Summary	3
Case Narrative	4
Sample Results	5
Sample Preparation Information	11
QC Data	12
PCB Homologues by GC/MS with Soxhlet Extraction	12
B115913	12
Flag/Qualifier Summary	13
Certifications	14
Chain of Custody/Sample Receipt	15

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: 3/4/2015

PURCHASE ORDER NUMBER:

PROJECT NUMBER: 225695

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 15B0673

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

PROJECT LOCATION: UMass Amherst

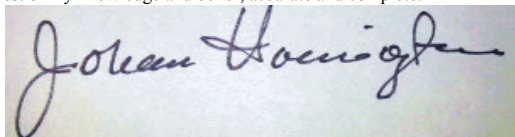
FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
DL-OUT-IAS-212	15B0673-01	Ambient Air		TO-10A/EPA 680 Modified	
DL-4E-IAS-213	15B0673-02	Indoor air		TO-10A/EPA 680 Modified	
DL-13E-IAS-214	15B0673-03	Indoor air		TO-10A/EPA 680 Modified	
DL-13ED-IAS-215	15B0673-04	Air		TO-10A/EPA 680 Modified	
DL-19E-IAS-216	15B0673-05	Indoor air		TO-10A/EPA 680 Modified	
DL-23E-IAS-217	15B0673-06	Indoor air		TO-10A/EPA 680 Modified	

CASE NARRATIVE SUMMARY

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

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

I certify that the analyses listed above, unless specifically listed as subcontracted, if any, were performed under my direction according to the approved methodologies listed in this document, and that based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

A handwritten signature in black ink, reading "Johanna Harrington", is displayed on a light-colored background. The signature is written in a cursive, flowing style.

Johanna K. Harrington

Manager, Laboratory Reporting

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

ANALYTICAL RESULTS

Project Location: UMass Amherst
Date Received: 2/19/2015
Field Sample #: DL-OUT-IAS-212
Sample ID: 15B0673-01
Sample Matrix: Ambient Air
Sampled: 2/18/2015 13:43

Sample Description/Location:
Sub Description/Location:

Flow Controller ID:
Sample Type:
Air Volume L: 669.96

Work Order: 15B0673

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	0.0015	1	2/26/15	13:08	CJM
Dichlorobiphenyls	ND	0.0010		ND	0.0015	1	2/26/15	13:08	CJM
Trichlorobiphenyls	ND	0.0010		ND	0.0015	1	2/26/15	13:08	CJM
Tetrachlorobiphenyls	ND	0.0020		ND	0.003	1	2/26/15	13:08	CJM
Pentachlorobiphenyls	ND	0.0020		ND	0.003	1	2/26/15	13:08	CJM
Hexachlorobiphenyls	ND	0.0020		ND	0.003	1	2/26/15	13:08	CJM
Heptachlorobiphenyls	ND	0.0030		ND	0.0045	1	2/26/15	13:08	CJM
Octachlorobiphenyls	ND	0.0030		ND	0.0045	1	2/26/15	13:08	CJM
Nonachlorobiphenyls	ND	0.0050		ND	0.0075	1	2/26/15	13:08	CJM
Decachlorobiphenyl	ND	0.0050		ND	0.0075	1	2/26/15	13:08	CJM
Total Polychlorinated biphenyls	0.0			0		1	2/26/15	13:08	CJM
Surrogates	% Recovery			% REC Limits					
Tetrachloro-m-xylene	72.9			50-125			2/26/15	13:08	

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

ANALYTICAL RESULTS

Project Location: UMass Amherst
Date Received: 2/19/2015
Field Sample #: DL-4E-IAS-213
Sample ID: 15B0673-02
Sample Matrix: Indoor air
Sampled: 2/18/2015 13:56

Sample Description/Location:
Sub Description/Location:

Flow Controller ID:
Sample Type:
Air Volume L: 703.2

Work Order: 15B0673

TO-10A/EPA 680 Modified

Analyte	Total µg		Flag/Qual	ug/m3		Dilution	Date/Time		
	Results	RL		Results	RL		Analyzed	Analyst	
Monochlorobiphenyls	0.0043	0.0010		0.0061	0.0014	1	2/26/15	13:37	CJM
Dichlorobiphenyls	0.0070	0.0010		0.010	0.0014	1	2/26/15	13:37	CJM
Trichlorobiphenyls	0.019	0.0010		0.027	0.0014	1	2/26/15	13:37	CJM
Tetrachlorobiphenyls	0.054	0.0020		0.077	0.0028	1	2/26/15	13:37	CJM
Pentachlorobiphenyls	0.064	0.0020		0.091	0.0028	1	2/26/15	13:37	CJM
Hexachlorobiphenyls	0.023	0.0020		0.033	0.0028	1	2/26/15	13:37	CJM
Heptachlorobiphenyls	0.0038	0.0030		0.0054	0.0043	1	2/26/15	13:37	CJM
Octachlorobiphenyls	ND	0.0030		ND	0.0043	1	2/26/15	13:37	CJM
Nonachlorobiphenyls	ND	0.0050		ND	0.0071	1	2/26/15	13:37	CJM
Decachlorobiphenyl	ND	0.0050		ND	0.0071	1	2/26/15	13:37	CJM
Total Polychlorinated biphenyls	0.18			0.25		1	2/26/15	13:37	CJM

Surrogates	% Recovery	% REC Limits	
Tetrachloro-m-xylene	55.3	50-125	2/26/15 13:37

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

ANALYTICAL RESULTS

Project Location: UMass Amherst
Date Received: 2/19/2015
Field Sample #: DL-13E-IAS-214
Sample ID: 15B0673-03
Sample Matrix: Indoor air
Sampled: 2/18/2015 14:04

Sample Description/Location:
Sub Description/Location:

Flow Controller ID:
Sample Type:
Air Volume L: 655.2

Work Order: 15B0673

TO-10A/EPA 680 Modified

Analyte	Total µg		Flag/Qual	ug/m3		Dilution	Date/Time Analyzed	Analyst
	Results	RL		Results	RL			
Monochlorobiphenyls	ND	0.0010		ND	0.0015	1	2/26/15 14:07	CJM
Dichlorobiphenyls	0.0088	0.0010		0.013	0.0015	1	2/26/15 14:07	CJM
Trichlorobiphenyls	0.040	0.0010		0.062	0.0015	1	2/26/15 14:07	CJM
Tetrachlorobiphenyls	0.11	0.0020		0.16	0.0031	1	2/26/15 14:07	CJM
Pentachlorobiphenyls	0.087	0.0020		0.13	0.0031	1	2/26/15 14:07	CJM
Hexachlorobiphenyls	0.010	0.0020		0.015	0.0031	1	2/26/15 14:07	CJM
Heptachlorobiphenyls	ND	0.0030		ND	0.0046	1	2/26/15 14:07	CJM
Octachlorobiphenyls	ND	0.0030		ND	0.0046	1	2/26/15 14:07	CJM
Nonachlorobiphenyls	ND	0.0050		ND	0.0076	1	2/26/15 14:07	CJM
Decachlorobiphenyl	ND	0.0050		ND	0.0076	1	2/26/15 14:07	CJM
Total Polychlorinated biphenyls	0.25			0.39		1	2/26/15 14:07	CJM

Surrogates	% Recovery	% REC Limits	
Tetrachloro-m-xylene	75.4	50-125	2/26/15 14:07

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

ANALYTICAL RESULTS

Project Location: UMass Amherst
Date Received: 2/19/2015
Field Sample #: DL-13ED-IAS-215
Sample ID: 15B0673-04
Sample Matrix: Air
Sampled: 2/18/2015 14:08

Sample Description/Location:
Sub Description/Location:

Flow Controller ID:
Sample Type:
Air Volume L: 677.4

Work Order: 15B0673

TO-10A/EPA 680 Modified

Analyte	Total µg		Flag/Qual	ug/m3		Dilution	Date/Time		
	Results	RL		Results	RL		Analyzed	Analyst	
Monochlorobiphenyls	0.0025	0.0010		0.0037	0.0015	1	2/26/15	14:36	CJM
Dichlorobiphenyls	0.0099	0.0010		0.015	0.0015	1	2/26/15	14:36	CJM
Trichlorobiphenyls	0.036	0.0010		0.052	0.0015	1	2/26/15	14:36	CJM
Tetrachlorobiphenyls	0.11	0.0020		0.17	0.003	1	2/26/15	14:36	CJM
Pentachlorobiphenyls	0.10	0.0020		0.15	0.003	1	2/26/15	14:36	CJM
Hexachlorobiphenyls	0.015	0.0020		0.022	0.003	1	2/26/15	14:36	CJM
Heptachlorobiphenyls	ND	0.0030		ND	0.0044	1	2/26/15	14:36	CJM
Octachlorobiphenyls	ND	0.0030		ND	0.0044	1	2/26/15	14:36	CJM
Nonachlorobiphenyls	ND	0.0050		ND	0.0074	1	2/26/15	14:36	CJM
Decachlorobiphenyl	ND	0.0050		ND	0.0074	1	2/26/15	14:36	CJM
Total Polychlorinated biphenyls	0.28			0.41		1	2/26/15	14:36	CJM

Surrogates	% Recovery	% REC Limits	
Tetrachloro-m-xylene	55.1	50-125	2/26/15 14:36

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

ANALYTICAL RESULTS

Project Location: UMass Amherst
Date Received: 2/19/2015
Field Sample #: DL-19E-IAS-216
Sample ID: 15B0673-05
Sample Matrix: Indoor air
Sampled: 2/18/2015 14:17

Sample Description/Location:
Sub Description/Location:

Flow Controller ID:
Sample Type:
Air Volume L: 684.6

Work Order: 15B0673

TO-10A/EPA 680 Modified

Analyte	Total µg		Flag/Qual	ug/m3		Dilution	Date/Time		
	Results	RL		Results	RL		Analyzed	Analyst	
Monochlorobiphenyls	0.0082	0.0010		0.012	0.0015	1	2/26/15	15:06	CJM
Dichlorobiphenyls	0.017	0.0010		0.025	0.0015	1	2/26/15	15:06	CJM
Trichlorobiphenyls	0.051	0.0010		0.075	0.0015	1	2/26/15	15:06	CJM
Tetrachlorobiphenyls	0.10	0.0020		0.15	0.0029	1	2/26/15	15:06	CJM
Pentachlorobiphenyls	0.10	0.0020		0.15	0.0029	1	2/26/15	15:06	CJM
Hexachlorobiphenyls	0.022	0.0020		0.033	0.0029	1	2/26/15	15:06	CJM
Heptachlorobiphenyls	ND	0.0030		ND	0.0044	1	2/26/15	15:06	CJM
Octachlorobiphenyls	ND	0.0030		ND	0.0044	1	2/26/15	15:06	CJM
Nonachlorobiphenyls	ND	0.0050		ND	0.0073	1	2/26/15	15:06	CJM
Decachlorobiphenyl	ND	0.0050		ND	0.0073	1	2/26/15	15:06	CJM
Total Polychlorinated biphenyls	0.30			0.45		1	2/26/15	15:06	CJM

Surrogates	% Recovery	% REC Limits	
Tetrachloro-m-xylene	71.2	50-125	2/26/15 15:06

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

ANALYTICAL RESULTS

Project Location: UMass Amherst
Date Received: 2/19/2015
Field Sample #: DL-23E-IAS-217
Sample ID: 15B0673-06
Sample Matrix: Indoor air
Sampled: 2/18/2015 14:24

Sample Description/Location:
Sub Description/Location:

Flow Controller ID:
Sample Type:
Air Volume L: 679.138

Work Order: 15B0673

TO-10A/EPA 680 Modified

Analyte	Total µg		Flag/Qual	ug/m3		Dilution	Date/Time		
	Results	RL		Results	RL		Analyzed	Analyst	
Monochlorobiphenyls	0.0018	0.0010		0.0027	0.0015	1	2/26/15	15:36	CJM
Dichlorobiphenyls	0.0064	0.0010		0.0095	0.0015	1	2/26/15	15:36	CJM
Trichlorobiphenyls	0.021	0.0010		0.031	0.0015	1	2/26/15	15:36	CJM
Tetrachlorobiphenyls	0.052	0.0020		0.076	0.0029	1	2/26/15	15:36	CJM
Pentachlorobiphenyls	0.045	0.0020		0.066	0.0029	1	2/26/15	15:36	CJM
Hexachlorobiphenyls	0.012	0.0020		0.017	0.0029	1	2/26/15	15:36	CJM
Heptachlorobiphenyls	ND	0.0030		ND	0.0044	1	2/26/15	15:36	CJM
Octachlorobiphenyls	ND	0.0030		ND	0.0044	1	2/26/15	15:36	CJM
Nonachlorobiphenyls	ND	0.0050		ND	0.0074	1	2/26/15	15:36	CJM
Decachlorobiphenyl	ND	0.0050		ND	0.0074	1	2/26/15	15:36	CJM
Total Polychlorinated biphenyls	0.14			0.20		1	2/26/15	15:36	CJM

Surrogates	% Recovery	% REC Limits	
Tetrachloro-m-xylene	54.4	50-125	2/26/15 15:36

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

Sample Extraction Data

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

Lab Number [Field ID]	Batch	Initial [Cartridge	Final [mL]	Date
15B0673-01 [DL-OUT-IAS-212]	B115913	1.00	1.00	02/24/15
15B0673-02 [DL-4E-IAS-213]	B115913	1.00	1.00	02/24/15
15B0673-03 [DL-13E-IAS-214]	B115913	1.00	1.00	02/24/15
15B0673-04 [DL-13ED-IAS-215]	B115913	1.00	1.00	02/24/15
15B0673-05 [DL-19E-IAS-216]	B115913	1.00	1.00	02/24/15
15B0673-06 [DL-23E-IAS-217]	B115913	1.00	1.00	02/24/15

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 B115913 - SW-846 3540C

Blank (B115913-BLK1)

Prepared: 02/24/15 Analyzed: 02/26/15

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

Surrogate: Tetrachloro-m-xylene 0.131 0.200 65.3 50-125

LCS (B115913-BS1)

Prepared: 02/24/15 Analyzed: 02/26/15

Monochlorobiphenyls	0.099	0.0010			0.200		49.5	40-140			
Dichlorobiphenyls	0.12	0.0010			0.200		58.0	40-140			
Trichlorobiphenyls	0.13	0.0010			0.200		66.4	40-140			
Tetrachlorobiphenyls	0.28	0.0020			0.400		70.8	40-140			
Pentachlorobiphenyls	0.36	0.0020			0.400		89.3	40-140			
Hexachlorobiphenyls	0.35	0.0020			0.400		87.7	40-140			
Heptachlorobiphenyls	0.54	0.0030			0.600		90.7	40-140			
Octachlorobiphenyls	0.55	0.0030			0.600		91.0	40-140			
Nonachlorobiphenyls	0.88	0.0050			1.00		88.4	40-140			
Decachlorobiphenyl	0.67	0.0050			1.00		66.9	40-140			

Surrogate: Tetrachloro-m-xylene 0.130 0.200 65.2 50-125

LCS Dup (B115913-BSD1)

Prepared: 02/24/15 Analyzed: 02/26/15

Monochlorobiphenyls	0.13	0.0010			0.200		64.4	40-140	26.1	50	
Dichlorobiphenyls	0.16	0.0010			0.200		79.0	40-140	30.6	50	
Trichlorobiphenyls	0.18	0.0010			0.200		89.8	40-140	30.0	50	
Tetrachlorobiphenyls	0.38	0.0020			0.400		93.9	40-140	28.1	50	
Pentachlorobiphenyls	0.40	0.0020			0.400		101	40-140	11.9	50	
Hexachlorobiphenyls	0.39	0.0020			0.400		98.4	40-140	11.5	50	
Heptachlorobiphenyls	0.61	0.0030			0.600		101	40-140	11.1	50	
Octachlorobiphenyls	0.60	0.0030			0.600		99.7	40-140	9.13	50	
Nonachlorobiphenyls	0.96	0.0050			1.00		96.2	40-140	8.53	50	
Decachlorobiphenyl	0.76	0.0050			1.00		76.4	40-140	13.2	50	

Surrogate: Tetrachloro-m-xylene 0.158 0.200 78.8 50-125

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

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

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

Certifications

Analyte

AIHA

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

Code	Description	Number	Expires
AIHA	AIHA-LAP, LLC	100033	02/1/2016
MA	Massachusetts DEP	M-MA100	06/30/2015
CT	Connecticut Department of Public Health	PH-0567	09/30/2015
NY	New York State Department of Health	10899 NELAP	04/1/2015
NH-S	New Hampshire Environmental Lab	2516 NELAP	02/5/2016
RI	Rhode Island Department of Health	LAO00112	12/30/2015
NC	North Carolina Div. of Water Quality	652	12/31/2015
NJ	New Jersey DEP	MA007 NELAP	06/30/2015
FL	Florida Department of Health	E871027 NELAP	06/30/2015
VT	Vermont Department of Health Lead Laboratory	LL015036	07/30/2015
WA	State of Washington Department of Ecology	C2065	02/23/2016
ME	State of Maine	2011028	06/9/2015
VA	Commonwealth of Virginia	460217	12/14/2015
NH-P	New Hampshire Environmental Lab	2557 NELAP	09/6/2015

Phone: 413-525-2332 AIR SAMPLE CHAIN OF CUSTODY 39 SPRUCE ST

Fax: 413-525-6465

Email: info@contestlabs.com



Company Name: Woodward & Curran

Address: 40 Sussuck Rd

Andover MA

Attention: C. Franklin

Project Location: UMass Amherst

Sampled By: J. Perry

Proposal Provided? (For Billing purposes)

☐ yes ☐ no

Telephone: 978 557 8150

Project # 225695

Client PO #

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

Fax #: 3 Franklin Sperry

Email: j.perry@umass.edu

Format: ☐ EXCEL ☒ PDF ☐ GIS KEY ☐ OTHER

ONLY USE WHEN USING PUMPS

Date Sampled Start Stop

Date Time

2/18/15 21:15 21:15

9:43 13:43

2/18/15 13:56 13:56

2/18/15 21:15 21:15

10:04 14:04

2/18/15 21:15 21:15

10:08 14:08

2/18/15 21:15 21:15

15:17 14:17

2/18/15 21:15 21:15

10:23 14:24

Total Minutes Sampled

240 240 240 240 240 240

Flow Rate M³/Min. or L/Min.

2.7915 2.93 2.73 2.8225 2.8525 2.818

Volume Liters or M³

669.96 703.2 655.2 677.4 684.6 679.13

Matrix Code*

AMB 1A 1A 1A 1A 1A

CLIENT COMMENTS:

6801A-Homologs (RL < 0.10 µg/m³)

6801A-Homologs (RL < 0.10 µg/m³)

6801A-Homologs (RL < 0.10 µg/m³)

6801A-Homologs (RL < 0.10 µg/m³)

6801A-Homologs (RL < 0.10 µg/m³)

6801A-Homologs (RL < 0.10 µg/m³)

6801A-Homologs (RL < 0.10 µg/m³)

6801A-Homologs (RL < 0.10 µg/m³)

6801A-Homologs (RL < 0.10 µg/m³)

6801A-Homologs (RL < 0.10 µg/m³)

Special Requirements

Regulations:

Data Enhancement/RCP? ☐ Y ☐ N

Enhanced Data Package ☐ Y ☐ N

(Surcharge Applies)

Required Detection Limits:

Other:

Turnaround

☐ 7-Day

☒ 10-Day

☐ Other

RUSH *

☐ *24-Hr ☐ *48-Hr

☐ *72-Hr ☐ *4-Day

*Approval Required

Relinquished by: (signature) *J. Perry*

Date/Time: 2/19/15 10:45

Received by: (signature) *J. Perry*

Date/Time: 2/19/15 10:45

Relinquished by: (signature) *J. Perry*

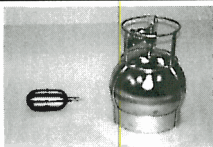
Date/Time: 2/19/15 10:45

Received by: (signature) *J. Perry*

Date/Time: 2/19/15 10:45

TURNAROUND TIME STARTS AT 9:00 A.M. THE DAY AFTER SAMPLE RECEIPT UNLESS THERE ARE QUESTIONS ON YOUR CHAIN. IF THIS FORM IS NOT FILLED OUT COMPLETELY OR IS

IN CORRECT, TURNAROUND TIME WILL NOT START UNTIL ALL QUESTIONS ARE ANSWERED BY OUR CLIENT. NELAC & AIHA-LAP, LLC Accredited/WBE/DBE Certified



www.contestlabs.com



Page 1 of 2

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

AIR Only Receipt Checklist

CLIENT NAME: Woodward + Curran RECEIVED BY: MT DATE: 2/19/15

1) Was the chain(s) of custody relinquished and signed?

☒ Yes ☐ No

2) Does the chain agree with the samples?

☒ Yes ☐ No

If not, explain:

3) Are all the samples in good condition?

☒ Yes ☐ No

If not, explain:

4) Are there any samples "On Hold"?

☐ Yes ☒ No

Stored where:

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

☐ Yes ☒ No

Who was notified _____ Date _____ Time _____

6) Location where samples are stored:

19

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

7) Number of cans Individually Certified or Batch Certified? NA

Containers received at Con-Test

	# of Containers	Types (Size, Duration)
Summa Cans (TO-14/TO-15/APH)		
Tedlar Bags		
TO-17 Tubes		
Regulators		
Restrictors		
Hg/Hopcalite Tube (NIOSH 6009)		
(TO-4A/ TO-10A/TO-13) PUFs	<u>7</u>	<u>TO-10</u>
PCB Florisil Tubes (NIOSH 5503)		
Air cassette		
PM 2.5/PM 10		
TO-11A Cartridges		
Other		

Unused Summas/PUF Media:

Unused Regulators:

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

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

Laboratory Comments:

02/11/15-01 " -04 " -07
" -02 " -05
" -03 " -06

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

<u>Question</u>	<u>Answer (True/False)</u>		<u>Comment</u>
	<u>T/F/NA</u>		
1) The coolers'/boxes' custody seal, if present, is intact.	+		
2) The cooler or samples do not appear to have been compromised or tampered with.	T		
3) Samples were received on ice.	T		
4) Cooler Temperature is acceptable.	+		
5) Cooler Temperature is recorded.	+		
6) COC is filled out in ink and legible.	+		
7) COC is filled out with all pertinent information.	T		
8) Field Sampler's name present on COC.	+		
9) Samples are received within Holding Time.	+		
10) Sample containers have legible labels.	T		
11) Containers/media are not broken or leaking and valves and caps are closed tightly.	+		
12) Sample collection date/times are provided.	+		
13) Appropriate sample/media containers are used.	+		
14) There is sufficient volume for all requested analyses, including any requested MS/MSDs.	T		
15) Trip blanks provided if applicable.	T		

Doc #278 Rev. 5 October 2014

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

Date/Time:
 Date/Time:

MT 2/19/15 18:55

July 28, 2015

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

Project Location: Umass Amherst Dubois
Client Job Number:
Project Number: 225685
Laboratory Work Order Number: 15G1011

Enclosed are results of analyses for samples received by the laboratory on July 22, 2015. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

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

Meghan E. Kelley
Project Manager

Table of Contents

Sample Summary	3
Case Narrative	4
Sample Results	5
15G1011-01	5
15G1011-02	6
15G1011-03	7
15G1011-04	8
15G1011-05	9
15G1011-06	10
15G1011-07	11
15G1011-08	12
Sample Preparation Information	13
QC Data	14
Polychlorinated Biphenyls with 3540 Soxhlet Extraction	14
B126880	14
Dual Column RPD Report	15
Flag/Qualifier Summary	17
Certifications	18
Chain of Custody/Sample Receipt	19

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: 7/28/2015

PURCHASE ORDER NUMBER:

PROJECT NUMBER: 225685

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 15G1011

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

PROJECT LOCATION: Umass Amherst Dubois

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
LTM-DL-VWC-242	15G1011-01	Wipe		SW-846 8082A	
LTM-DL-VWC-243	15G1011-02	Wipe		SW-846 8082A	
LTM-DL-VWC-244	15G1011-03	Wipe		SW-846 8082A	
LTM-DL-VWC-245	15G1011-04	Wipe		SW-846 8082A	
LTM-DL-VWC-246	15G1011-05	Wipe		SW-846 8082A	
LTM-DL-VWC-247	15G1011-06	Wipe		SW-846 8082A	
LTM-DL-VWCD-248	15G1011-07	Wipe		SW-846 8082A	
LTM-DL-VWC-249	15G1011-08	Wipe		SW-846 8082A	

CASE NARRATIVE SUMMARY

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

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

I certify that the analyses listed above, unless specifically listed as subcontracted, if any, were performed under my direction according to the approved methodologies listed in this document, and that based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

A handwritten signature in black ink, appearing to read "Tod Kopyscinski", written in a cursive style.

Tod E. Kopyscinski
Laboratory Director

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

Project Location: Umass Amherst Dubois

Sample Description:

Work Order: 15G1011

Date Received: 7/22/2015

Field Sample #: LTM-DL-VWC-242

Sampled: 7/21/2015 12:09

Sample ID: 15G1011-01

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	7/22/15	7/24/15 17:33	KAL
Aroclor-1221 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 17:33	KAL
Aroclor-1232 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 17:33	KAL
Aroclor-1242 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 17:33	KAL
Aroclor-1248 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 17:33	KAL
Aroclor-1254 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 17:33	KAL
Aroclor-1260 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 17:33	KAL
Aroclor-1262 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 17:33	KAL
Aroclor-1268 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 17:33	KAL
Surrogates	% Recovery	Recovery Limits	Flag/Qual						
Decachlorobiphenyl [1]	91.6	30-150						7/24/15 17:33	
Decachlorobiphenyl [2]	102	30-150						7/24/15 17:33	
Tetrachloro-m-xylene [1]	88.0	30-150						7/24/15 17:33	
Tetrachloro-m-xylene [2]	101	30-150						7/24/15 17:33	

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

Project Location: Umass Amherst Dubois

Sample Description:

Work Order: 15G1011

Date Received: 7/22/2015

Field Sample #: LTM-DL-VWC-243

Sampled: 7/21/2015 12:15

Sample ID: 15G1011-02

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	7/22/15	7/24/15 17:45	KAL
Aroclor-1221 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 17:45	KAL
Aroclor-1232 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 17:45	KAL
Aroclor-1242 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 17:45	KAL
Aroclor-1248 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 17:45	KAL
Aroclor-1254 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 17:45	KAL
Aroclor-1260 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 17:45	KAL
Aroclor-1262 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 17:45	KAL
Aroclor-1268 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 17:45	KAL
Surrogates	% Recovery	Recovery Limits	Flag/Qual						
Decachlorobiphenyl [1]	89.8	30-150						7/24/15 17:45	
Decachlorobiphenyl [2]	99.3	30-150						7/24/15 17:45	
Tetrachloro-m-xylene [1]	84.8	30-150						7/24/15 17:45	
Tetrachloro-m-xylene [2]	97.3	30-150						7/24/15 17:45	

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

Project Location: Umass Amherst Dubois

Sample Description:

Work Order: 15G1011

Date Received: 7/22/2015

Field Sample #: LTM-DL-VWC-244

Sampled: 7/21/2015 12:20

Sample ID: 15G1011-03

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	7/22/15	7/24/15 17:58	KAL
Aroclor-1221 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 17:58	KAL
Aroclor-1232 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 17:58	KAL
Aroclor-1242 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 17:58	KAL
Aroclor-1248 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 17:58	KAL
Aroclor-1254 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 17:58	KAL
Aroclor-1260 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 17:58	KAL
Aroclor-1262 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 17:58	KAL
Aroclor-1268 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 17:58	KAL
Surrogates	% Recovery	Recovery Limits	Flag/Qual						
Decachlorobiphenyl [1]	96.5	30-150						7/24/15 17:58	
Decachlorobiphenyl [2]	107	30-150						7/24/15 17:58	
Tetrachloro-m-xylene [1]	88.4	30-150						7/24/15 17:58	
Tetrachloro-m-xylene [2]	101	30-150						7/24/15 17:58	

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

Project Location: Umass Amherst Dubois

Sample Description:

Work Order: 15G1011

Date Received: 7/22/2015

Field Sample #: LTM-DL-VWC-245

Sampled: 7/21/2015 12:22

Sample ID: 15G1011-04

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	7/22/15	7/24/15 18:11	KAL
Aroclor-1221 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 18:11	KAL
Aroclor-1232 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 18:11	KAL
Aroclor-1242 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 18:11	KAL
Aroclor-1248 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 18:11	KAL
Aroclor-1254 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 18:11	KAL
Aroclor-1260 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 18:11	KAL
Aroclor-1262 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 18:11	KAL
Aroclor-1268 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 18:11	KAL
Surrogates	% Recovery	Recovery Limits	Flag/Qual						
Decachlorobiphenyl [1]	98.7	30-150							
Decachlorobiphenyl [2]	112	30-150							
Tetrachloro-m-xylene [1]	89.5	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: Umass Amherst Dubois

Sample Description:

Work Order: 15G1011

Date Received: 7/22/2015

Field Sample #: LTM-DL-VWC-246

Sampled: 7/21/2015 12:25

Sample ID: 15G1011-05

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	7/22/15	7/25/15 10:05	KAL
Aroclor-1221 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/25/15 10:05	KAL
Aroclor-1232 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/25/15 10:05	KAL
Aroclor-1242 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/25/15 10:05	KAL
Aroclor-1248 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/25/15 10:05	KAL
Aroclor-1254 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/25/15 10:05	KAL
Aroclor-1260 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/25/15 10:05	KAL
Aroclor-1262 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/25/15 10:05	KAL
Aroclor-1268 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/25/15 10:05	KAL
Surrogates	% Recovery	Recovery Limits	Flag/Qual						
Decachlorobiphenyl [1]	96.0	30-150						7/25/15 10:05	
Decachlorobiphenyl [2]	107	30-150						7/25/15 10:05	
Tetrachloro-m-xylene [1]	90.2	30-150						7/25/15 10:05	
Tetrachloro-m-xylene [2]	103	30-150						7/25/15 10:05	

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

Project Location: Umass Amherst Dubois

Sample Description:

Work Order: 15G1011

Date Received: 7/22/2015

Field Sample #: LTM-DL-VWC-247

Sampled: 7/21/2015 12:30

Sample ID: 15G1011-06

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	7/22/15	7/24/15 18:35	KAL
Aroclor-1221 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 18:35	KAL
Aroclor-1232 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 18:35	KAL
Aroclor-1242 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 18:35	KAL
Aroclor-1248 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 18:35	KAL
Aroclor-1254 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 18:35	KAL
Aroclor-1260 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 18:35	KAL
Aroclor-1262 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 18:35	KAL
Aroclor-1268 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 18:35	KAL
Surrogates	% Recovery	Recovery Limits	Flag/Qual						
Decachlorobiphenyl [1]	96.3	30-150						7/24/15 18:35	
Decachlorobiphenyl [2]	108	30-150						7/24/15 18:35	
Tetrachloro-m-xylene [1]	87.5	30-150						7/24/15 18:35	
Tetrachloro-m-xylene [2]	100	30-150						7/24/15 18:35	

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

Project Location: Umass Amherst Dubois

Sample Description:

Work Order: 15G1011

Date Received: 7/22/2015

Field Sample #: LTM-DL-VWCD-248

Sampled: 7/21/2015 12:30

Sample ID: 15G1011-07

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	7/22/15	7/24/15 18:48	KAL
Aroclor-1221 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 18:48	KAL
Aroclor-1232 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 18:48	KAL
Aroclor-1242 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 18:48	KAL
Aroclor-1248 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 18:48	KAL
Aroclor-1254 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 18:48	KAL
Aroclor-1260 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 18:48	KAL
Aroclor-1262 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 18:48	KAL
Aroclor-1268 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 18:48	KAL
Surrogates	% Recovery	Recovery Limits	Flag/Qual						
Decachlorobiphenyl [1]	93.9	30-150						7/24/15 18:48	
Decachlorobiphenyl [2]	105	30-150						7/24/15 18:48	
Tetrachloro-m-xylene [1]	89.4	30-150						7/24/15 18:48	
Tetrachloro-m-xylene [2]	102	30-150						7/24/15 18:48	

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

Project Location: Umass Amherst Dubois

Sample Description:

Work Order: 15G1011

Date Received: 7/22/2015

Field Sample #: LTM-DL-VWC-249

Sampled: 7/21/2015 12:35

Sample ID: 15G1011-08

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	7/22/15	7/24/15 19:01	KAL
Aroclor-1221 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 19:01	KAL
Aroclor-1232 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 19:01	KAL
Aroclor-1242 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 19:01	KAL
Aroclor-1248 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 19:01	KAL
Aroclor-1254 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 19:01	KAL
Aroclor-1260 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 19:01	KAL
Aroclor-1262 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 19:01	KAL
Aroclor-1268 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 19:01	KAL
Surrogates	% Recovery	Recovery Limits	Flag/Qual						
Decachlorobiphenyl [1]	92.3	30-150						7/24/15 19:01	
Decachlorobiphenyl [2]	104	30-150						7/24/15 19:01	
Tetrachloro-m-xylene [1]	88.0	30-150						7/24/15 19:01	
Tetrachloro-m-xylene [2]	100	30-150						7/24/15 19:01	

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

Sample Extraction Data

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

Lab Number [Field ID]	Batch	Initial [Wipe]	Final [mL]	Date
15G1011-01 [LTM-DL-VWC-242]	B126880	1.00	10.0	07/22/15
15G1011-02 [LTM-DL-VWC-243]	B126880	1.00	10.0	07/22/15
15G1011-03 [LTM-DL-VWC-244]	B126880	1.00	10.0	07/22/15
15G1011-04 [LTM-DL-VWC-245]	B126880	1.00	10.0	07/22/15
15G1011-05 [LTM-DL-VWC-246]	B126880	1.00	10.0	07/22/15
15G1011-06 [LTM-DL-VWC-247]	B126880	1.00	10.0	07/22/15
15G1011-07 [LTM-DL-VWCD-248]	B126880	1.00	10.0	07/22/15
15G1011-08 [LTM-DL-VWC-249]	B126880	1.00	10.0	07/22/15

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
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

Batch B126880 - SW-846 3540C

Blank (B126880-BLK1)

Prepared: 07/22/15 Analyzed: 07/24/15

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	1.88		µg/Wipe	2.00		93.8	30-150			
Surrogate: Decachlorobiphenyl [2C]	2.09		µg/Wipe	2.00		105	30-150			
Surrogate: Tetrachloro-m-xylene	1.73		µg/Wipe	2.00		86.6	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	1.97		µg/Wipe	2.00		98.5	30-150			

LCS (B126880-BS1)

Prepared: 07/22/15 Analyzed: 07/24/15

Aroclor-1016	0.46	0.20	µg/Wipe	0.500		91.9	40-140			
Aroclor-1016 [2C]	0.40	0.20	µg/Wipe	0.500		80.9	40-140			
Aroclor-1260	0.43	0.20	µg/Wipe	0.500		85.3	40-140			
Aroclor-1260 [2C]	0.40	0.20	µg/Wipe	0.500		80.6	40-140			
Surrogate: Decachlorobiphenyl	1.41		µg/Wipe	2.00		70.6	30-150			
Surrogate: Decachlorobiphenyl [2C]	1.53		µg/Wipe	2.00		76.4	30-150			
Surrogate: Tetrachloro-m-xylene	1.42		µg/Wipe	2.00		70.8	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	1.59		µg/Wipe	2.00		79.4	30-150			

LCS Dup (B126880-BSD1)

Prepared: 07/22/15 Analyzed: 07/24/15

Aroclor-1016	0.58	0.20	µg/Wipe	0.500		117	40-140	23.8	30	
Aroclor-1016 [2C]	0.54	0.20	µg/Wipe	0.500		107	40-140	27.8	30	
Aroclor-1260	0.56	0.20	µg/Wipe	0.500		112	40-140	27.1	30	
Aroclor-1260 [2C]	0.53	0.20	µg/Wipe	0.500		107	40-140	27.7	30	
Surrogate: Decachlorobiphenyl	1.90		µg/Wipe	2.00		94.9	30-150			
Surrogate: Decachlorobiphenyl [2C]	2.12		µg/Wipe	2.00		106	30-150			
Surrogate: Tetrachloro-m-xylene	1.72		µg/Wipe	2.00		86.2	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	1.97		µg/Wipe	2.00		98.4	30-150			

IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

LCS

Lab Sample ID: B126880-BS1 Date(s) Analyzed: 07/24/2015 07/24/2015

Instrument ID (1): Instrument ID (2):

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1016	1	0.00	0.00	0.00	0.46	
	2	0.00	0.00	0.00	0.40	14
Aroclor-1260	1	0.00	0.00	0.00	0.43	
	2	0.00	0.00	0.00	0.40	6

IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

LCS Dup

Lab Sample ID: B126880-BSD1 Date(s) Analyzed: 07/24/2015 07/24/2015
Instrument ID (1): _____ Instrument ID (2): _____
GC Column (1): _____ ID: _____ (mm) GC Column (2): _____ ID: _____ (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1016	1	0.00	0.00	0.00	0.58	
	2	0.00	0.00	0.00	0.54	8
Aroclor-1260	1	0.00	0.00	0.00	0.56	
	2	0.00	0.00	0.00	0.53	6

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

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

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

CERTIFICATIONS

Certified Analyses included in this Report

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

No certified Analyses included in this Report

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

Code	Description	Number	Expires
AIHA	AIHA-LAP, LLC	100033	02/1/2016
MA	Massachusetts DEP	M-MA100	06/30/2016
CT	Connecticut Department of Public Health	PH-0567	09/30/2015
NY	New York State Department of Health	10899 NELAP	04/1/2016
NH-S	New Hampshire Environmental Lab	2516 NELAP	02/5/2016
RI	Rhode Island Department of Health	LAO00112	12/30/2015
NC	North Carolina Div. of Water Quality	652	12/31/2015
NJ	New Jersey DEP	MA007 NELAP	09/30/2015
FL	Florida Department of Health	E871027 NELAP	06/30/2016
VT	Vermont Department of Health Lead Laboratory	LL015036	07/30/2016
WA	State of Washington Department of Ecology	C2065	02/23/2016
ME	State of Maine	2011028	06/9/2017
VA	Commonwealth of Virginia	460217	12/14/2015
NH-P	New Hampshire Environmental Lab	2557 NELAP	09/6/2015



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

CHAIN OF CUSTODY RECORD

39 Spruce Street
East longmeadow, MA 01028

Page 1 of 1

Company Name: Woodward + Looney
Address: 40 Shattuck Rd
Andover, MA
Attention: G. Franklin
Project Location: UMass Amherst Duggins
Sampled By: J. Perry
Project Proposal Provided? (for billing purposes)
☐ yes ☐ no proposal date

Telephone: 978.557.8150
Project #: 225695
Client PO#

DATA DELIVERY (check all that apply)
☐ FAX ☒ EMAIL ☐ WEBSITE
Fax #
Email: jfranklin@umass.edu
Format: ☒ PDF ☐ EXCEL ☐ OGIS
☐ OTHER

Con-Test Lab ID (Laboratory use only)	Client Sample ID / Description	Collection		Composite	Grab	Matrix Data	Conc Data
		Beginning Date/Time	Ending Date/Time				
01	LTM-DL-VWLC-242	7/21/15	12:09	X			
02	LTM-DL-VWLC-243		12:15	X			
03	LTM-DL-VWLC-244		12:20	X			
04	LTM-DL-VWLC-245		12:22	X			
05	LTM-DL-VWLC-246		12:25	X			
06	LTM-DL-VWLC-247		12:30	X			
07	LTM-DL-VWLC-248		12:30	X			
08	LTM-DL-VWLC-249		12:35	X			

Comments: PCBs via USEPA (808L) w/ sample extraction (3340C)

Turnaround [†]
☐ 7-Day
☐ 10-Day
☒ Other ^{See Key}
RUSH [†] ☐ 24-Hr ☐ 48-Hr
☐ 72-Hr ☐ 14-Day
[†] Require lab approval

Signature: [Signature] Date/Time: 7/22/15 0940
Signature: [Signature] Date/Time: 7-22-15 0945
Signature: [Signature] Date/Time: 7-22-15 1900
Signature: [Signature] Date/Time: 7/22/15 1800

Is your project MCP or RCP ?
☐ MCP Form Required
☐ RCP Form Required
☐ MA State DW Form Required PWSID #
NELAC & AIHA-LAP, LLC Accredited
WBE/DBE Certified

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



Page 1 of 2



Sample Receipt Checklist

CLIENT NAME: Woodard & Curran RECEIVED BY: LMP DATE: 7/22/15

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

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

If not, explain:

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

If not, explain:

4) How were the samples received:

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

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

Temperature °C by Temp blank _____ Temperature °C by Temp gun 47°C

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

Who was notified _____ Date _____ Time _____

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

Who was notified _____ Date _____ Time _____

7) Location where samples are stored:

19

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

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

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

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

Containers received at Con-Test

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

Laboratory Comments:

40 mL vials: # HCl _____ # Methanol _____

Doc# 277 # Bisulfate _____ # DI Water _____

Rev. 4 August 2013 # Thiosulfate _____ Unpreserved _____

Time and Date Frozen:

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

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

Doc #277 Rev. 4 August 2013

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

Date/Time:

Date/Time: 7/22/15

July 28, 2015

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

Project Location: Umass LTMM - Tobin Hall
Client Job Number:
Project Number: 225695
Laboratory Work Order Number: 15G1012

Enclosed are results of analyses for samples received by the laboratory on July 22, 2015. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, reading "Meghan E. Kelley". The signature is written in a cursive, flowing style. The first name "Meghan" is written in a larger, more prominent script, followed by "E." and "Kelley". The signature is set against a light gray rectangular background.

Meghan E. Kelley
Project Manager

Table of Contents

Sample Summary	3
Case Narrative	4
Sample Results	5
15G1012-01	5
15G1012-02	6
Sample Preparation Information	7
QC Data	8
Polychlorinated Biphenyls with 3540 Soxhlet Extraction	8
B126880	8
Dual Column RPD Report	9
Flag/Qualifier Summary	11
Certifications	12
Chain of Custody/Sample Receipt	13

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: 7/28/2015

PURCHASE ORDER NUMBER:

PROJECT NUMBER: 225695

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 15G1012

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

PROJECT LOCATION: Umass LTMM - Tobin Hall

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
LTM-TH-VWC-367	15G1012-01	Wipe		SW-846 8082A	
LTM-TH-VWC-368	15G1012-02	Wipe		SW-846 8082A	

CASE NARRATIVE SUMMARY

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

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

I certify that the analyses listed above, unless specifically listed as subcontracted, if any, were performed under my direction according to the approved methodologies listed in this document, and that based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

A handwritten signature in black ink, appearing to read "Tod Kopyscinski". The signature is fluid and cursive, with the first name "Tod" being more prominent and the last name "Kopyscinski" written in a continuous script.

Tod E. Kopyscinski
Laboratory Director

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

Project Location: Umass LTMM - Tobin Hall

Sample Description:

Work Order: 15G1012

Date Received: 7/22/2015

Field Sample #: LTM-TH-VWC-367

Sampled: 7/21/2015 13:28

Sample ID: 15G1012-01

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	7/22/15	7/24/15 19:51	KAL
Aroclor-1221 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 19:51	KAL
Aroclor-1232 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 19:51	KAL
Aroclor-1242 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 19:51	KAL
Aroclor-1248 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 19:51	KAL
Aroclor-1254 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 19:51	KAL
Aroclor-1260 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 19:51	KAL
Aroclor-1262 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 19:51	KAL
Aroclor-1268 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 19:51	KAL
Surrogates	% Recovery	Recovery Limits	Flag/Qual						
Decachlorobiphenyl [1]	88.9	30-150							
Decachlorobiphenyl [2]	99.7	30-150							
Tetrachloro-m-xylene [1]	88.5	30-150							
Tetrachloro-m-xylene [2]	100	30-150							

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

Project Location: Umass LTMM - Tobin Hall

Sample Description:

Work Order: 15G1012

Date Received: 7/22/2015

Field Sample #: LTM-TH-VWC-368

Sampled: 7/21/2015 13:30

Sample ID: 15G1012-02

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	7/22/15	7/24/15 20:04	KAL
Aroclor-1221 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 20:04	KAL
Aroclor-1232 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 20:04	KAL
Aroclor-1242 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 20:04	KAL
Aroclor-1248 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 20:04	KAL
Aroclor-1254 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 20:04	KAL
Aroclor-1260 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 20:04	KAL
Aroclor-1262 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 20:04	KAL
Aroclor-1268 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 20:04	KAL
Surrogates	% Recovery	Recovery Limits	Flag/Qual						
Decachlorobiphenyl [1]	95.6	30-150							
Decachlorobiphenyl [2]	105	30-150							
Tetrachloro-m-xylene [1]	91.1	30-150							
Tetrachloro-m-xylene [2]	104	30-150							

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

Sample Extraction Data

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

Lab Number [Field ID]	Batch	Initial [Wipe]	Final [mL]	Date
15G1012-01 [LTM-TH-VWC-367]	B126880	1.00	10.0	07/22/15
15G1012-02 [LTM-TH-VWC-368]	B126880	1.00	10.0	07/22/15

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
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

Batch B126880 - SW-846 3540C

Blank (B126880-BLK1)

Prepared: 07/22/15 Analyzed: 07/24/15

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	1.88		µg/Wipe	2.00		93.8	30-150			
Surrogate: Decachlorobiphenyl [2C]	2.09		µg/Wipe	2.00		105	30-150			
Surrogate: Tetrachloro-m-xylene	1.73		µg/Wipe	2.00		86.6	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	1.97		µg/Wipe	2.00		98.5	30-150			

LCS (B126880-BS1)

Prepared: 07/22/15 Analyzed: 07/24/15

Aroclor-1016	0.46	0.20	µg/Wipe	0.500		91.9	40-140			
Aroclor-1016 [2C]	0.40	0.20	µg/Wipe	0.500		80.9	40-140			
Aroclor-1260	0.43	0.20	µg/Wipe	0.500		85.3	40-140			
Aroclor-1260 [2C]	0.40	0.20	µg/Wipe	0.500		80.6	40-140			
Surrogate: Decachlorobiphenyl	1.41		µg/Wipe	2.00		70.6	30-150			
Surrogate: Decachlorobiphenyl [2C]	1.53		µg/Wipe	2.00		76.4	30-150			
Surrogate: Tetrachloro-m-xylene	1.42		µg/Wipe	2.00		70.8	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	1.59		µg/Wipe	2.00		79.4	30-150			

LCS Dup (B126880-BSD1)

Prepared: 07/22/15 Analyzed: 07/24/15

Aroclor-1016	0.58	0.20	µg/Wipe	0.500		117	40-140	23.8	30	
Aroclor-1016 [2C]	0.54	0.20	µg/Wipe	0.500		107	40-140	27.8	30	
Aroclor-1260	0.56	0.20	µg/Wipe	0.500		112	40-140	27.1	30	
Aroclor-1260 [2C]	0.53	0.20	µg/Wipe	0.500		107	40-140	27.7	30	
Surrogate: Decachlorobiphenyl	1.90		µg/Wipe	2.00		94.9	30-150			
Surrogate: Decachlorobiphenyl [2C]	2.12		µg/Wipe	2.00		106	30-150			
Surrogate: Tetrachloro-m-xylene	1.72		µg/Wipe	2.00		86.2	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	1.97		µg/Wipe	2.00		98.4	30-150			

IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

LCS

Lab Sample ID: B126880-BS1 Date(s) Analyzed: 07/24/2015 07/24/2015

Instrument ID (1): Instrument ID (2):

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1016	1	0.00	0.00	0.00	0.46	
	2	0.00	0.00	0.00	0.40	14
Aroclor-1260	1	0.00	0.00	0.00	0.43	
	2	0.00	0.00	0.00	0.40	6

IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

LCS Dup

Lab Sample ID: B126880-BSD1 Date(s) Analyzed: 07/24/2015 07/24/2015
Instrument ID (1): _____ Instrument ID (2): _____
GC Column (1): _____ ID: _____ (mm) GC Column (2): _____ ID: _____ (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1016	1	0.00	0.00	0.00	0.58	
	2	0.00	0.00	0.00	0.54	8
Aroclor-1260	1	0.00	0.00	0.00	0.56	
	2	0.00	0.00	0.00	0.53	6

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

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

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

CERTIFICATIONS

Certified Analyses included in this Report

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

No certified Analyses included in this Report

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

Code	Description	Number	Expires
AIHA	AIHA-LAP, LLC	100033	02/1/2016
MA	Massachusetts DEP	M-MA100	06/30/2016
CT	Connecticut Department of Public Health	PH-0567	09/30/2015
NY	New York State Department of Health	10899 NELAP	04/1/2016
NH-S	New Hampshire Environmental Lab	2516 NELAP	02/5/2016
RI	Rhode Island Department of Health	LAO00112	12/30/2015
NC	North Carolina Div. of Water Quality	652	12/31/2015
NJ	New Jersey DEP	MA007 NELAP	09/30/2015
FL	Florida Department of Health	E871027 NELAP	06/30/2016
VT	Vermont Department of Health Lead Laboratory	LL015036	07/30/2016
WA	State of Washington Department of Ecology	C2065	02/23/2016
ME	State of Maine	2011028	06/9/2017
VA	Commonwealth of Virginia	460217	12/14/2015
NH-P	New Hampshire Environmental Lab	2557 NELAP	09/6/2015

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



Page 1 of 2



Sample Receipt Checklist

CLIENT NAME: Woodard + Curran RECEIVED BY: LMP DATE: 7/22/15

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

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

If not, explain:

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

If not, explain:

4) How were the samples received:

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

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

Temperature °C by Temp blank _____ Temperature °C by Temp gun 4.7°C

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

Who was notified _____ Date _____ Time _____

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

Who was notified _____ Date _____ Time _____

7) Location where samples are stored:

19

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

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

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

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

Containers received at Con-Test

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

Laboratory Comments:

40 mL vials: # HCl _____ # Methanol _____

Doc# 277 # Bisulfate _____ # DI Water _____

Rev. 4 August 2013 # Thiosulfate _____ Unpreserved _____

Time and Date Frozen:

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

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

Doc #277 Rev. 4 August 2013

Who notified of False statements?

Log-In Technician Initials: LMP

Date/Time:

Date/Time: 7/22/15

July 28, 2015

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

Project Location: UMass Orchard Hill
Client Job Number:
Project Number: 225695
Laboratory Work Order Number: 15G1014

Enclosed are results of analyses for samples received by the laboratory on July 22, 2015. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

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

Meghan E. Kelley
Project Manager

Table of Contents

Sample Summary	3
Case Narrative	4
Sample Results	5
15G1014-01	5
15G1014-02	6
15G1014-03	7
15G1014-04	8
15G1014-05	9
15G1014-06	10
Sample Preparation Information	11
QC Data	12
Polychlorinated Biphenyls with 3540 Soxhlet Extraction	12
B126880	12
Dual Column RPD Report	13
Flag/Qualifier Summary	15
Certifications	16
Chain of Custody/Sample Receipt	17

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: 7/28/2015

PURCHASE ORDER NUMBER:

PROJECT NUMBER: 225695

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 15G1014

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

PROJECT LOCATION: UMass Orchard Hill

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
LTM-WH-VWC-341	15G1014-01	Wipe		SW-846 8082A	
LTM-WH-VWC-342	15G1014-02	Wipe		SW-846 8082A	
LTM-WH-VWC-343	15G1014-03	Wipe		SW-846 8082A	
LTM-GH-VWC-344	15G1014-04	Wipe		SW-846 8082A	
LTM-FH-VWC-345	15G1014-05	Wipe		SW-846 8082A	
LTM-GH-VWC-346	15G1014-06	Wipe		SW-846 8082A	

CASE NARRATIVE SUMMARY

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

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

I certify that the analyses listed above, unless specifically listed as subcontracted, if any, were performed under my direction according to the approved methodologies listed in this document, and that based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

A handwritten signature in black ink, appearing to read "Tod Kopyscinski", written in a cursive style.

Tod E. Kopyscinski
Laboratory Director

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

Project Location: UMass Orchard Hill

Sample Description:

Work Order: 15G1014

Date Received: 7/22/2015

Field Sample #: LTM-WH-VWC-341

Sampled: 7/21/2015 09:00

Sample ID: 15G1014-01

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	7/22/15	7/24/15 20:17	KAL
Aroclor-1221 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 20:17	KAL
Aroclor-1232 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 20:17	KAL
Aroclor-1242 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 20:17	KAL
Aroclor-1248 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 20:17	KAL
Aroclor-1254 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 20:17	KAL
Aroclor-1260 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 20:17	KAL
Aroclor-1262 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 20:17	KAL
Aroclor-1268 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 20:17	KAL
Surrogates	% Recovery	Recovery Limits	Flag/Qual						
Decachlorobiphenyl [1]	95.9	30-150							
Decachlorobiphenyl [2]	107	30-150							
Tetrachloro-m-xylene [1]	90.6	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: UMass Orchard Hill

Sample Description:

Work Order: 15G1014

Date Received: 7/22/2015

Field Sample #: LTM-WH-VWC-342

Sampled: 7/21/2015 09:05

Sample ID: 15G1014-02

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	7/22/15	7/24/15 20:30	KAL
Aroclor-1221 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 20:30	KAL
Aroclor-1232 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 20:30	KAL
Aroclor-1242 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 20:30	KAL
Aroclor-1248 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 20:30	KAL
Aroclor-1254 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 20:30	KAL
Aroclor-1260 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 20:30	KAL
Aroclor-1262 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 20:30	KAL
Aroclor-1268 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 20:30	KAL
Surrogates	% Recovery	Recovery Limits	Flag/Qual						
Decachlorobiphenyl [1]	91.4	30-150						7/24/15 20:30	
Decachlorobiphenyl [2]	102	30-150						7/24/15 20:30	
Tetrachloro-m-xylene [1]	86.9	30-150						7/24/15 20:30	
Tetrachloro-m-xylene [2]	98.5	30-150						7/24/15 20:30	

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

Project Location: UMass Orchard Hill

Sample Description:

Work Order: 15G1014

Date Received: 7/22/2015

Field Sample #: LTM-WH-VWC-343

Sampled: 7/21/2015 09:10

Sample ID: 15G1014-03

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	7/22/15	7/24/15 20:42	KAL
Aroclor-1221 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 20:42	KAL
Aroclor-1232 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 20:42	KAL
Aroclor-1242 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 20:42	KAL
Aroclor-1248 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 20:42	KAL
Aroclor-1254 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 20:42	KAL
Aroclor-1260 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 20:42	KAL
Aroclor-1262 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 20:42	KAL
Aroclor-1268 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 20:42	KAL
Surrogates	% Recovery	Recovery Limits	Flag/Qual						
Decachlorobiphenyl [1]	89.0	30-150						7/24/15 20:42	
Decachlorobiphenyl [2]	99.6	30-150						7/24/15 20:42	
Tetrachloro-m-xylene [1]	87.1	30-150						7/24/15 20:42	
Tetrachloro-m-xylene [2]	98.7	30-150						7/24/15 20:42	

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

Project Location: UMass Orchard Hill

Sample Description:

Work Order: 15G1014

Date Received: 7/22/2015

Field Sample #: LTM-GH-VWC-344

Sampled: 7/21/2015 09:20

Sample ID: 15G1014-04

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	7/22/15	7/24/15 20:55	KAL
Aroclor-1221 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 20:55	KAL
Aroclor-1232 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 20:55	KAL
Aroclor-1242 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 20:55	KAL
Aroclor-1248 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 20:55	KAL
Aroclor-1254 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 20:55	KAL
Aroclor-1260 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 20:55	KAL
Aroclor-1262 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 20:55	KAL
Aroclor-1268 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 20:55	KAL
Surrogates	% Recovery	Recovery Limits	Flag/Qual						
Decachlorobiphenyl [1]	92.8	30-150							
Decachlorobiphenyl [2]	103	30-150							
Tetrachloro-m-xylene [1]	86.0	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: UMass Orchard Hill

Sample Description:

Work Order: 15G1014

Date Received: 7/22/2015

Field Sample #: LTM-FH-VWC-345

Sampled: 7/21/2015 09:25

Sample ID: 15G1014-05

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	7/22/15	7/24/15 21:08	KAL
Aroclor-1221 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 21:08	KAL
Aroclor-1232 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 21:08	KAL
Aroclor-1242 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 21:08	KAL
Aroclor-1248 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 21:08	KAL
Aroclor-1254 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 21:08	KAL
Aroclor-1260 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 21:08	KAL
Aroclor-1262 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 21:08	KAL
Aroclor-1268 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 21:08	KAL
Surrogates	% Recovery	Recovery Limits	Flag/Qual						
Decachlorobiphenyl [1]	91.4	30-150							
Decachlorobiphenyl [2]	102	30-150							
Tetrachloro-m-xylene [1]	86.4	30-150							
Tetrachloro-m-xylene [2]	98.8	30-150							

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

Project Location: UMass Orchard Hill

Sample Description:

Work Order: 15G1014

Date Received: 7/22/2015

Field Sample #: LTM-GH-VWC-346

Sampled: 7/21/2015 09:30

Sample ID: 15G1014-06

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	7/22/15	7/24/15 21:20	KAL
Aroclor-1221 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 21:20	KAL
Aroclor-1232 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 21:20	KAL
Aroclor-1242 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 21:20	KAL
Aroclor-1248 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 21:20	KAL
Aroclor-1254 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 21:20	KAL
Aroclor-1260 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 21:20	KAL
Aroclor-1262 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 21:20	KAL
Aroclor-1268 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 21:20	KAL
Surrogates	% Recovery	Recovery Limits	Flag/Qual						
Decachlorobiphenyl [1]	95.9	30-150							
Decachlorobiphenyl [2]	108	30-150							
Tetrachloro-m-xylene [1]	92.2	30-150							
Tetrachloro-m-xylene [2]	106	30-150							

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

Sample Extraction Data

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

Lab Number [Field ID]	Batch	Initial [Wipe]	Final [mL]	Date
15G1014-01 [LTM-WH-VWC-341]	B126880	1.00	10.0	07/22/15
15G1014-02 [LTM-WH-VWC-342]	B126880	1.00	10.0	07/22/15
15G1014-03 [LTM-WH-VWC-343]	B126880	1.00	10.0	07/22/15
15G1014-04 [LTM-GH-VWC-344]	B126880	1.00	10.0	07/22/15
15G1014-05 [LTM-FH-VWC-345]	B126880	1.00	10.0	07/22/15
15G1014-06 [LTM-GH-VWC-346]	B126880	1.00	10.0	07/22/15

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
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

Batch B126880 - SW-846 3540C

Blank (B126880-BLK1)

Prepared: 07/22/15 Analyzed: 07/24/15

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	1.88		µg/Wipe	2.00		93.8	30-150			
Surrogate: Decachlorobiphenyl [2C]	2.09		µg/Wipe	2.00		105	30-150			
Surrogate: Tetrachloro-m-xylene	1.73		µg/Wipe	2.00		86.6	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	1.97		µg/Wipe	2.00		98.5	30-150			

LCS (B126880-BS1)

Prepared: 07/22/15 Analyzed: 07/24/15

Aroclor-1016	0.46	0.20	µg/Wipe	0.500		91.9	40-140			
Aroclor-1016 [2C]	0.40	0.20	µg/Wipe	0.500		80.9	40-140			
Aroclor-1260	0.43	0.20	µg/Wipe	0.500		85.3	40-140			
Aroclor-1260 [2C]	0.40	0.20	µg/Wipe	0.500		80.6	40-140			
Surrogate: Decachlorobiphenyl	1.41		µg/Wipe	2.00		70.6	30-150			
Surrogate: Decachlorobiphenyl [2C]	1.53		µg/Wipe	2.00		76.4	30-150			
Surrogate: Tetrachloro-m-xylene	1.42		µg/Wipe	2.00		70.8	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	1.59		µg/Wipe	2.00		79.4	30-150			

LCS Dup (B126880-BSD1)

Prepared: 07/22/15 Analyzed: 07/24/15

Aroclor-1016	0.58	0.20	µg/Wipe	0.500		117	40-140	23.8	30	
Aroclor-1016 [2C]	0.54	0.20	µg/Wipe	0.500		107	40-140	27.8	30	
Aroclor-1260	0.56	0.20	µg/Wipe	0.500		112	40-140	27.1	30	
Aroclor-1260 [2C]	0.53	0.20	µg/Wipe	0.500		107	40-140	27.7	30	
Surrogate: Decachlorobiphenyl	1.90		µg/Wipe	2.00		94.9	30-150			
Surrogate: Decachlorobiphenyl [2C]	2.12		µg/Wipe	2.00		106	30-150			
Surrogate: Tetrachloro-m-xylene	1.72		µg/Wipe	2.00		86.2	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	1.97		µg/Wipe	2.00		98.4	30-150			

IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

LCS

Lab Sample ID: B126880-BS1 Date(s) Analyzed: 07/24/2015 07/24/2015

Instrument ID (1): Instrument ID (2):

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1016	1	0.00	0.00	0.00	0.46	
	2	0.00	0.00	0.00	0.40	14
Aroclor-1260	1	0.00	0.00	0.00	0.43	
	2	0.00	0.00	0.00	0.40	6

IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

LCS Dup

Lab Sample ID: B126880-BSD1 Date(s) Analyzed: 07/24/2015 07/24/2015
Instrument ID (1): _____ Instrument ID (2): _____
GC Column (1): _____ ID: _____ (mm) GC Column (2): _____ ID: _____ (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1016	1	0.00	0.00	0.00	0.58	
	2	0.00	0.00	0.00	0.54	8
Aroclor-1260	1	0.00	0.00	0.00	0.56	
	2	0.00	0.00	0.00	0.53	6

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

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

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

CERTIFICATIONS

Certified Analyses included in this Report

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

No certified Analyses included in this Report

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

Code	Description	Number	Expires
AIHA	AIHA-LAP, LLC	100033	02/1/2016
MA	Massachusetts DEP	M-MA100	06/30/2016
CT	Connecticut Department of Public Health	PH-0567	09/30/2015
NY	New York State Department of Health	10899 NELAP	04/1/2016
NH-S	New Hampshire Environmental Lab	2516 NELAP	02/5/2016
RI	Rhode Island Department of Health	LAO00112	12/30/2015
NC	North Carolina Div. of Water Quality	652	12/31/2015
NJ	New Jersey DEP	MA007 NELAP	09/30/2015
FL	Florida Department of Health	E871027 NELAP	06/30/2016
VT	Vermont Department of Health Lead Laboratory	LL015036	07/30/2016
WA	State of Washington Department of Ecology	C2065	02/23/2016
ME	State of Maine	2011028	06/9/2017
VA	Commonwealth of Virginia	460217	12/14/2015
NH-P	New Hampshire Environmental Lab	2557 NELAP	09/6/2015

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



Page 1 of 2



Sample Receipt Checklist

CLIENT NAME: Woodward + Curran RECEIVED BY: LMP DATE: 7/22/15

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

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

If not, explain:

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

If not, explain:

4) How were the samples received:

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

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

Temperature °C by Temp blank _____ Temperature °C by Temp gun 4.7°C

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

Who was notified _____ Date _____ Time _____

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

Who was notified _____ Date _____ Time _____

7) Location where samples are stored: 19

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

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

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

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

Containers received at Con-Test

	# of containers		# of containers
1 Liter Amber		8 oz amber/clear jar	
500 mL Amber		4 oz amber/clear jar	<u>6</u>
250 mL Amber (8oz amber)		2 oz amber/clear jar	
1 Liter Plastic		Plastic Bag / Ziploc	
500 mL Plastic		SOC Kit	
250 mL plastic		Non-ConTest Container	
40 mL Vial - type listed below		Perchlorate Kit	
Colisure / bacteria bottle		Flashpoint bottle	
Dissolved Oxygen bottle		Other glass jar	
Encore		Other	

Laboratory Comments:

40 mL vials: # HCl _____ # Methanol _____

Doc# 277 # Bisulfate _____ # DI Water _____

Rev. 4 August 2013 # Thiosulfate _____ Unpreserved _____

Time and Date Frozen:

Login Sample Receipt Checklist

(Rejection Criteria Listing - Using Sample Acceptance Policy)

Any False statement will be brought to the attention of Client

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

Doc #277 Rev. 4 August 2013

Who notified of False statements?

Log-In Technician Initials: LMP

Date/Time:

Date/Time: 7/22/15

July 28, 2015

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

Project Location: UMass Sylvan Interior
Client Job Number:
Project Number: 225695
Laboratory Work Order Number: 15G1017

Enclosed are results of analyses for samples received by the laboratory on July 22, 2015. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

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

Meghan E. Kelley
Project Manager

Table of Contents

Sample Summary	3
Case Narrative	4
Sample Results	5
15G1017-01	5
15G1017-02	6
15G1017-03	7
15G1017-04	8
15G1017-05	9
15G1017-06	10
15G1017-07	11
15G1017-08	12
Sample Preparation Information	13
QC Data	14
Polychlorinated Biphenyls with 3540 Soxhlet Extraction	14
B126880	14
B126881	15
Dual Column RPD Report	16
Flag/Qualifier Summary	24
Certifications	25
Chain of Custody/Sample Receipt	26

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: 7/28/2015

PURCHASE ORDER NUMBER:

PROJECT NUMBER: 225695

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 15G1017

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

PROJECT LOCATION: UMass Sylvan Interior

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
LTM-CRI-VWC-333	15G1017-01	Wipe		SW-846 8082A	
LTM-CRI-VWC-334	15G1017-02	Wipe		SW-846 8082A	
LTM-MRI-VWC-335	15G1017-03	Wipe		SW-846 8082A	
LTM-MRI-VWC-336	15G1017-04	Wipe		SW-846 8082A	
LTM-BRI-VWC-337	15G1017-05	Wipe		SW-846 8082A	
LTM-MRI-VWC-338	15G1017-06	Wipe		SW-846 8082A	
LTM-MRI-VWC-339	15G1017-07	Wipe		SW-846 8082A	
LTM-BRI-VWC-340	15G1017-08	Wipe		SW-846 8082A	

CASE NARRATIVE SUMMARY

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

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

I certify that the analyses listed above, unless specifically listed as subcontracted, if any, were performed under my direction according to the approved methodologies listed in this document, and that based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

A handwritten signature in black ink, appearing to read "Tod Kopyscinski". The signature is fluid and cursive, with the first name "Tod" being more prominent and the last name "Kopyscinski" written in a continuous script.

Tod E. Kopyscinski
Laboratory Director

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

Project Location: UMass Sylvan Interior

Sample Description:

Work Order: 15G1017

Date Received: 7/22/2015

Field Sample #: LTM-CRI-VWC-333

Sampled: 7/21/2015 09:41

Sample ID: 15G1017-01

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	7/22/15	7/24/15 21:33	KAL
Aroclor-1221 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 21:33	KAL
Aroclor-1232 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 21:33	KAL
Aroclor-1242 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 21:33	KAL
Aroclor-1248 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 21:33	KAL
Aroclor-1254 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 21:33	KAL
Aroclor-1260 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 21:33	KAL
Aroclor-1262 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 21:33	KAL
Aroclor-1268 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 21:33	KAL
Surrogates	% Recovery	Recovery Limits	Flag/Qual						
Decachlorobiphenyl [1]	93.3	30-150						7/24/15 21:33	
Decachlorobiphenyl [2]	104	30-150						7/24/15 21:33	
Tetrachloro-m-xylene [1]	87.3	30-150						7/24/15 21:33	
Tetrachloro-m-xylene [2]	98.9	30-150						7/24/15 21:33	

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

Project Location: UMass Sylvan Interior

Sample Description:

Work Order: 15G1017

Date Received: 7/22/2015

Field Sample #: LTM-CRI-VWC-334

Sampled: 7/21/2015 09:43

Sample ID: 15G1017-02

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	7/22/15	7/24/15 20:36	KAL
Aroclor-1221 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 20:36	KAL
Aroclor-1232 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 20:36	KAL
Aroclor-1242 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 20:36	KAL
Aroclor-1248 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 20:36	KAL
Aroclor-1254 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 20:36	KAL
Aroclor-1260 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 20:36	KAL
Aroclor-1262 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 20:36	KAL
Aroclor-1268 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 20:36	KAL
Surrogates	% Recovery	Recovery Limits	Flag/Qual						
Decachlorobiphenyl [1]	106	30-150							
Decachlorobiphenyl [2]	105	30-150							
Tetrachloro-m-xylene [1]	90.0	30-150							
Tetrachloro-m-xylene [2]	100	30-150							

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

Project Location: UMass Sylvan Interior

Sample Description:

Work Order: 15G1017

Date Received: 7/22/2015

Field Sample #: LTM-MRI-VWC-335

Sampled: 7/21/2015 09:50

Sample ID: 15G1017-03

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	7/22/15	7/24/15 20:48	KAL
Aroclor-1221 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 20:48	KAL
Aroclor-1232 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 20:48	KAL
Aroclor-1242 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 20:48	KAL
Aroclor-1248 [2]	0.29	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 20:48	KAL
Aroclor-1254 [2]	0.37	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 20:48	KAL
Aroclor-1260 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 20:48	KAL
Aroclor-1262 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 20:48	KAL
Aroclor-1268 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 20:48	KAL
Surrogates	% Recovery	Recovery Limits	Flag/Qual						
Decachlorobiphenyl [1]	93.9	30-150							
Decachlorobiphenyl [2]	93.8	30-150							
Tetrachloro-m-xylene [1]	81.6	30-150							
Tetrachloro-m-xylene [2]	91.1	30-150							

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

Project Location: UMass Sylvan Interior

Sample Description:

Work Order: 15G1017

Date Received: 7/22/2015

Field Sample #: LTM-MRI-VWC-336

Sampled: 7/21/2015 09:52

Sample ID: 15G1017-04

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	7/22/15	7/24/15 21:01	KAL
Aroclor-1221 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 21:01	KAL
Aroclor-1232 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 21:01	KAL
Aroclor-1242 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 21:01	KAL
Aroclor-1248 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 21:01	KAL
Aroclor-1254 [2]	0.38	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 21:01	KAL
Aroclor-1260 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 21:01	KAL
Aroclor-1262 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 21:01	KAL
Aroclor-1268 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 21:01	KAL
Surrogates	% Recovery	Recovery Limits	Flag/Qual						
Decachlorobiphenyl [1]	84.8	30-150							
Decachlorobiphenyl [2]	85.4	30-150							
Tetrachloro-m-xylene [1]	80.7	30-150							
Tetrachloro-m-xylene [2]	90.0	30-150							

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

Project Location: UMass Sylvan Interior

Sample Description:

Work Order: 15G1017

Date Received: 7/22/2015

Field Sample #: LTM-BRI-VWC-337

Sampled: 7/21/2015 10:04

Sample ID: 15G1017-05

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	7/22/15	7/24/15 21:13	KAL
Aroclor-1221 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 21:13	KAL
Aroclor-1232 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 21:13	KAL
Aroclor-1242 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 21:13	KAL
Aroclor-1248 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 21:13	KAL
Aroclor-1254 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 21:13	KAL
Aroclor-1260 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 21:13	KAL
Aroclor-1262 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 21:13	KAL
Aroclor-1268 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 21:13	KAL
Surrogates	% Recovery	Recovery Limits	Flag/Qual						
Decachlorobiphenyl [1]	89.7	30-150						7/24/15 21:13	
Decachlorobiphenyl [2]	89.5	30-150						7/24/15 21:13	
Tetrachloro-m-xylene [1]	84.0	30-150						7/24/15 21:13	
Tetrachloro-m-xylene [2]	94.1	30-150						7/24/15 21:13	

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

Project Location: UMass Sylvan Interior

Sample Description:

Work Order: 15G1017

Date Received: 7/22/2015

Field Sample #: LTM-MRI-VWC-338

Sampled: 7/21/2015 09:53

Sample ID: 15G1017-06

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	7/22/15	7/24/15 21:26	KAL
Aroclor-1221 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 21:26	KAL
Aroclor-1232 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 21:26	KAL
Aroclor-1242 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 21:26	KAL
Aroclor-1248 [2]	0.43	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 21:26	KAL
Aroclor-1254 [2]	0.84	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 21:26	KAL
Aroclor-1260 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 21:26	KAL
Aroclor-1262 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 21:26	KAL
Aroclor-1268 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 21:26	KAL
Surrogates	% Recovery	Recovery Limits	Flag/Qual						
Decachlorobiphenyl [1]	96.2	30-150							
Decachlorobiphenyl [2]	96.6	30-150							
Tetrachloro-m-xylene [1]	86.8	30-150							
Tetrachloro-m-xylene [2]	96.5	30-150							

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

Project Location: UMass Sylvan Interior

Sample Description:

Work Order: 15G1017

Date Received: 7/22/2015

Field Sample #: LTM-MRI-VWC-339

Sampled: 7/21/2015 09:56

Sample ID: 15G1017-07

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	7/22/15	7/24/15 21:38	KAL
Aroclor-1221 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 21:38	KAL
Aroclor-1232 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 21:38	KAL
Aroclor-1242 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 21:38	KAL
Aroclor-1248 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 21:38	KAL
Aroclor-1254 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 21:38	KAL
Aroclor-1260 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 21:38	KAL
Aroclor-1262 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 21:38	KAL
Aroclor-1268 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 21:38	KAL
Surrogates	% Recovery	Recovery Limits	Flag/Qual						
Decachlorobiphenyl [1]	101	30-150						7/24/15 21:38	
Decachlorobiphenyl [2]	100	30-150						7/24/15 21:38	
Tetrachloro-m-xylene [1]	85.2	30-150						7/24/15 21:38	
Tetrachloro-m-xylene [2]	94.6	30-150						7/24/15 21:38	

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

Project Location: UMass Sylvan Interior

Sample Description:

Work Order: 15G1017

Date Received: 7/22/2015

Field Sample #: LTM-BRI-VWC-340

Sampled: 7/21/2015 10:05

Sample ID: 15G1017-08

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	7/22/15	7/24/15 21:50	KAL
Aroclor-1221 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 21:50	KAL
Aroclor-1232 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 21:50	KAL
Aroclor-1242 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 21:50	KAL
Aroclor-1248 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 21:50	KAL
Aroclor-1254 [2]	0.21	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 21:50	KAL
Aroclor-1260 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 21:50	KAL
Aroclor-1262 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 21:50	KAL
Aroclor-1268 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 21:50	KAL
Surrogates	% Recovery	Recovery Limits	Flag/Qual						
Decachlorobiphenyl [1]	93.1	30-150							
Decachlorobiphenyl [2]	93.5	30-150							
Tetrachloro-m-xylene [1]	84.0	30-150							
Tetrachloro-m-xylene [2]	92.9	30-150							

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

Sample Extraction Data

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

Lab Number [Field ID]	Batch	Initial [Wipe]	Final [mL]	Date
15G1017-01 [LTM-CRI-VWC-333]	B126880	1.00	10.0	07/22/15

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

Lab Number [Field ID]	Batch	Initial [Wipe]	Final [mL]	Date
15G1017-02 [LTM-CRI-VWC-334]	B126881	1.00	10.0	07/22/15
15G1017-03 [LTM-MRI-VWC-335]	B126881	1.00	10.0	07/22/15
15G1017-04 [LTM-MRI-VWC-336]	B126881	1.00	10.0	07/22/15
15G1017-05 [LTM-BRI-VWC-337]	B126881	1.00	10.0	07/22/15
15G1017-06 [LTM-MRI-VWC-338]	B126881	1.00	10.0	07/22/15
15G1017-07 [LTM-MRI-VWC-339]	B126881	1.00	10.0	07/22/15
15G1017-08 [LTM-BRI-VWC-340]	B126881	1.00	10.0	07/22/15

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
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

Batch B126880 - SW-846 3540C

Blank (B126880-BLK1)

Prepared: 07/22/15 Analyzed: 07/24/15

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	1.88		µg/Wipe	2.00		93.8	30-150			
Surrogate: Decachlorobiphenyl [2C]	2.09		µg/Wipe	2.00		105	30-150			
Surrogate: Tetrachloro-m-xylene	1.73		µg/Wipe	2.00		86.6	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	1.97		µg/Wipe	2.00		98.5	30-150			

LCS (B126880-BS1)

Prepared: 07/22/15 Analyzed: 07/24/15

Aroclor-1016	0.46	0.20	µg/Wipe	0.500		91.9	40-140			
Aroclor-1016 [2C]	0.40	0.20	µg/Wipe	0.500		80.9	40-140			
Aroclor-1260	0.43	0.20	µg/Wipe	0.500		85.3	40-140			
Aroclor-1260 [2C]	0.40	0.20	µg/Wipe	0.500		80.6	40-140			
Surrogate: Decachlorobiphenyl	1.41		µg/Wipe	2.00		70.6	30-150			
Surrogate: Decachlorobiphenyl [2C]	1.53		µg/Wipe	2.00		76.4	30-150			
Surrogate: Tetrachloro-m-xylene	1.42		µg/Wipe	2.00		70.8	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	1.59		µg/Wipe	2.00		79.4	30-150			

LCS Dup (B126880-BSD1)

Prepared: 07/22/15 Analyzed: 07/24/15

Aroclor-1016	0.58	0.20	µg/Wipe	0.500		117	40-140	23.8	30	
Aroclor-1016 [2C]	0.54	0.20	µg/Wipe	0.500		107	40-140	27.8	30	
Aroclor-1260	0.56	0.20	µg/Wipe	0.500		112	40-140	27.1	30	
Aroclor-1260 [2C]	0.53	0.20	µg/Wipe	0.500		107	40-140	27.7	30	
Surrogate: Decachlorobiphenyl	1.90		µg/Wipe	2.00		94.9	30-150			
Surrogate: Decachlorobiphenyl [2C]	2.12		µg/Wipe	2.00		106	30-150			
Surrogate: Tetrachloro-m-xylene	1.72		µg/Wipe	2.00		86.2	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	1.97		µg/Wipe	2.00		98.4	30-150			

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
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

Batch B126881 - SW-846 3540C

Blank (B126881-BLK1)

Prepared: 07/22/15 Analyzed: 07/24/15

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	1.99		µg/Wipe	2.00		99.4	30-150			
Surrogate: Decachlorobiphenyl [2C]	1.98		µg/Wipe	2.00		99.1	30-150			
Surrogate: Tetrachloro-m-xylene	1.70		µg/Wipe	2.00		84.8	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	1.89		µg/Wipe	2.00		94.6	30-150			

LCS (B126881-BS1)

Prepared: 07/22/15 Analyzed: 07/24/15

Aroclor-1016	0.57	0.20	µg/Wipe	0.500		113	40-140			
Aroclor-1016 [2C]	0.48	0.20	µg/Wipe	0.500		95.5	40-140			
Aroclor-1260	0.48	0.20	µg/Wipe	0.500		96.4	40-140			
Aroclor-1260 [2C]	0.48	0.20	µg/Wipe	0.500		96.0	40-140			
Surrogate: Decachlorobiphenyl	1.96		µg/Wipe	2.00		97.9	30-150			
Surrogate: Decachlorobiphenyl [2C]	1.96		µg/Wipe	2.00		97.8	30-150			
Surrogate: Tetrachloro-m-xylene	1.69		µg/Wipe	2.00		84.5	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	1.88		µg/Wipe	2.00		94.2	30-150			

LCS Dup (B126881-BSD1)

Prepared: 07/22/15 Analyzed: 07/24/15

Aroclor-1016	0.54	0.20	µg/Wipe	0.500		108	40-140	4.88	30	
Aroclor-1016 [2C]	0.54	0.20	µg/Wipe	0.500		108	40-140	12.4	30	
Aroclor-1260	0.49	0.20	µg/Wipe	0.500		97.8	40-140	1.40	30	
Aroclor-1260 [2C]	0.49	0.20	µg/Wipe	0.500		97.9	40-140	2.01	30	
Surrogate: Decachlorobiphenyl	2.06		µg/Wipe	2.00		103	30-150			
Surrogate: Decachlorobiphenyl [2C]	2.06		µg/Wipe	2.00		103	30-150			
Surrogate: Tetrachloro-m-xylene	1.68		µg/Wipe	2.00		84.2	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	1.87		µg/Wipe	2.00		93.7	30-150			

IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

LTM-MRI-VWC-335

Lab Sample ID: 15G1017-03 Date(s) Analyzed: 07/24/2015 07/24/2015

Instrument ID (1): Instrument ID (2):

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1248	1	0.00	0.00	0.00	0.28	
	2	0.00	0.00	0.00	0.29	2.4
Aroclor-1254	1	0.00	0.00	0.00	0.37	
	2	0.00	0.00	0.00	0.37	0.8

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

**IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES****LTM-MRI-VWC-336***SW-846 8082A*

Lab Sample ID: 15G1017-04 Date(s) Analyzed: 07/24/2015 07/24/2015
Instrument ID (1): _____ Instrument ID (2): _____
GC Column (1): _____ ID: _____ (mm) GC Column (2): _____ ID: _____ (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1254	1	0.00	0.00	0.00	0.35	
	2	0.00	0.00	0.00	0.38	7.7

**IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES***SW-846 8082A***LTM-MRI-VWC-338**

Lab Sample ID: 15G1017-06 Date(s) Analyzed: 07/24/2015 07/24/2015
Instrument ID (1): _____ Instrument ID (2): _____
GC Column (1): _____ ID: _____ (mm) GC Column (2): _____ ID: _____ (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1248	1	0.00	0.00	0.00	0.40	
	2	0.00	0.00	0.00	0.43	7.2
Aroclor-1254	1	0.00	0.00	0.00	0.78	
	2	0.00	0.00	0.00	0.84	7.4

**IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES****LTM-BRI-VWC-340***SW-846 8082A*

Lab Sample ID: 15G1017-08 Date(s) Analyzed: 07/24/2015 07/24/2015
Instrument ID (1): _____ Instrument ID (2): _____
GC Column (1): _____ ID: _____ (mm) GC Column (2): _____ ID: _____ (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1254	1	0.00	0.00	0.00	0.20	
	2	0.00	0.00	0.00	0.21	4.4

IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

LCS

Lab Sample ID: B126880-BS1 Date(s) Analyzed: 07/24/2015 07/24/2015

Instrument ID (1): _____ Instrument ID (2): _____

GC Column (1): _____ ID: _____ (mm) GC Column (2): _____ ID: _____ (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1016	1	0.00	0.00	0.00	0.46	
	2	0.00	0.00	0.00	0.40	14
Aroclor-1260	1	0.00	0.00	0.00	0.43	
	2	0.00	0.00	0.00	0.40	6

**IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES***SW-846 8082A***LCS Dup**

Lab Sample ID: B126880-BSD1 Date(s) Analyzed: 07/24/2015 07/24/2015
Instrument ID (1): _____ Instrument ID (2): _____
GC Column (1): _____ ID: _____ (mm) GC Column (2): _____ ID: _____ (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1016	1	0.00	0.00	0.00	0.58	
	2	0.00	0.00	0.00	0.54	8
Aroclor-1260	1	0.00	0.00	0.00	0.56	
	2	0.00	0.00	0.00	0.53	6

IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

LCS

Lab Sample ID: B126881-BS1 Date(s) Analyzed: 07/24/2015 07/24/2015

Instrument ID (1): Instrument ID (2):

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1016	1	0.00	0.00	0.00	0.57	
	2	0.00	0.00	0.00	0.48	16
Aroclor-1260	1	0.00	0.00	0.00	0.48	
	2	0.00	0.00	0.00	0.48	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

LCS Dup

Lab Sample ID: B126881-BSD1 Date(s) Analyzed: 07/24/2015 07/24/2015
Instrument ID (1): _____ Instrument ID (2): _____
GC Column (1): _____ ID: _____ (mm) GC Column (2): _____ ID: _____ (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1016	1	0.00	0.00	0.00	0.54	
	2	0.00	0.00	0.00	0.54	0
Aroclor-1260	1	0.00	0.00	0.00	0.49	
	2	0.00	0.00	0.00	0.49	0

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

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

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

CERTIFICATIONS

Certified Analyses included in this Report

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

No certified Analyses included in this Report

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

Code	Description	Number	Expires
AIHA	AIHA-LAP, LLC	100033	02/1/2016
MA	Massachusetts DEP	M-MA100	06/30/2016
CT	Connecticut Department of Public Health	PH-0567	09/30/2015
NY	New York State Department of Health	10899 NELAP	04/1/2016
NH-S	New Hampshire Environmental Lab	2516 NELAP	02/5/2016
RI	Rhode Island Department of Health	LAO00112	12/30/2015
NC	North Carolina Div. of Water Quality	652	12/31/2015
NJ	New Jersey DEP	MA007 NELAP	09/30/2015
FL	Florida Department of Health	E871027 NELAP	06/30/2016
VT	Vermont Department of Health Lead Laboratory	LL015036	07/30/2016
WA	State of Washington Department of Ecology	C2065	02/23/2016
ME	State of Maine	2011028	06/9/2017
VA	Commonwealth of Virginia	460217	12/14/2015
NH-P	New Hampshire Environmental Lab	2557 NELAP	09/6/2015

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



Page 1 of 2



Sample Receipt Checklist

CLIENT NAME: Woodard + Curran RECEIVED BY: LMP DATE: 7/22/15

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

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

If not, explain:

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

If not, explain:

4) How were the samples received:

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

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

Temperature °C by Temp blank _____ Temperature °C by Temp gun 4.7°C

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

Who was notified _____ Date _____ Time _____

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

Who was notified _____ Date _____ Time _____

7) Location where samples are stored:

19

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

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

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

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

Containers received at Con-Test

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

Laboratory Comments:

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

Login Sample Receipt Checklist

(Rejection Criteria Listing - Using Sample Acceptance Policy)

Any False statement will be brought to the attention of Client

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

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

Date/Time:
 Date/Time: 7/22/15

July 28, 2015

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

Project Location: UMass Amherst Sylvan Interior
Client Job Number:
Project Number: 225695
Laboratory Work Order Number: 15G1018

Enclosed are results of analyses for samples received by the laboratory on July 22, 2015. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink that reads "Meghan E. Kelley". The signature is written in a cursive style with a large, flowing "M" and a long, sweeping "y" at the end.

Meghan E. Kelley
Project Manager

Table of Contents

Sample Summary	4
Case Narrative	5
Sample Results	6
15G1018-01	6
15G1018-02	7
15G1018-03	8
15G1018-04	9
15G1018-05	10
15G1018-06	11
15G1018-07	12
15G1018-08	13
15G1018-09	14
15G1018-10	15
15G1018-11	16
15G1018-12	17
15G1018-13	18
15G1018-14	19
Sample Preparation Information	20
QC Data	21
Polychlorinated Biphenyls with 3540 Soxhlet Extraction	21
B126881	21
B126882	22
Dual Column RPD Report	23
Flag/Qualifier Summary	37
Certifications	38
Chain of Custody/Sample Receipt	39

Table of Contents (continued)

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: 7/28/2015

PURCHASE ORDER NUMBER:

PROJECT NUMBER: 225695

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 15G1018

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

PROJECT LOCATION: UMass Amherst Sylvan Interior

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
LTM-MR-VWBV-303	15G1018-01	Wipe		SW-846 8082A	
LTM-MR-VWBH-305	15G1018-02	Wipe		SW-846 8082A	
LTM-MR-VWBV-306	15G1018-03	Wipe		SW-846 8082A	
LTM-MR-VWBH-308	15G1018-04	Wipe		SW-846 8082A	
LTM-MR-VWBV-309	15G1018-05	Wipe		SW-846 8082A	
LTM-MR-VWBH-311	15G1018-06	Wipe		SW-846 8082A	
LTM-MR-VWKV-312	15G1018-07	Wipe		SW-846 8082A	
LTM-MR-VWKV-313	15G1018-08	Wipe		SW-846 8082A	
LTM-MR-VWKV-314	15G1018-09	Wipe		SW-846 8082A	
LTM-MR-VWKV-315	15G1018-10	Wipe		SW-846 8082A	
LTM-MR-VWKV-301	15G1018-11	Wipe		SW-846 8082A	
LTM-MR-VWKV-304	15G1018-12	Wipe		SW-846 8082A	
LTM-MR-VWKV-307	15G1018-13	Wipe		SW-846 8082A	
LTM-MR-VWKV-310	15G1018-14	Wipe		SW-846 8082A	

CASE NARRATIVE SUMMARY

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

SW-846 8082A**Qualifications:****O-03**

Sample contains two incompletely resolved aroclors. Aroclor with the closest matching pattern is reported.

Analyte & Samples(s) Qualified:**Aroclor-1254**

15G1018-03[LTM-MR-VWBV-306], 15G1018-06[LTM-MR-VWBH-311]

Aroclor-1254 [2C]

15G1018-03[LTM-MR-VWBV-306], 15G1018-06[LTM-MR-VWBH-311]

P-01

Result was confirmed using a dissimilar column. Relative percent difference between the two results was >40%. In accordance with the method, the higher result was reported.

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

15G1018-05[LTM-MR-VWBV-309]

S-01

The surrogate recovery for this sample is not available due to sample dilution below the surrogate reporting limit required from high analyte concentration and/or matrix interferences.

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

15G1018-12[LTM-MR-VWKV-304], 15G1018-14[LTM-MR-VWKV-310]

Decachlorobiphenyl [2C]

15G1018-12[LTM-MR-VWKV-304], 15G1018-14[LTM-MR-VWKV-310]

Tetrachloro-m-xylene

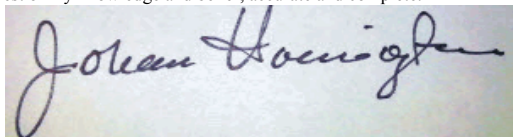
15G1018-12[LTM-MR-VWKV-304], 15G1018-14[LTM-MR-VWKV-310]

Tetrachloro-m-xylene [2C]

15G1018-12[LTM-MR-VWKV-304], 15G1018-14[LTM-MR-VWKV-310]

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

I certify that the analyses listed above, unless specifically listed as subcontracted, if any, were performed under my direction according to the approved methodologies listed in this document, and that based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.



Johanna K. Harrington

Manager, Laboratory Reporting

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

Project Location: UMass Amherst Sylvan Interior

Sample Description:

Work Order: 15G1018

Date Received: 7/22/2015

Field Sample #: LTM-MR-VWBV-303

Sampled: 7/21/2015 08:52

Sample ID: 15G1018-01

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	7/22/15	7/24/15 22:40	KAL
Aroclor-1221 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 22:40	KAL
Aroclor-1232 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 22:40	KAL
Aroclor-1242 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 22:40	KAL
Aroclor-1248 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 22:40	KAL
Aroclor-1254 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 22:40	KAL
Aroclor-1260 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 22:40	KAL
Aroclor-1262 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 22:40	KAL
Aroclor-1268 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 22:40	KAL
Surrogates	% Recovery	Recovery Limits	Flag/Qual						
Decachlorobiphenyl [1]	103	30-150						7/24/15 22:40	
Decachlorobiphenyl [2]	103	30-150						7/24/15 22:40	
Tetrachloro-m-xylene [1]	92.0	30-150						7/24/15 22:40	
Tetrachloro-m-xylene [2]	102	30-150						7/24/15 22:40	

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

Project Location: UMass Amherst Sylvan Interior

Sample Description:

Work Order: 15G1018

Date Received: 7/22/2015

Field Sample #: LTM-MR-VWBH-305

Sampled: 7/21/2015 09:08

Sample ID: 15G1018-02

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	7/22/15	7/24/15 22:52	KAL
Aroclor-1221 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 22:52	KAL
Aroclor-1232 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 22:52	KAL
Aroclor-1242 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 22:52	KAL
Aroclor-1248 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 22:52	KAL
Aroclor-1254 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 22:52	KAL
Aroclor-1260 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 22:52	KAL
Aroclor-1262 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 22:52	KAL
Aroclor-1268 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 22:52	KAL
Surrogates	% Recovery	Recovery Limits	Flag/Qual						
Decachlorobiphenyl [1]	87.5	30-150						7/24/15 22:52	
Decachlorobiphenyl [2]	88.2	30-150						7/24/15 22:52	
Tetrachloro-m-xylene [1]	81.9	30-150						7/24/15 22:52	
Tetrachloro-m-xylene [2]	90.9	30-150						7/24/15 22:52	

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

Project Location: UMass Amherst Sylvan Interior

Sample Description:

Work Order: 15G1018

Date Received: 7/22/2015

Field Sample #: LTM-MR-VWBV-306

Sampled: 7/21/2015 09:11

Sample ID: 15G1018-03

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	7/22/15	7/24/15 23:04	KAL
Aroclor-1221 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 23:04	KAL
Aroclor-1232 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 23:04	KAL
Aroclor-1242 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 23:04	KAL
Aroclor-1248 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 23:04	KAL
Aroclor-1254 [2]	0.95	0.20	µg/Wipe	1	O-03	SW-846 8082A	7/22/15	7/24/15 23:04	KAL
Aroclor-1260 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 23:04	KAL
Aroclor-1262 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 23:04	KAL
Aroclor-1268 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 23:04	KAL
Surrogates	% Recovery	Recovery Limits	Flag/Qual						
Decachlorobiphenyl [1]	99.5	30-150							
Decachlorobiphenyl [2]	99.3	30-150							
Tetrachloro-m-xylene [1]	85.3	30-150							
Tetrachloro-m-xylene [2]	94.6	30-150							

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

Project Location: UMass Amherst Sylvan Interior

Sample Description:

Work Order: 15G1018

Date Received: 7/22/2015

Field Sample #: LTM-MR-VWBH-308

Sampled: 7/21/2015 09:20

Sample ID: 15G1018-04

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	7/22/15	7/24/15 23:16	KAL
Aroclor-1221 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 23:16	KAL
Aroclor-1232 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 23:16	KAL
Aroclor-1242 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 23:16	KAL
Aroclor-1248 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 23:16	KAL
Aroclor-1254 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 23:16	KAL
Aroclor-1260 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 23:16	KAL
Aroclor-1262 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 23:16	KAL
Aroclor-1268 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 23:16	KAL
Surrogates	% Recovery	Recovery Limits	Flag/Qual						
Decachlorobiphenyl [1]	101	30-150							
Decachlorobiphenyl [2]	101	30-150							
Tetrachloro-m-xylene [1]	86.8	30-150							
Tetrachloro-m-xylene [2]	96.4	30-150							

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

Project Location: UMass Amherst Sylvan Interior

Sample Description:

Work Order: 15G1018

Date Received: 7/22/2015

Field Sample #: LTM-MR-VWBV-309

Sampled: 7/21/2015 09:23

Sample ID: 15G1018-05

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	0.40	µg/Wipe	2		SW-846 8082A	7/22/15	7/25/15 11:34	KAL
Aroclor-1221 [1]	ND	0.40	µg/Wipe	2		SW-846 8082A	7/22/15	7/25/15 11:34	KAL
Aroclor-1232 [1]	ND	0.40	µg/Wipe	2		SW-846 8082A	7/22/15	7/25/15 11:34	KAL
Aroclor-1242 [1]	ND	0.40	µg/Wipe	2		SW-846 8082A	7/22/15	7/25/15 11:34	KAL
Aroclor-1248 [1]	ND	0.40	µg/Wipe	2		SW-846 8082A	7/22/15	7/25/15 11:34	KAL
Aroclor-1254 [1]	2.3	0.40	µg/Wipe	2		SW-846 8082A	7/22/15	7/25/15 11:34	KAL
Aroclor-1260 [2]	1.1	0.40	µg/Wipe	2	P-01	SW-846 8082A	7/22/15	7/25/15 11:34	KAL
Aroclor-1262 [1]	ND	0.40	µg/Wipe	2		SW-846 8082A	7/22/15	7/25/15 11:34	KAL
Aroclor-1268 [1]	ND	0.40	µg/Wipe	2		SW-846 8082A	7/22/15	7/25/15 11:34	KAL
Surrogates	% Recovery	Recovery Limits	Flag/Qual						
Decachlorobiphenyl [1]	111	30-150						7/25/15 11:34	
Decachlorobiphenyl [2]	108	30-150						7/25/15 11:34	
Tetrachloro-m-xylene [1]	94.8	30-150						7/25/15 11:34	
Tetrachloro-m-xylene [2]	104	30-150						7/25/15 11:34	

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

Project Location: UMass Amherst Sylvan Interior

Sample Description:

Work Order: 15G1018

Date Received: 7/22/2015

Field Sample #: LTM-MR-VWBH-311

Sampled: 7/21/2015 09:32

Sample ID: 15G1018-06

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	7/22/15	7/24/15 23:41	KAL
Aroclor-1221 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 23:41	KAL
Aroclor-1232 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 23:41	KAL
Aroclor-1242 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 23:41	KAL
Aroclor-1248 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 23:41	KAL
Aroclor-1254 [2]	0.25	0.20	µg/Wipe	1	O-03	SW-846 8082A	7/22/15	7/24/15 23:41	KAL
Aroclor-1260 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 23:41	KAL
Aroclor-1262 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 23:41	KAL
Aroclor-1268 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 23:41	KAL
Surrogates	% Recovery	Recovery Limits	Flag/Qual						
Decachlorobiphenyl [1]	102	30-150							
Decachlorobiphenyl [2]	103	30-150							
Tetrachloro-m-xylene [1]	89.3	30-150							
Tetrachloro-m-xylene [2]	98.5	30-150							

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

Project Location: UMass Amherst Sylvan Interior

Sample Description:

Work Order: 15G1018

Date Received: 7/22/2015

Field Sample #: LTM-MR-VWKV-312

Sampled: 7/21/2015 08:36

Sample ID: 15G1018-07

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	7/22/15	7/24/15 23:53	KAL
Aroclor-1221 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 23:53	KAL
Aroclor-1232 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 23:53	KAL
Aroclor-1242 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 23:53	KAL
Aroclor-1248 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 23:53	KAL
Aroclor-1254 [2]	1.6	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 23:53	KAL
Aroclor-1260 [2]	0.31	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 23:53	KAL
Aroclor-1262 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 23:53	KAL
Aroclor-1268 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/24/15 23:53	KAL
Surrogates	% Recovery	Recovery Limits	Flag/Qual						
Decachlorobiphenyl [1]	101	30-150							
Decachlorobiphenyl [2]	102	30-150							
Tetrachloro-m-xylene [1]	86.1	30-150							
Tetrachloro-m-xylene [2]	95.5	30-150							

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

Project Location: UMass Amherst Sylvan Interior

Sample Description:

Work Order: 15G1018

Date Received: 7/22/2015

Field Sample #: LTM-MR-VWKV-313

Sampled: 7/21/2015 08:58

Sample ID: 15G1018-08

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	7/22/15	7/25/15 0:06	KAL
Aroclor-1221 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/25/15 0:06	KAL
Aroclor-1232 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/25/15 0:06	KAL
Aroclor-1242 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/25/15 0:06	KAL
Aroclor-1248 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/25/15 0:06	KAL
Aroclor-1254 [2]	1.6	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/25/15 0:06	KAL
Aroclor-1260 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/25/15 0:06	KAL
Aroclor-1262 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/25/15 0:06	KAL
Aroclor-1268 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/15	7/25/15 0:06	KAL
Surrogates	% Recovery	Recovery Limits	Flag/Qual						
Decachlorobiphenyl [1]	97.6	30-150						7/25/15 0:06	
Decachlorobiphenyl [2]	99.0	30-150						7/25/15 0:06	
Tetrachloro-m-xylene [1]	88.3	30-150						7/25/15 0:06	
Tetrachloro-m-xylene [2]	97.7	30-150						7/25/15 0:06	

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

Project Location: UMass Amherst Sylvan Interior

Sample Description:

Work Order: 15G1018

Date Received: 7/22/2015

Field Sample #: LTM-MR-VWKV-314

Sampled: 7/21/2015 09:17

Sample ID: 15G1018-09

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	1.0	µg/Wipe	5		SW-846 8082A	7/22/15	7/25/15 11:47	KAL
Aroclor-1221 [1]	ND	1.0	µg/Wipe	5		SW-846 8082A	7/22/15	7/25/15 11:47	KAL
Aroclor-1232 [1]	ND	1.0	µg/Wipe	5		SW-846 8082A	7/22/15	7/25/15 11:47	KAL
Aroclor-1242 [1]	ND	1.0	µg/Wipe	5		SW-846 8082A	7/22/15	7/25/15 11:47	KAL
Aroclor-1248 [1]	ND	1.0	µg/Wipe	5		SW-846 8082A	7/22/15	7/25/15 11:47	KAL
Aroclor-1254 [2]	7.6	1.0	µg/Wipe	5		SW-846 8082A	7/22/15	7/25/15 11:47	KAL
Aroclor-1260 [1]	ND	1.0	µg/Wipe	5		SW-846 8082A	7/22/15	7/25/15 11:47	KAL
Aroclor-1262 [1]	ND	1.0	µg/Wipe	5		SW-846 8082A	7/22/15	7/25/15 11:47	KAL
Aroclor-1268 [1]	ND	1.0	µg/Wipe	5		SW-846 8082A	7/22/15	7/25/15 11:47	KAL
Surrogates	% Recovery	Recovery Limits	Flag/Qual						
Decachlorobiphenyl [1]	102	30-150						7/25/15 11:47	
Decachlorobiphenyl [2]	98.5	30-150						7/25/15 11:47	
Tetrachloro-m-xylene [1]	92.3	30-150						7/25/15 11:47	
Tetrachloro-m-xylene [2]	99.5	30-150						7/25/15 11:47	

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

Project Location: UMass Amherst Sylvan Interior

Sample Description:

Work Order: 15G1018

Date Received: 7/22/2015

Field Sample #: LTM-MR-VWKV-315

Sampled: 7/21/2015 09:29

Sample ID: 15G1018-10

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	1.0	µg/Wipe	5		SW-846 8082A	7/22/15	7/25/15 11:59	KAL
Aroclor-1221 [1]	ND	1.0	µg/Wipe	5		SW-846 8082A	7/22/15	7/25/15 11:59	KAL
Aroclor-1232 [1]	ND	1.0	µg/Wipe	5		SW-846 8082A	7/22/15	7/25/15 11:59	KAL
Aroclor-1242 [1]	ND	1.0	µg/Wipe	5		SW-846 8082A	7/22/15	7/25/15 11:59	KAL
Aroclor-1248 [1]	ND	1.0	µg/Wipe	5		SW-846 8082A	7/22/15	7/25/15 11:59	KAL
Aroclor-1254 [2]	7.3	1.0	µg/Wipe	5		SW-846 8082A	7/22/15	7/25/15 11:59	KAL
Aroclor-1260 [1]	ND	1.0	µg/Wipe	5		SW-846 8082A	7/22/15	7/25/15 11:59	KAL
Aroclor-1262 [1]	ND	1.0	µg/Wipe	5		SW-846 8082A	7/22/15	7/25/15 11:59	KAL
Aroclor-1268 [1]	ND	1.0	µg/Wipe	5		SW-846 8082A	7/22/15	7/25/15 11:59	KAL
Surrogates	% Recovery	Recovery Limits	Flag/Qual						
Decachlorobiphenyl [1]	107	30-150						7/25/15 11:59	
Decachlorobiphenyl [2]	104	30-150						7/25/15 11:59	
Tetrachloro-m-xylene [1]	97.1	30-150						7/25/15 11:59	
Tetrachloro-m-xylene [2]	105	30-150						7/25/15 11:59	

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

Project Location: UMass Amherst Sylvan Interior

Sample Description:

Work Order: 15G1018

Date Received: 7/22/2015

Field Sample #: LTM-MR-VWKV-301

Sampled: 7/21/2015 08:33

Sample ID: 15G1018-11

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	4.0	µg/Wipe	20		SW-846 8082A	7/22/15	7/25/15 12:11	KAL
Aroclor-1221 [1]	ND	4.0	µg/Wipe	20		SW-846 8082A	7/22/15	7/25/15 12:11	KAL
Aroclor-1232 [1]	ND	4.0	µg/Wipe	20		SW-846 8082A	7/22/15	7/25/15 12:11	KAL
Aroclor-1242 [1]	ND	4.0	µg/Wipe	20		SW-846 8082A	7/22/15	7/25/15 12:11	KAL
Aroclor-1248 [1]	ND	4.0	µg/Wipe	20		SW-846 8082A	7/22/15	7/25/15 12:11	KAL
Aroclor-1254 [2]	30	4.0	µg/Wipe	20		SW-846 8082A	7/22/15	7/25/15 12:11	KAL
Aroclor-1260 [1]	ND	4.0	µg/Wipe	20		SW-846 8082A	7/22/15	7/25/15 12:11	KAL
Aroclor-1262 [1]	ND	4.0	µg/Wipe	20		SW-846 8082A	7/22/15	7/25/15 12:11	KAL
Aroclor-1268 [1]	ND	4.0	µg/Wipe	20		SW-846 8082A	7/22/15	7/25/15 12:11	KAL
Surrogates	% Recovery	Recovery Limits	Flag/Qual						
Decachlorobiphenyl [1]	112	30-150							
Decachlorobiphenyl [2]	109	30-150							
Tetrachloro-m-xylene [1]	93.9	30-150							
Tetrachloro-m-xylene [2]	100	30-150							

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

Project Location: UMass Amherst Sylvan Interior

Sample Description:

Work Order: 15G1018

Date Received: 7/22/2015

Field Sample #: LTM-MR-VWKV-304

Sampled: 7/21/2015 08:55

Sample ID: 15G1018-12

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	10	µg/Wipe	50		SW-846 8082A	7/22/15	7/25/15 12:24	KAL
Aroclor-1221 [1]	ND	10	µg/Wipe	50		SW-846 8082A	7/22/15	7/25/15 12:24	KAL
Aroclor-1232 [1]	ND	10	µg/Wipe	50		SW-846 8082A	7/22/15	7/25/15 12:24	KAL
Aroclor-1242 [1]	ND	10	µg/Wipe	50		SW-846 8082A	7/22/15	7/25/15 12:24	KAL
Aroclor-1248 [1]	ND	10	µg/Wipe	50		SW-846 8082A	7/22/15	7/25/15 12:24	KAL
Aroclor-1254 [2]	60	10	µg/Wipe	50		SW-846 8082A	7/22/15	7/25/15 12:24	KAL
Aroclor-1260 [1]	ND	10	µg/Wipe	50		SW-846 8082A	7/22/15	7/25/15 12:24	KAL
Aroclor-1262 [1]	ND	10	µg/Wipe	50		SW-846 8082A	7/22/15	7/25/15 12:24	KAL
Aroclor-1268 [1]	ND	10	µg/Wipe	50		SW-846 8082A	7/22/15	7/25/15 12:24	KAL
Surrogates	% Recovery	Recovery Limits			Flag/Qual				
Decachlorobiphenyl [1]	*	30-150			S-01			7/25/15 12:24	
Decachlorobiphenyl [2]	*	30-150			S-01			7/25/15 12:24	
Tetrachloro-m-xylene [1]	*	30-150			S-01			7/25/15 12:24	
Tetrachloro-m-xylene [2]	*	30-150			S-01			7/25/15 12:24	

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

Project Location: UMass Amherst Sylvan Interior

Sample Description:

Work Order: 15G1018

Date Received: 7/22/2015

Field Sample #: LTM-MR-VWKV-307

Sampled: 7/21/2015 09:14

Sample ID: 15G1018-13

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	4.0	µg/Wipe	20		SW-846 8082A	7/22/15	7/25/15 12:36	KAL
Aroclor-1221 [1]	ND	4.0	µg/Wipe	20		SW-846 8082A	7/22/15	7/25/15 12:36	KAL
Aroclor-1232 [1]	ND	4.0	µg/Wipe	20		SW-846 8082A	7/22/15	7/25/15 12:36	KAL
Aroclor-1242 [1]	ND	4.0	µg/Wipe	20		SW-846 8082A	7/22/15	7/25/15 12:36	KAL
Aroclor-1248 [1]	ND	4.0	µg/Wipe	20		SW-846 8082A	7/22/15	7/25/15 12:36	KAL
Aroclor-1254 [2]	39	4.0	µg/Wipe	20		SW-846 8082A	7/22/15	7/25/15 12:36	KAL
Aroclor-1260 [1]	ND	4.0	µg/Wipe	20		SW-846 8082A	7/22/15	7/25/15 12:36	KAL
Aroclor-1262 [1]	ND	4.0	µg/Wipe	20		SW-846 8082A	7/22/15	7/25/15 12:36	KAL
Aroclor-1268 [1]	ND	4.0	µg/Wipe	20		SW-846 8082A	7/22/15	7/25/15 12:36	KAL
Surrogates	% Recovery	Recovery Limits	Flag/Qual						
Decachlorobiphenyl [1]	120	30-150						7/25/15 12:36	
Decachlorobiphenyl [2]	114	30-150						7/25/15 12:36	
Tetrachloro-m-xylene [1]	98.1	30-150						7/25/15 12:36	
Tetrachloro-m-xylene [2]	105	30-150						7/25/15 12:36	

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

Project Location: UMass Amherst Sylvan Interior

Sample Description:

Work Order: 15G1018

Date Received: 7/22/2015

Field Sample #: LTM-MR-VWKV-310

Sampled: 7/21/2015 09:26

Sample ID: 15G1018-14

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	10	µg/Wipe	50		SW-846 8082A	7/23/15	7/25/15 11:09	KAL
Aroclor-1221 [1]	ND	10	µg/Wipe	50		SW-846 8082A	7/23/15	7/25/15 11:09	KAL
Aroclor-1232 [1]	ND	10	µg/Wipe	50		SW-846 8082A	7/23/15	7/25/15 11:09	KAL
Aroclor-1242 [1]	ND	10	µg/Wipe	50		SW-846 8082A	7/23/15	7/25/15 11:09	KAL
Aroclor-1248 [1]	ND	10	µg/Wipe	50		SW-846 8082A	7/23/15	7/25/15 11:09	KAL
Aroclor-1254 [2]	77	10	µg/Wipe	50		SW-846 8082A	7/23/15	7/25/15 11:09	KAL
Aroclor-1260 [1]	ND	10	µg/Wipe	50		SW-846 8082A	7/23/15	7/25/15 11:09	KAL
Aroclor-1262 [1]	ND	10	µg/Wipe	50		SW-846 8082A	7/23/15	7/25/15 11:09	KAL
Aroclor-1268 [1]	ND	10	µg/Wipe	50		SW-846 8082A	7/23/15	7/25/15 11:09	KAL
Surrogates	% Recovery	Recovery Limits			Flag/Qual				
Decachlorobiphenyl [1]	*	30-150			S-01			7/25/15 11:09	
Decachlorobiphenyl [2]	*	30-150			S-01			7/25/15 11:09	
Tetrachloro-m-xylene [1]	*	30-150			S-01			7/25/15 11:09	
Tetrachloro-m-xylene [2]	*	30-150			S-01			7/25/15 11:09	

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

Sample Extraction Data

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

Lab Number [Field ID]	Batch	Initial [Wipe]	Final [mL]	Date
15G1018-01 [LTM-MR-VWVBV-303]	B126881	1.00	10.0	07/22/15
15G1018-02 [LTM-MR-VWBH-305]	B126881	1.00	10.0	07/22/15
15G1018-03 [LTM-MR-VWVBV-306]	B126881	1.00	10.0	07/22/15
15G1018-04 [LTM-MR-VWBH-308]	B126881	1.00	10.0	07/22/15
15G1018-05 [LTM-MR-VWVBV-309]	B126881	1.00	10.0	07/22/15
15G1018-06 [LTM-MR-VWBH-311]	B126881	1.00	10.0	07/22/15
15G1018-07 [LTM-MR-VWKV-312]	B126881	1.00	10.0	07/22/15
15G1018-08 [LTM-MR-VWKV-313]	B126881	1.00	10.0	07/22/15
15G1018-09 [LTM-MR-VWKV-314]	B126881	1.00	10.0	07/22/15
15G1018-10 [LTM-MR-VWKV-315]	B126881	1.00	10.0	07/22/15
15G1018-11 [LTM-MR-VWKV-301]	B126881	1.00	10.0	07/22/15
15G1018-12 [LTM-MR-VWKV-304]	B126881	1.00	10.0	07/22/15
15G1018-13 [LTM-MR-VWKV-307]	B126881	1.00	10.0	07/22/15

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

Lab Number [Field ID]	Batch	Initial [Wipe]	Final [mL]	Date
15G1018-14 [LTM-MR-VWKV-310]	B126882	1.00	10.0	07/23/15

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
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

Batch B126881 - SW-846 3540C

Blank (B126881-BLK1)

Prepared: 07/22/15 Analyzed: 07/24/15

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	1.99		µg/Wipe	2.00		99.4	30-150			
Surrogate: Decachlorobiphenyl [2C]	1.98		µg/Wipe	2.00		99.1	30-150			
Surrogate: Tetrachloro-m-xylene	1.70		µg/Wipe	2.00		84.8	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	1.89		µg/Wipe	2.00		94.6	30-150			

LCS (B126881-BS1)

Prepared: 07/22/15 Analyzed: 07/24/15

Aroclor-1016	0.57	0.20	µg/Wipe	0.500		113	40-140			
Aroclor-1016 [2C]	0.48	0.20	µg/Wipe	0.500		95.5	40-140			
Aroclor-1260	0.48	0.20	µg/Wipe	0.500		96.4	40-140			
Aroclor-1260 [2C]	0.48	0.20	µg/Wipe	0.500		96.0	40-140			
Surrogate: Decachlorobiphenyl	1.96		µg/Wipe	2.00		97.9	30-150			
Surrogate: Decachlorobiphenyl [2C]	1.96		µg/Wipe	2.00		97.8	30-150			
Surrogate: Tetrachloro-m-xylene	1.69		µg/Wipe	2.00		84.5	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	1.88		µg/Wipe	2.00		94.2	30-150			

LCS Dup (B126881-BSD1)

Prepared: 07/22/15 Analyzed: 07/24/15

Aroclor-1016	0.54	0.20	µg/Wipe	0.500		108	40-140	4.88	30	
Aroclor-1016 [2C]	0.54	0.20	µg/Wipe	0.500		108	40-140	12.4	30	
Aroclor-1260	0.49	0.20	µg/Wipe	0.500		97.8	40-140	1.40	30	
Aroclor-1260 [2C]	0.49	0.20	µg/Wipe	0.500		97.9	40-140	2.01	30	
Surrogate: Decachlorobiphenyl	2.06		µg/Wipe	2.00		103	30-150			
Surrogate: Decachlorobiphenyl [2C]	2.06		µg/Wipe	2.00		103	30-150			
Surrogate: Tetrachloro-m-xylene	1.68		µg/Wipe	2.00		84.2	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	1.87		µg/Wipe	2.00		93.7	30-150			

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
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

Batch B126882 - SW-846 3540C

Blank (B126882-BLK1)

Prepared: 07/23/15 Analyzed: 07/24/15

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	1.97		µg/Wipe	2.00		98.7	30-150			
Surrogate: Decachlorobiphenyl [2C]	1.86		µg/Wipe	2.00		93.0	30-150			
Surrogate: Tetrachloro-m-xylene	1.87		µg/Wipe	2.00		93.7	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	1.65		µg/Wipe	2.00		82.5	30-150			

LCS (B126882-BS1)

Prepared: 07/23/15 Analyzed: 07/24/15

Aroclor-1016	0.51	0.20	µg/Wipe	0.500		102	40-140			
Aroclor-1016 [2C]	0.47	0.20	µg/Wipe	0.500		94.2	40-140			
Aroclor-1260	0.51	0.20	µg/Wipe	0.500		101	40-140			
Aroclor-1260 [2C]	0.44	0.20	µg/Wipe	0.500		88.8	40-140			
Surrogate: Decachlorobiphenyl	2.00		µg/Wipe	2.00		99.9	30-150			
Surrogate: Decachlorobiphenyl [2C]	1.90		µg/Wipe	2.00		94.9	30-150			
Surrogate: Tetrachloro-m-xylene	1.85		µg/Wipe	2.00		92.5	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	1.64		µg/Wipe	2.00		82.1	30-150			

LCS Dup (B126882-BSD1)

Prepared: 07/23/15 Analyzed: 07/24/15

Aroclor-1016	0.52	0.20	µg/Wipe	0.500		104	40-140	1.88	30	
Aroclor-1016 [2C]	0.50	0.20	µg/Wipe	0.500		99.1	40-140	5.06	30	
Aroclor-1260	0.52	0.20	µg/Wipe	0.500		103	40-140	1.83	30	
Aroclor-1260 [2C]	0.45	0.20	µg/Wipe	0.500		90.9	40-140	2.38	30	
Surrogate: Decachlorobiphenyl	1.95		µg/Wipe	2.00		97.4	30-150			
Surrogate: Decachlorobiphenyl [2C]	1.84		µg/Wipe	2.00		91.8	30-150			
Surrogate: Tetrachloro-m-xylene	1.90		µg/Wipe	2.00		94.8	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	1.66		µg/Wipe	2.00		83.2	30-150			

**IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES****LTM-MR-VWBV-306***SW-846 8082A*Lab Sample ID: 15G1018-03 Date(s) Analyzed: 07/24/2015 07/24/2015

Instrument ID (1): Instrument ID (2):

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1254	1	0.00	0.00	0.00	0.71	
	2	0.00	0.00	0.00	0.95	29.1

IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

LTM-MR-VWBV-309

Lab Sample ID: 15G1018-05 Date(s) Analyzed: 07/25/2015 07/25/2015

Instrument ID (1): Instrument ID (2):

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1254	1	0.00	0.00	0.00	2.3	
	2	0.00	0.00	0.00	1.8	26.5
Aroclor-1260	1	0.00	0.00	0.00	0.71	
	2	0.00	0.00	0.00	1.1	43.6

**IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES***SW-846 8082A***LTM-MR-VWKV-312**Lab Sample ID: 15G1018-07 Date(s) Analyzed: 07/24/2015 07/24/2015

Instrument ID (1): Instrument ID (2):

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1254	1	0.00	0.00	0.00	1.6	
	2	0.00	0.00	0.00	1.6	2.5
Aroclor-1260	1	0.00	0.00	0.00	0.22	
	2	0.00	0.00	0.00	0.31	33.1

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

**IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES**
SW-846 8082A

LTM-MR-VWKV-313

Lab Sample ID: 15G1018-08 Date(s) Analyzed: 07/25/2015 07/25/2015

Instrument ID (1): Instrument ID (2):

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1254	1	0.00	0.00	0.00	1.4	
	2	0.00	0.00	0.00	1.6	10.5

**IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES****LTM-MR-VWKV-314***SW-846 8082A*

Lab Sample ID: 15G1018-09 Date(s) Analyzed: 07/25/2015 07/25/2015
Instrument ID (1): _____ Instrument ID (2): _____
GC Column (1): _____ ID: _____ (mm) GC Column (2): _____ ID: _____ (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1254	1	0.00	0.00	0.00	6.9	
	2	0.00	0.00	0.00	7.6	9.9

**IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES**

LTM-MR-VWKV-315

SW-846 8082A

Lab Sample ID: 15G1018-10 Date(s) Analyzed: 07/25/2015 07/25/2015

Instrument ID (1): Instrument ID (2):

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1254	1	0.00	0.00	0.00	6.8	
	2	0.00	0.00	0.00	7.3	7.7

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

**IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES**

SW-846 8082A

LTM-MR-VWKV-301

Lab Sample ID: 15G1018-11 Date(s) Analyzed: 07/25/2015 07/25/2015

Instrument ID (1): Instrument ID (2):

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1254	1	0.00	0.00	0.00	28	
	2	0.00	0.00	0.00	30	7.3

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

**IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES**

LTM-MR-VWKV-304

SW-846 8082A

Lab Sample ID: 15G1018-12 Date(s) Analyzed: 07/25/2015 07/25/2015

Instrument ID (1): Instrument ID (2):

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1254	1	0.00	0.00	0.00	57	
	2	0.00	0.00	0.00	60	5.7

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

**IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES**

LTM-MR-VWKV-307

SW-846 8082A

Lab Sample ID: 15G1018-13 Date(s) Analyzed: 07/25/2015 07/25/2015

Instrument ID (1): Instrument ID (2):

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1254	1	0.00	0.00	0.00	35	
	2	0.00	0.00	0.00	39	9.7

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

**IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES**

LTM-MR-VWKV-310

SW-846 8082A

Lab Sample ID: 15G1018-14 Date(s) Analyzed: 07/25/2015 07/25/2015

Instrument ID (1): Instrument ID (2):

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1254	1	0.00	0.00	0.00	77	
	2	0.00	0.00	0.00	77	0.5

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

IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

LCS

SW-846 8082A

Lab Sample ID: B126881-BS1 Date(s) Analyzed: 07/24/2015 07/24/2015

Instrument ID (1): _____ Instrument ID (2): _____

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1016	1	0.00	0.00	0.00	0.57	
	2	0.00	0.00	0.00	0.48	16
Aroclor-1260	1	0.00	0.00	0.00	0.48	
	2	0.00	0.00	0.00	0.48	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

LCS Dup

Lab Sample ID: B126881-BSD1 Date(s) Analyzed: 07/24/2015 07/24/2015

Instrument ID (1): Instrument ID (2):

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1016	1	0.00	0.00	0.00	0.54	
	2	0.00	0.00	0.00	0.54	0
Aroclor-1260	1	0.00	0.00	0.00	0.49	
	2	0.00	0.00	0.00	0.49	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

LCS

Lab Sample ID: B126882-BS1 Date(s) Analyzed: 07/24/2015 07/24/2015

Instrument ID (1): Instrument ID (2):

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1016	1	0.00	0.00	0.00	0.51	
	2	0.00	0.00	0.00	0.47	8
Aroclor-1260	1	0.00	0.00	0.00	0.51	
	2	0.00	0.00	0.00	0.44	14

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

**IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES**

SW-846 8082A

LCS Dup

Lab Sample ID: B126882-BSD1 Date(s) Analyzed: 07/24/2015 07/24/2015

Instrument ID (1): Instrument ID (2):

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1016	1	0.00	0.00	0.00	0.52	
	2	0.00	0.00	0.00	0.50	4
Aroclor-1260	1	0.00	0.00	0.00	0.52	
	2	0.00	0.00	0.00	0.45	14

FLAG/QUALIFIER SUMMARY

*	QC result is outside of established limits.
†	Wide recovery limits established for difficult compound.
‡	Wide RPD limits established for difficult compound.
#	Data exceeded client recommended or regulatory level
	Percent recoveries and relative percent differences (RPDs) are determined by the software using values in the calculation which have not been rounded.
	No results have been blank subtracted unless specified in the case narrative section.
O-03	Sample contains two incompletely resolved aroclors. Aroclor with the closest matching pattern is reported.
P-01	Result was confirmed using a dissimilar column. Relative percent difference between the two results was >40%. In accordance with the method, the higher result was reported.
S-01	The surrogate recovery for this sample is not available due to sample dilution below the surrogate reporting limit required from high analyte concentration and/or matrix interferences.

CERTIFICATIONS

Certified Analyses included in this Report

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

No certified Analyses included in this Report

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

Code	Description	Number	Expires
AIHA	AIHA-LAP, LLC	100033	02/1/2016
MA	Massachusetts DEP	M-MA100	06/30/2016
CT	Connecticut Department of Public Health	PH-0567	09/30/2015
NY	New York State Department of Health	10899 NELAP	04/1/2016
NH-S	New Hampshire Environmental Lab	2516 NELAP	02/5/2016
RI	Rhode Island Department of Health	LAO00112	12/30/2015
NC	North Carolina Div. of Water Quality	652	12/31/2015
NJ	New Jersey DEP	MA007 NELAP	09/30/2015
FL	Florida Department of Health	E871027 NELAP	06/30/2016
VT	Vermont Department of Health Lead Laboratory	LL015036	07/30/2016
WA	State of Washington Department of Ecology	C2065	02/23/2016
ME	State of Maine	2011028	06/9/2017
VA	Commonwealth of Virginia	460217	12/14/2015
NH-P	New Hampshire Environmental Lab	2557 NELAP	09/6/2015



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

CHAIN OF CUSTODY RECORD

39 Spruce Street
East longmeadow, MA 01028

Page 3 of 3

Company Name: Woodard & Curran

Telephone: 978 557 8150

Address: 40 Shattuck Rd

Project # 225695

Attention: G. Franklin

Client PO#

Project Location: Umass Amherst LTM Silver

Sampled By: J. Perry + G. Reynolds + G. Franklin

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

DATA DELIVERY (check all that apply)
☐ FAX ☒ EMAIL ☐ WEBSITE
Fax #
Email: jfranklin@umass.edu
Format: ☒ PDF ☐ EXCEL ☐ OGIS
☐ OTHER

Con-Test Lab ID (laboratory use only)	Client Sample ID / Description	Collection		Composite	"Enhanced Data Package"		Conc Code
		Beginning Date/Time	Ending Date/Time		Grab	Conc Code	
01	LTM-MR-VWBN-303	7/21/15	852	X	X	0	
	LTM-MR-VWBN-304	7/21/15	855	X	X	0	
02	LTM-MR-VWBN-305	7/21/15	908	X	X	0	
03	LTM-MR-VWBN-306	7/21/15	911	X	X	0	
	LTM-MR-VWBN-307	7/21/15	914	X	X	0	
04	LTM-MR-VWBN-308	7/21/15	920	X	X	0	
05	LTM-MR-VWBN-309	7/21/15	923	X	X	0	
	LTM-MR-VWBN-310	7/21/15	926	X	X	0	
06	LTM-MR-VWBN-311	7/21/15	932	X	X	0	

Comments: PCBs via USEPA 8082 w/ sample extraction (SS40)

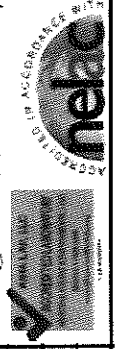
Relinquished by: (signature) 7/22/15 0940
Received by: (signature) 7-22-15 0940
Indicated by: (signature) 7-22-15 1800
Signed by: (signature) 4/9 7/22/15 1800

Turnaround ^{††}
☐ 7-Day
☐ 10-Day
☒ Other ^{STD}
RUSH ¹ Solay
☐ 24-Hr ☐ 48-Hr
☐ 72-Hr ☐ 14-Day
[†] Require lab approval

Detection Limit Requirements
Massachusetts:
Connecticut:
Other:

Is your project MCP or RCP?

☐ MCP Form Required
☐ RCP Form Required
☐ MA State DW Form Required PWSID #



NELAC & AIHA-LAP, LLC
Accredited
WBE/DBE Certified



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

CHAIN OF CUSTODY RECORD

39 Spruce Street
East long meadow, MA 01028

Page 1 of 1

Company Name: Woodward & Curran

Address: 40 Shattuck Rd

Attention: G. Franklin

Project Location: W. Mass. Ambient LTH Sylvan

Sampled By: G. Reynolds and George F. Fawcett

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

Project PO#

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

Fax #

Email: jfranklin@curran.com

Format: ☒ PDF ☐ EXCEL ☐ GIS

Other: ☐

Enhanced Data Package: ☐

Collection

Beginning Date/Time

Ending Date/Time

Composite

Grab

Conc. Date

Conc. Date

Conc. Date

Conc. Date

Conc. Date

Conc. Date

Conc. Date

Conc. Date

Conc. Date

Conc. Date

Conc. Date

Conc. Date

Conc. Date

Conc. Date

Comments: PCBs by USEPA 8082 w/ Soxhlet extraction (3540c)
Saline wipes collected and placed into hexane.

Turnaround

7-Day

10-Day

Other 5 day

RUSH

24-Hr

72-Hr

148-Hr

Require lab approval

Detection Limit Requirements

Massachusetts:

Connecticut:

Other:

Is your project MCP or RCP?

☐ MCP Form Required

☐ RCP Form Required

☐ MA State DW Form Required PWSID #

NELAC & AIHA-LAP, LLC Accredited

WBE/DBE Certified

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

PLEASE BE CAREFUL NOT TO CONTAMINATE THIS DOCUMENT

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



Page 1 of 2



Sample Receipt Checklist

CLIENT NAME: Woodward + Curran RECEIVED BY: Lmp DATE: 7/22/15

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

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

If not, explain:

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

If not, explain:

4) How were the samples received:

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

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

Temperature °C by Temp blank _____ Temperature °C by Temp gun 4.7°C

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

Who was notified _____ Date _____ Time _____

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

Who was notified _____ Date _____ Time _____

7) Location where samples are stored: 19

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

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

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

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

Containers received at Con-Test

	# of containers		# of containers
1 Liter Amber		8 oz amber/clear jar	
500 mL Amber		4 oz amber/clear jar	<u>14</u>
250 mL Amber (8oz amber)		2 oz amber/clear jar	
1 Liter Plastic		Plastic Bag / Ziploc	
500 mL Plastic		SOC Kit	
250 mL plastic		Non-ConTest Container	
40 mL Vial - type listed below		Perchlorate Kit	
Colisure / bacteria bottle		Flashpoint bottle	
Dissolved Oxygen bottle		Other glass jar	
Encore		Other	

Laboratory Comments:

40 mL vials: # HCl _____ # Methanol _____

Doc# 277 # Bisulfate _____ # DI Water _____

Rev. 4 August 2013 # Thiosulfate _____ Unpreserved _____

Time and Date Frozen:

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

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

Doc #277 Rev. 4 August 2013

Who notified of False statements?

Log-In Technician Initials: *LMF*

Date/Time:

Date/Time: *7/22/15*

July 28, 2015

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

Project Location: UMass Amherst Sylvan
Client Job Number:
Project Number: 225695
Laboratory Work Order Number: 15G1019

Enclosed are results of analyses for samples received by the laboratory on July 22, 2015. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Meghan E. Kelley
Project Manager

Table of Contents

Sample Summary	4
Case Narrative	5
Sample Results	6
15G1019-01	6
15G1019-02	7
15G1019-03	8
15G1019-04	9
15G1019-05	10
15G1019-06	11
15G1019-07	12
15G1019-08	13
15G1019-09	14
15G1019-10	15
15G1019-11	16
15G1019-12	17
15G1019-13	18
15G1019-14	19
15G1019-15	20
15G1019-16	21
15G1019-17	22
15G1019-18	23
15G1019-19	24
Sample Preparation Information	25
QC Data	26
Polychlorinated Biphenyls with 3540 Soxhlet Extraction	26
B126882	26

Table of Contents (continued)

Dual Column RPD Report	27
Flag/Qualifier Summary	30
Certifications	31
Chain of Custody/Sample Receipt	32

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: 7/28/2015

PURCHASE ORDER NUMBER:

PROJECT NUMBER: 225695

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 15G1019

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

PROJECT LOCATION: UMass Amherst Sylvan

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
LTM-BR-VWB-316	15G1019-01	Wipe		SW-846 8082A	
LTM-BR-VWBD-332	15G1019-02	Wipe		SW-846 8082A	
LTM-BR-VWB-317	15G1019-03	Wipe		SW-846 8082A	
LTM-BR-VWB-318	15G1019-04	Wipe		SW-846 8082A	
LTM-BR-VWB-319	15G1019-05	Wipe		SW-846 8082A	
LTM-BR-VWB-320	15G1019-06	Wipe		SW-846 8082A	
LTM-BR-VWB-321	15G1019-07	Wipe		SW-846 8082A	
LTM-BR-VWB-322	15G1019-08	Wipe		SW-846 8082A	
LTM-BR-VWB-323	15G1019-09	Wipe		SW-846 8082A	
LTM-CR-VWB-324	15G1019-10	Wipe		SW-846 8082A	
LTM-CR-VWB-325	15G1019-11	Wipe		SW-846 8082A	
LTM-CR-VWB-326	15G1019-12	Wipe		SW-846 8082A	
LTM-CR-VWB-327	15G1019-13	Wipe		SW-846 8082A	
LTM-CR-VWB-328	15G1019-14	Wipe		SW-846 8082A	
LTM-CR-VWB-329	15G1019-15	Wipe		SW-846 8082A	
LTM-CR-VWB-330	15G1019-16	Wipe		SW-846 8082A	
LTM-CR-VWB-331	15G1019-17	Wipe		SW-846 8082A	
LTM-MR-VWBV-300	15G1019-18	Wipe		SW-846 8082A	
LTM-MR-VWBH-302	15G1019-19	Wipe		SW-846 8082A	

CASE NARRATIVE SUMMARY

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

SW-846 8082A

Qualifications:

O-03

Sample contains two incompletely resolved aroclors. Aroclor with the closest matching pattern is reported.

Analyte & Samples(s) Qualified:

Aroclor-1254

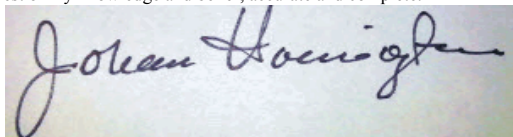
15G1019-08[LTM-BR-VWB-322], 15G1019-18[LTM-MR-VWBV-300]

Aroclor-1254 [2C]

15G1019-08[LTM-BR-VWB-322], 15G1019-18[LTM-MR-VWBV-300]

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

I certify that the analyses listed above, unless specifically listed as subcontracted, if any, were performed under my direction according to the approved methodologies listed in this document, and that based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.



Johanna K. Harrington

Manager, Laboratory Reporting

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

Project Location: UMass Amherst Sylvan

Sample Description:

Work Order: 15G1019

Date Received: 7/22/2015

Field Sample #: LTM-BR-VWB-316

Sampled: 7/21/2015 09:00

Sample ID: 15G1019-01

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	7/23/15	7/24/15 17:51	KAL
Aroclor-1221 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/24/15 17:51	KAL
Aroclor-1232 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/24/15 17:51	KAL
Aroclor-1242 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/24/15 17:51	KAL
Aroclor-1248 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/24/15 17:51	KAL
Aroclor-1254 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/24/15 17:51	KAL
Aroclor-1260 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/24/15 17:51	KAL
Aroclor-1262 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/24/15 17:51	KAL
Aroclor-1268 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/24/15 17:51	KAL
Surrogates	% Recovery	Recovery Limits	Flag/Qual						
Decachlorobiphenyl [1]	96.5	30-150							
Decachlorobiphenyl [2]	90.1	30-150							
Tetrachloro-m-xylene [1]	86.3	30-150							
Tetrachloro-m-xylene [2]	77.8	30-150							

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

Project Location: UMass Amherst Sylvan

Sample Description:

Work Order: 15G1019

Date Received: 7/22/2015

Field Sample #: LTM-BR-VWBD-332

Sampled: 7/21/2015 09:00

Sample ID: 15G1019-02

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	7/23/15	7/24/15 18:03	KAL
Aroclor-1221 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/24/15 18:03	KAL
Aroclor-1232 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/24/15 18:03	KAL
Aroclor-1242 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/24/15 18:03	KAL
Aroclor-1248 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/24/15 18:03	KAL
Aroclor-1254 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/24/15 18:03	KAL
Aroclor-1260 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/24/15 18:03	KAL
Aroclor-1262 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/24/15 18:03	KAL
Aroclor-1268 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/24/15 18:03	KAL
Surrogates	% Recovery	Recovery Limits	Flag/Qual						
Decachlorobiphenyl [1]	99.8	30-150						7/24/15 18:03	
Decachlorobiphenyl [2]	94.3	30-150						7/24/15 18:03	
Tetrachloro-m-xylene [1]	90.8	30-150						7/24/15 18:03	
Tetrachloro-m-xylene [2]	81.4	30-150						7/24/15 18:03	

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

Project Location: UMass Amherst Sylvan

Sample Description:

Work Order: 15G1019

Date Received: 7/22/2015

Field Sample #: LTM-BR-VWB-317

Sampled: 7/21/2015 09:05

Sample ID: 15G1019-03

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	7/23/15	7/24/15 18:16	KAL
Aroclor-1221 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/24/15 18:16	KAL
Aroclor-1232 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/24/15 18:16	KAL
Aroclor-1242 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/24/15 18:16	KAL
Aroclor-1248 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/24/15 18:16	KAL
Aroclor-1254 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/24/15 18:16	KAL
Aroclor-1260 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/24/15 18:16	KAL
Aroclor-1262 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/24/15 18:16	KAL
Aroclor-1268 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/24/15 18:16	KAL
Surrogates	% Recovery	Recovery Limits	Flag/Qual						
Decachlorobiphenyl [1]	95.6	30-150							
Decachlorobiphenyl [2]	89.3	30-150							
Tetrachloro-m-xylene [1]	85.8	30-150							
Tetrachloro-m-xylene [2]	77.9	30-150							

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

Project Location: UMass Amherst Sylvan

Sample Description:

Work Order: 15G1019

Date Received: 7/22/2015

Field Sample #: LTM-BR-VWB-318

Sampled: 7/21/2015 09:08

Sample ID: 15G1019-04

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	7/23/15	7/24/15 18:29	KAL
Aroclor-1221 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/24/15 18:29	KAL
Aroclor-1232 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/24/15 18:29	KAL
Aroclor-1242 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/24/15 18:29	KAL
Aroclor-1248 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/24/15 18:29	KAL
Aroclor-1254 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/24/15 18:29	KAL
Aroclor-1260 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/24/15 18:29	KAL
Aroclor-1262 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/24/15 18:29	KAL
Aroclor-1268 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/24/15 18:29	KAL
Surrogates	% Recovery	Recovery Limits	Flag/Qual						
Decachlorobiphenyl [1]	94.0	30-150						7/24/15 18:29	
Decachlorobiphenyl [2]	88.0	30-150						7/24/15 18:29	
Tetrachloro-m-xylene [1]	88.1	30-150						7/24/15 18:29	
Tetrachloro-m-xylene [2]	78.2	30-150						7/24/15 18:29	

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

Project Location: UMass Amherst Sylvan

Sample Description:

Work Order: 15G1019

Date Received: 7/22/2015

Field Sample #: LTM-BR-VWB-319

Sampled: 7/21/2015 09:10

Sample ID: 15G1019-05

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	7/23/15	7/24/15 18:42	KAL
Aroclor-1221 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/24/15 18:42	KAL
Aroclor-1232 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/24/15 18:42	KAL
Aroclor-1242 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/24/15 18:42	KAL
Aroclor-1248 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/24/15 18:42	KAL
Aroclor-1254 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/24/15 18:42	KAL
Aroclor-1260 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/24/15 18:42	KAL
Aroclor-1262 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/24/15 18:42	KAL
Aroclor-1268 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/24/15 18:42	KAL
Surrogates	% Recovery	Recovery Limits	Flag/Qual						
Decachlorobiphenyl [1]	91.8	30-150						7/24/15 18:42	
Decachlorobiphenyl [2]	86.5	30-150						7/24/15 18:42	
Tetrachloro-m-xylene [1]	92.2	30-150						7/24/15 18:42	
Tetrachloro-m-xylene [2]	80.7	30-150						7/24/15 18:42	

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

Project Location: UMass Amherst Sylvan

Sample Description:

Work Order: 15G1019

Date Received: 7/22/2015

Field Sample #: LTM-BR-VWB-320

Sampled: 7/21/2015 09:13

Sample ID: 15G1019-06

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	7/23/15	7/24/15 19:06	KAL
Aroclor-1221 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/24/15 19:06	KAL
Aroclor-1232 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/24/15 19:06	KAL
Aroclor-1242 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/24/15 19:06	KAL
Aroclor-1248 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/24/15 19:06	KAL
Aroclor-1254 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/24/15 19:06	KAL
Aroclor-1260 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/24/15 19:06	KAL
Aroclor-1262 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/24/15 19:06	KAL
Aroclor-1268 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/24/15 19:06	KAL
Surrogates	% Recovery	Recovery Limits	Flag/Qual						
Decachlorobiphenyl [1]	93.4	30-150							
Decachlorobiphenyl [2]	87.5	30-150							
Tetrachloro-m-xylene [1]	92.0	30-150							
Tetrachloro-m-xylene [2]	78.9	30-150							

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

Project Location: UMass Amherst Sylvan

Sample Description:

Work Order: 15G1019

Date Received: 7/22/2015

Field Sample #: LTM-BR-VWB-321

Sampled: 7/21/2015 09:16

Sample ID: 15G1019-07

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	7/23/15	7/24/15 19:19	KAL
Aroclor-1221 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/24/15 19:19	KAL
Aroclor-1232 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/24/15 19:19	KAL
Aroclor-1242 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/24/15 19:19	KAL
Aroclor-1248 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/24/15 19:19	KAL
Aroclor-1254 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/24/15 19:19	KAL
Aroclor-1260 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/24/15 19:19	KAL
Aroclor-1262 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/24/15 19:19	KAL
Aroclor-1268 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/24/15 19:19	KAL
Surrogates	% Recovery	Recovery Limits	Flag/Qual						
Decachlorobiphenyl [1]	94.8	30-150							
Decachlorobiphenyl [2]	88.0	30-150							
Tetrachloro-m-xylene [1]	88.5	30-150							
Tetrachloro-m-xylene [2]	77.3	30-150							

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

Project Location: UMass Amherst Sylvan

Sample Description:

Work Order: 15G1019

Date Received: 7/22/2015

Field Sample #: LTM-BR-VWB-322

Sampled: 7/21/2015 09:20

Sample ID: 15G1019-08

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	7/23/15	7/24/15 19:32	KAL
Aroclor-1221 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/24/15 19:32	KAL
Aroclor-1232 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/24/15 19:32	KAL
Aroclor-1242 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/24/15 19:32	KAL
Aroclor-1248 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/24/15 19:32	KAL
Aroclor-1254 [2]	0.24	0.20	µg/Wipe	1	O-03	SW-846 8082A	7/23/15	7/24/15 19:32	KAL
Aroclor-1260 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/24/15 19:32	KAL
Aroclor-1262 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/24/15 19:32	KAL
Aroclor-1268 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/24/15 19:32	KAL
Surrogates	% Recovery	Recovery Limits	Flag/Qual						
Decachlorobiphenyl [1]	97.9	30-150							
Decachlorobiphenyl [2]	90.7	30-150							
Tetrachloro-m-xylene [1]	89.2	30-150							
Tetrachloro-m-xylene [2]	77.6	30-150							

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

Project Location: UMass Amherst Sylvan

Sample Description:

Work Order: 15G1019

Date Received: 7/22/2015

Field Sample #: LTM-BR-VWB-323

Sampled: 7/21/2015 09:22

Sample ID: 15G1019-09

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	7/23/15	7/24/15 19:44	KAL
Aroclor-1221 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/24/15 19:44	KAL
Aroclor-1232 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/24/15 19:44	KAL
Aroclor-1242 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/24/15 19:44	KAL
Aroclor-1248 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/24/15 19:44	KAL
Aroclor-1254 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/24/15 19:44	KAL
Aroclor-1260 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/24/15 19:44	KAL
Aroclor-1262 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/24/15 19:44	KAL
Aroclor-1268 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/24/15 19:44	KAL
Surrogates	% Recovery	Recovery Limits	Flag/Qual						
Decachlorobiphenyl [1]	101	30-150						7/24/15 19:44	
Decachlorobiphenyl [2]	94.0	30-150						7/24/15 19:44	
Tetrachloro-m-xylene [1]	84.2	30-150						7/24/15 19:44	
Tetrachloro-m-xylene [2]	75.4	30-150						7/24/15 19:44	

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

Project Location: UMass Amherst Sylvan

Sample Description:

Work Order: 15G1019

Date Received: 7/22/2015

Field Sample #: LTM-CR-VWB-324

Sampled: 7/21/2015 08:35

Sample ID: 15G1019-10

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	7/23/15	7/24/15 19:57	KAL
Aroclor-1221 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/24/15 19:57	KAL
Aroclor-1232 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/24/15 19:57	KAL
Aroclor-1242 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/24/15 19:57	KAL
Aroclor-1248 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/24/15 19:57	KAL
Aroclor-1254 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/24/15 19:57	KAL
Aroclor-1260 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/24/15 19:57	KAL
Aroclor-1262 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/24/15 19:57	KAL
Aroclor-1268 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/24/15 19:57	KAL
Surrogates	% Recovery	Recovery Limits	Flag/Qual						
Decachlorobiphenyl [1]	99.6	30-150							
Decachlorobiphenyl [2]	91.6	30-150							
Tetrachloro-m-xylene [1]	88.5	30-150							
Tetrachloro-m-xylene [2]	77.0	30-150							

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

Project Location: UMass Amherst Sylvan

Sample Description:

Work Order: 15G1019

Date Received: 7/22/2015

Field Sample #: LTM-CR-VWB-325

Sampled: 7/21/2015 08:33

Sample ID: 15G1019-11

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	7/23/15	7/24/15 20:48	KAL
Aroclor-1221 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/24/15 20:48	KAL
Aroclor-1232 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/24/15 20:48	KAL
Aroclor-1242 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/24/15 20:48	KAL
Aroclor-1248 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/24/15 20:48	KAL
Aroclor-1254 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/24/15 20:48	KAL
Aroclor-1260 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/24/15 20:48	KAL
Aroclor-1262 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/24/15 20:48	KAL
Aroclor-1268 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/24/15 20:48	KAL
Surrogates	% Recovery		Recovery Limits		Flag/Qual				
Decachlorobiphenyl [1]	103		30-150				7/24/15 20:48		
Decachlorobiphenyl [2]	94.9		30-150				7/24/15 20:48		
Tetrachloro-m-xylene [1]	97.1		30-150				7/24/15 20:48		
Tetrachloro-m-xylene [2]	82.7		30-150				7/24/15 20:48		

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

Project Location: UMass Amherst Sylvan

Sample Description:

Work Order: 15G1019

Date Received: 7/22/2015

Field Sample #: LTM-CR-VWB-326

Sampled: 7/21/2015 08:40

Sample ID: 15G1019-12

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	7/23/15	7/24/15 21:01	KAL
Aroclor-1221 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/24/15 21:01	KAL
Aroclor-1232 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/24/15 21:01	KAL
Aroclor-1242 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/24/15 21:01	KAL
Aroclor-1248 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/24/15 21:01	KAL
Aroclor-1254 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/24/15 21:01	KAL
Aroclor-1260 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/24/15 21:01	KAL
Aroclor-1262 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/24/15 21:01	KAL
Aroclor-1268 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/24/15 21:01	KAL
Surrogates	% Recovery		Recovery Limits		Flag/Qual				
Decachlorobiphenyl [1]	107		30-150				7/24/15 21:01		
Decachlorobiphenyl [2]	97.7		30-150				7/24/15 21:01		
Tetrachloro-m-xylene [1]	102		30-150				7/24/15 21:01		
Tetrachloro-m-xylene [2]	87.6		30-150				7/24/15 21:01		

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

Project Location: UMass Amherst Sylvan

Sample Description:

Work Order: 15G1019

Date Received: 7/22/2015

Field Sample #: LTM-CR-VWB-327

Sampled: 7/21/2015 08:41

Sample ID: 15G1019-13

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	7/23/15	7/24/15 21:14	KAL
Aroclor-1221 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/24/15 21:14	KAL
Aroclor-1232 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/24/15 21:14	KAL
Aroclor-1242 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/24/15 21:14	KAL
Aroclor-1248 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/24/15 21:14	KAL
Aroclor-1254 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/24/15 21:14	KAL
Aroclor-1260 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/24/15 21:14	KAL
Aroclor-1262 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/24/15 21:14	KAL
Aroclor-1268 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/24/15 21:14	KAL
Surrogates	% Recovery	Recovery Limits	Flag/Qual						
Decachlorobiphenyl [1]	98.2	30-150							
Decachlorobiphenyl [2]	91.1	30-150							
Tetrachloro-m-xylene [1]	88.6	30-150							
Tetrachloro-m-xylene [2]	78.4	30-150							

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

Project Location: UMass Amherst Sylvan

Sample Description:

Work Order: 15G1019

Date Received: 7/22/2015

Field Sample #: LTM-CR-VWB-328

Sampled: 7/21/2015 08:45

Sample ID: 15G1019-14

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	7/23/15	7/24/15 21:27	KAL
Aroclor-1221 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/24/15 21:27	KAL
Aroclor-1232 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/24/15 21:27	KAL
Aroclor-1242 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/24/15 21:27	KAL
Aroclor-1248 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/24/15 21:27	KAL
Aroclor-1254 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/24/15 21:27	KAL
Aroclor-1260 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/24/15 21:27	KAL
Aroclor-1262 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/24/15 21:27	KAL
Aroclor-1268 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/24/15 21:27	KAL
Surrogates	% Recovery	Recovery Limits	Flag/Qual						
Decachlorobiphenyl [1]	99.1	30-150							
Decachlorobiphenyl [2]	91.1	30-150							
Tetrachloro-m-xylene [1]	87.8	30-150							
Tetrachloro-m-xylene [2]	75.2	30-150							

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

Project Location: UMass Amherst Sylvan

Sample Description:

Work Order: 15G1019

Date Received: 7/22/2015

Field Sample #: LTM-CR-VWB-329

Sampled: 7/21/2015 08:48

Sample ID: 15G1019-15

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	7/23/15	7/24/15 21:40	KAL
Aroclor-1221 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/24/15 21:40	KAL
Aroclor-1232 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/24/15 21:40	KAL
Aroclor-1242 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/24/15 21:40	KAL
Aroclor-1248 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/24/15 21:40	KAL
Aroclor-1254 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/24/15 21:40	KAL
Aroclor-1260 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/24/15 21:40	KAL
Aroclor-1262 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/24/15 21:40	KAL
Aroclor-1268 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/24/15 21:40	KAL
Surrogates	% Recovery	Recovery Limits	Flag/Qual						
Decachlorobiphenyl [1]	101	30-150							
Decachlorobiphenyl [2]	91.9	30-150							
Tetrachloro-m-xylene [1]	92.5	30-150							
Tetrachloro-m-xylene [2]	77.7	30-150							

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

Project Location: UMass Amherst Sylvan

Sample Description:

Work Order: 15G1019

Date Received: 7/22/2015

Field Sample #: LTM-CR-VWB-330

Sampled: 7/21/2015 08:50

Sample ID: 15G1019-16

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	7/23/15	7/24/15 21:53	KAL
Aroclor-1221 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/24/15 21:53	KAL
Aroclor-1232 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/24/15 21:53	KAL
Aroclor-1242 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/24/15 21:53	KAL
Aroclor-1248 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/24/15 21:53	KAL
Aroclor-1254 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/24/15 21:53	KAL
Aroclor-1260 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/24/15 21:53	KAL
Aroclor-1262 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/24/15 21:53	KAL
Aroclor-1268 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/24/15 21:53	KAL
Surrogates	% Recovery	Recovery Limits	Flag/Qual						
Decachlorobiphenyl [1]	98.5	30-150							
Decachlorobiphenyl [2]	89.1	30-150							
Tetrachloro-m-xylene [1]	93.5	30-150							
Tetrachloro-m-xylene [2]	78.6	30-150							

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

Project Location: UMass Amherst Sylvan

Sample Description:

Work Order: 15G1019

Date Received: 7/22/2015

Field Sample #: LTM-CR-VWB-331

Sampled: 7/21/2015 08:52

Sample ID: 15G1019-17

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	7/23/15	7/24/15 22:05	KAL
Aroclor-1221 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/24/15 22:05	KAL
Aroclor-1232 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/24/15 22:05	KAL
Aroclor-1242 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/24/15 22:05	KAL
Aroclor-1248 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/24/15 22:05	KAL
Aroclor-1254 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/24/15 22:05	KAL
Aroclor-1260 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/24/15 22:05	KAL
Aroclor-1262 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/24/15 22:05	KAL
Aroclor-1268 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/24/15 22:05	KAL
Surrogates	% Recovery		Recovery Limits		Flag/Qual				
Decachlorobiphenyl [1]	104		30-150				7/24/15 22:05		
Decachlorobiphenyl [2]	94.7		30-150				7/24/15 22:05		
Tetrachloro-m-xylene [1]	85.4		30-150				7/24/15 22:05		
Tetrachloro-m-xylene [2]	74.2		30-150				7/24/15 22:05		

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

Project Location: UMass Amherst Sylvan

Sample Description:

Work Order: 15G1019

Date Received: 7/22/2015

Field Sample #: LTM-MR-VWBV-300

Sampled: 7/21/2015 08:30

Sample ID: 15G1019-18

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	7/23/15	7/24/15 22:18	KAL
Aroclor-1221 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/24/15 22:18	KAL
Aroclor-1232 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/24/15 22:18	KAL
Aroclor-1242 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/24/15 22:18	KAL
Aroclor-1248 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/24/15 22:18	KAL
Aroclor-1254 [2]	0.36	0.20	µg/Wipe	1	O-03	SW-846 8082A	7/23/15	7/24/15 22:18	KAL
Aroclor-1260 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/24/15 22:18	KAL
Aroclor-1262 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/24/15 22:18	KAL
Aroclor-1268 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/24/15 22:18	KAL
Surrogates	% Recovery	Recovery Limits	Flag/Qual						
Decachlorobiphenyl [1]	87.9	30-150							
Decachlorobiphenyl [2]	79.1	30-150							
Tetrachloro-m-xylene [1]	81.4	30-150							
Tetrachloro-m-xylene [2]	68.9	30-150							

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

Project Location: UMass Amherst Sylvan

Sample Description:

Work Order: 15G1019

Date Received: 7/22/2015

Field Sample #: LTM-MR-VWBH-302

Sampled: 7/21/2015 08:45

Sample ID: 15G1019-19

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	7/23/15	7/24/15 22:31	KAL
Aroclor-1221 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/24/15 22:31	KAL
Aroclor-1232 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/24/15 22:31	KAL
Aroclor-1242 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/24/15 22:31	KAL
Aroclor-1248 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/24/15 22:31	KAL
Aroclor-1254 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/24/15 22:31	KAL
Aroclor-1260 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/24/15 22:31	KAL
Aroclor-1262 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/24/15 22:31	KAL
Aroclor-1268 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/24/15 22:31	KAL
Surrogates	% Recovery	Recovery Limits	Flag/Qual						
Decachlorobiphenyl [1]	100	30-150						7/24/15 22:31	
Decachlorobiphenyl [2]	90.9	30-150						7/24/15 22:31	
Tetrachloro-m-xylene [1]	92.8	30-150						7/24/15 22:31	
Tetrachloro-m-xylene [2]	78.5	30-150						7/24/15 22:31	

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

Sample Extraction Data

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

Lab Number [Field ID]	Batch	Initial [Wipe]	Final [mL]	Date
15G1019-01 [LTM-BR-VWB-316]	B126882	1.00	10.0	07/23/15
15G1019-02 [LTM-BR-VWBD-332]	B126882	1.00	10.0	07/23/15
15G1019-03 [LTM-BR-VWB-317]	B126882	1.00	10.0	07/23/15
15G1019-04 [LTM-BR-VWB-318]	B126882	1.00	10.0	07/23/15
15G1019-05 [LTM-BR-VWB-319]	B126882	1.00	10.0	07/23/15
15G1019-06 [LTM-BR-VWB-320]	B126882	1.00	10.0	07/23/15
15G1019-07 [LTM-BR-VWB-321]	B126882	1.00	10.0	07/23/15
15G1019-08 [LTM-BR-VWB-322]	B126882	1.00	10.0	07/23/15
15G1019-09 [LTM-BR-VWB-323]	B126882	1.00	10.0	07/23/15
15G1019-10 [LTM-CR-VWB-324]	B126882	1.00	10.0	07/23/15
15G1019-11 [LTM-CR-VWB-325]	B126882	1.00	10.0	07/23/15
15G1019-12 [LTM-CR-VWB-326]	B126882	1.00	10.0	07/23/15
15G1019-13 [LTM-CR-VWB-327]	B126882	1.00	10.0	07/23/15
15G1019-14 [LTM-CR-VWB-328]	B126882	1.00	10.0	07/23/15
15G1019-15 [LTM-CR-VWB-329]	B126882	1.00	10.0	07/23/15
15G1019-16 [LTM-CR-VWB-330]	B126882	1.00	10.0	07/23/15
15G1019-17 [LTM-CR-VWB-331]	B126882	1.00	10.0	07/23/15
15G1019-18 [LTM-MR-VWBV-300]	B126882	1.00	10.0	07/23/15
15G1019-19 [LTM-MR-VWBH-302]	B126882	1.00	10.0	07/23/15

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
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

Batch B126882 - SW-846 3540C

Blank (B126882-BLK1)

Prepared: 07/23/15 Analyzed: 07/24/15

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	1.97		µg/Wipe	2.00		98.7	30-150			
Surrogate: Decachlorobiphenyl [2C]	1.86		µg/Wipe	2.00		93.0	30-150			
Surrogate: Tetrachloro-m-xylene	1.87		µg/Wipe	2.00		93.7	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	1.65		µg/Wipe	2.00		82.5	30-150			

LCS (B126882-BS1)

Prepared: 07/23/15 Analyzed: 07/24/15

Aroclor-1016	0.51	0.20	µg/Wipe	0.500		102	40-140			
Aroclor-1016 [2C]	0.47	0.20	µg/Wipe	0.500		94.2	40-140			
Aroclor-1260	0.51	0.20	µg/Wipe	0.500		101	40-140			
Aroclor-1260 [2C]	0.44	0.20	µg/Wipe	0.500		88.8	40-140			
Surrogate: Decachlorobiphenyl	2.00		µg/Wipe	2.00		99.9	30-150			
Surrogate: Decachlorobiphenyl [2C]	1.90		µg/Wipe	2.00		94.9	30-150			
Surrogate: Tetrachloro-m-xylene	1.85		µg/Wipe	2.00		92.5	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	1.64		µg/Wipe	2.00		82.1	30-150			

LCS Dup (B126882-BSD1)

Prepared: 07/23/15 Analyzed: 07/24/15

Aroclor-1016	0.52	0.20	µg/Wipe	0.500		104	40-140	1.88	30	
Aroclor-1016 [2C]	0.50	0.20	µg/Wipe	0.500		99.1	40-140	5.06	30	
Aroclor-1260	0.52	0.20	µg/Wipe	0.500		103	40-140	1.83	30	
Aroclor-1260 [2C]	0.45	0.20	µg/Wipe	0.500		90.9	40-140	2.38	30	
Surrogate: Decachlorobiphenyl	1.95		µg/Wipe	2.00		97.4	30-150			
Surrogate: Decachlorobiphenyl [2C]	1.84		µg/Wipe	2.00		91.8	30-150			
Surrogate: Tetrachloro-m-xylene	1.90		µg/Wipe	2.00		94.8	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	1.66		µg/Wipe	2.00		83.2	30-150			

IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

LTM-CR-VWBV-300

SW-846 8082A

Lab Sample ID: 15G1019-18 Date(s) Analyzed: 07/24/2015 07/24/2015

Instrument ID (1): Instrument ID (2):

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1254	1	0.00	0.00	0.00	0.27	
	2	0.00	0.00	0.00	0.36	29.7

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

**IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES**

SW-846 8082A

LCS

Lab Sample ID: B126882-BS1 Date(s) Analyzed: 07/24/2015 07/24/2015

Instrument ID (1): Instrument ID (2):

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1016	1	0.00	0.00	0.00	0.51	
	2	0.00	0.00	0.00	0.47	8
Aroclor-1260	1	0.00	0.00	0.00	0.51	
	2	0.00	0.00	0.00	0.44	14

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

**IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES**

SW-846 8082A

LCS Dup

Lab Sample ID: B126882-BSD1 Date(s) Analyzed: 07/24/2015 07/24/2015

Instrument ID (1): Instrument ID (2):

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1016	1	0.00	0.00	0.00	0.52	
	2	0.00	0.00	0.00	0.50	4
Aroclor-1260	1	0.00	0.00	0.00	0.52	
	2	0.00	0.00	0.00	0.45	14

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
	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.
O-03	Sample contains two incompletely resolved aroclors. Aroclor with the closest matching pattern is reported.

CERTIFICATIONS

Certified Analyses included in this Report

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

No certified Analyses included in this Report

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

Code	Description	Number	Expires
AIHA	AIHA-LAP, LLC	100033	02/1/2016
MA	Massachusetts DEP	M-MA100	06/30/2016
CT	Connecticut Department of Public Health	PH-0567	09/30/2015
NY	New York State Department of Health	10899 NELAP	04/1/2016
NH-S	New Hampshire Environmental Lab	2516 NELAP	02/5/2016
RI	Rhode Island Department of Health	LAO00112	12/30/2015
NC	North Carolina Div. of Water Quality	652	12/31/2015
NJ	New Jersey DEP	MA007 NELAP	09/30/2015
FL	Florida Department of Health	E871027 NELAP	06/30/2016
VT	Vermont Department of Health Lead Laboratory	LL015036	07/30/2016
WA	State of Washington Department of Ecology	C2065	02/23/2016
ME	State of Maine	2011028	06/9/2017
VA	Commonwealth of Virginia	460217	12/14/2015
NH-P	New Hampshire Environmental Lab	2557 NELAP	09/6/2015



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

CHAIN OF CUSTODY RECORD

39 Spruce Street
East Longmeadow, MA 01028

Page 1 of 3

Company Name: Woodward + Curran

Telephone: 978-557-8150

Address: 40 Shepley Rd

Project # 225695

Andover MA

Client PO#

Attention: G. Frankland

Project Location: UMass Amherst LTM Sylvan

Sampled By: J. Perry + G. Reynolds + G. Frankland

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

DATA DELIVERY (check all that apply)

☐ FAX ☒ EMAIL ☐ WEBSITE

Fax #

Email:

Format:

☒ PDF ☐ EXCEL ☐ OGIS
☐ OTHER

☐ "Enhanced Data Package"

Composite

Grab

Matrix Conc Date

Collection

Beginning Date/Time

Ending Date/Time

Client Sample ID / Description

Con-Test Lab ID (laboratory use only)

01 LTM-BR-VWB-316 7/21/15 900

02 LTM-BR-VWB-332 7/21/15 900

03 LTM-BR-VWB-317 7/21/15 905

04 LTM-BR-VWB-318 7/21/15 908

05 LTM-BR-VWB-319 7/21/15 910

06 LTM-BR-VWB-320 7/21/15 913

07 LTM-BR-VWB-321 7/21/15 916

08 LTM-BR-VWB-322 7/21/15 920

09 LTM-BR-VWB-323 7/21/15 922

10 LTM-BR-VWB-324 7/21/15 835

Comments: PCBs via USEPA 8082 w/ sonnet extraction (35400)

Relinquished by: (signature) 7/22/15 0910

Received by: (signature) 7-22-15 0945

Relinquished by: (signature) 7-22-15 1900

Received by: (signature) 7/22/15 1800

Temperature: 41°C

Turnaround Time: 7/22/15

Require lab approval

Turnaround Time: 7/22/15

Require lab approval

Turnaround Time: 7/22/15

Require lab approval

Turnaround Time

7-Day

10-Day

Other

RUSH 1 Day

24-Hr

48-Hr

72-Hr

Require lab approval

Detection Limit Requirements

Massachusetts:

Connecticut:

Other:

Is your project MCP or RCP?

☐ MCP Form Required

☐ RCP Form Required

☐ MA State DW Form Required

PWSID #

NELAC & AIHA-LAP, LLC

Accredited

WBE/DBE Certified

PLEASE BE CAREFUL NOT TO CONTAMINATE THIS DOCUMENT

IF THIS FORM IS NOT FILLED OUT COMPLETELY OR

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



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

CHAIN OF CUSTODY RECORD

39 Spruce Street
East Longmeadow, MA 01028

Page 2 of 3

Company Name: Woodard + Curran Telephone: 978.557.8150

Address: 40 Shattuck Rd Project # 225695

Attention: G. Franklin Client PO#

Project Location: UMass Amherst LTM Sylvan

Sampled By: J. Perry, G. Reynolds, G. Franklin

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

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

Format: ☒ PDF ☐ EXCEL ☐ OGIS

Enhanced Data Package?
☐ YES ☐ NO

Collection Beginning Date/Time Ending Date/Time

Client Sample ID / Description

Con-Test Lab ID (laboratory use only)

Composite

Grab

Matrix Conc Data

Matrix Conc Data

Matrix Conc Data

Matrix Conc Data

Matrix Conc Data

Matrix Conc Data

Matrix Conc Data

Matrix Conc Data

Matrix Conc Data

Matrix Conc Data

Matrix Conc Data

Matrix Conc Data

Matrix Conc Data

Matrix Conc Data

Matrix Conc Data

Matrix Conc Data

Matrix Conc Data

Matrix Conc Data

Relinquished by: (signature) Date/Time: 7/22/15 09:40

Received by: (signature) Date/Time: 7-22-15 09:40

Notified by: (signature) Date/Time: 7-22-15 19:00

Received by: (signature) Date/Time: 7/22/15 18:00

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

Page 33 of 35

Is your project MCP or RCP?

- ☐ MCP Form Required
- ☐ RCP Form Required
- ☐ MA State DW Form Required PWSID #



NELAC & AIHA-LAP, LLC
Accredited

WBE/DBE Certified

PLEASE BE CAREFUL NOT TO CONTAMINATE THIS DOCUMENT

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



Page 1 of 2



Sample Receipt Checklist

CLIENT NAME: Woodard & Curran RECEIVED BY: LMP DATE: 7/22/15

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

2) Does the chain agree with the samples?

Yes No

If not, explain:

3) Are all the samples in good condition?

Yes No

If not, explain:

4) How were the samples received:

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

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

Temperature °C by Temp blank _____ Temperature °C by Temp gun 4.7°C

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

Yes No

Who was notified _____ Date _____ Time _____

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

Yes No

Who was notified _____ Date _____ Time _____

7) Location where samples are stored:

19

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

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

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

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

Containers received at Con-Test

	# of containers		# of containers
1 Liter Amber		8 oz amber/clear jar	
500 mL Amber		4 oz amber/clear jar	<u>1mp + 9 19</u>
250 mL Amber (8oz amber)		2 oz amber/clear jar	
1 Liter Plastic		Plastic Bag / Ziploc	
500 mL Plastic		SOC Kit	
250 mL plastic		Non-ConTest Container	
40 mL Vial - type listed below		Perchlorate Kit	
Colisure / bacteria bottle		Flashpoint bottle	
Dissolved Oxygen bottle		Other glass jar	
Encore		Other	

Laboratory Comments:

40 mL vials: # HCl _____ # Methanol _____

Doc# 277 # Bisulfate _____ # DI Water _____

Rev. 4 August 2013 # Thiosulfate _____ Unpreserved _____

Time and Date Frozen:

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

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

Doc #277 Rev. 4 August 2013

Who notified of False statements?

Log-In Technician Initials: LMP

Date/Time:

Date/Time: 7/22/15

July 29, 2015

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

Project Location: UMass LTMM SWC
Client Job Number:
Project Number: 225695
Laboratory Work Order Number: 15G1023

Enclosed are results of analyses for samples received by the laboratory on July 22, 2015. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink that reads "Meghan E. Kelley". The signature is written in a cursive style with a large, flowing "M" and a long, sweeping "y" at the end.

Meghan E. Kelley
Project Manager

Table of Contents

Sample Summary	4
Case Narrative	5
Sample Results	6
15G1023-01	6
15G1023-02	7
15G1023-03	8
15G1023-04	9
15G1023-05	10
15G1023-06	11
15G1023-07	12
15G1023-08	13
15G1023-09	14
15G1023-10	15
15G1023-11	16
15G1023-12	17
15G1023-13	18
15G1023-14	19
15G1023-15	20
15G1023-16	21
15G1023-17	22
15G1023-18	23
15G1023-19	24
15G1023-20	25
Sample Preparation Information	26
QC Data	27
Polychlorinated Biphenyls with 3540 Soxhlet Extraction	27

Table of Contents (continued)

B126883	27
Dual Column RPD Report	28
Flag/Qualifier Summary	32
Certifications	33
Chain of Custody/Sample Receipt	34

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: 7/29/2015

PURCHASE ORDER NUMBER:

PROJECT NUMBER: 225695

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 15G1023

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

PROJECT LOCATION: UMass LTMM SWC

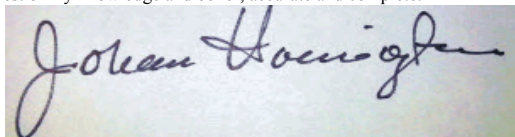
FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
LTM-SWC-VWC-347	15G1023-01	Wipe		SW-846 8082A	
LTM-SWC-VWC-348	15G1023-02	Wipe		SW-846 8082A	
LTM-SWC-VWC-349	15G1023-03	Wipe		SW-846 8082A	
LTM-SWC-VWC-350	15G1023-04	Wipe		SW-846 8082A	
LTM-SWC-VWC-351	15G1023-05	Wipe		SW-846 8082A	
LTM-SWC-VWC-352	15G1023-06	Wipe		SW-846 8082A	
LTM-SWC-VWC-353	15G1023-07	Wipe		SW-846 8082A	
LTM-SWC-VWC-354	15G1023-08	Wipe		SW-846 8082A	
LTM-SWC-VWC-355	15G1023-09	Wipe		SW-846 8082A	
LTM-SWC-VWC-356	15G1023-10	Wipe		SW-846 8082A	
LTM-SWC-VWC-357	15G1023-11	Wipe		SW-846 8082A	
LTM-SWC-VWC-358	15G1023-12	Wipe		SW-846 8082A	
LTM-SWC-VWCD-359	15G1023-13	Wipe		SW-846 8082A	
LTM-SWC-VWC-360	15G1023-14	Wipe		SW-846 8082A	
LTM-SWC-VWC-361	15G1023-15	Wipe		SW-846 8082A	
LTM-SWC-VWC-362	15G1023-16	Wipe		SW-846 8082A	
LTM-SWC-VWC-363	15G1023-17	Wipe		SW-846 8082A	
LTM-SWC-VWC-364	15G1023-18	Wipe		SW-846 8082A	
LTM-SWC-VWC-365	15G1023-19	Wipe		SW-846 8082A	
LTM-SWC-VWC-366	15G1023-20	Wipe		SW-846 8082A	

CASE NARRATIVE SUMMARY

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

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

I certify that the analyses listed above, unless specifically listed as subcontracted, if any, were performed under my direction according to the approved methodologies listed in this document, and that based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

A handwritten signature in dark ink, appearing to read "Johanna Harrington", is written over a light-colored, slightly textured background.

Johanna K. Harrington
Manager, Laboratory Reporting

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

Project Location: UMass LTMM SWC

Sample Description:

Work Order: 15G1023

Date Received: 7/22/2015

Field Sample #: LTM-SWC-VWC-347

Sampled: 7/21/2015 12:00

Sample ID: 15G1023-01

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	7/23/15	7/25/15 1:04	KAL
Aroclor-1221 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/25/15 1:04	KAL
Aroclor-1232 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/25/15 1:04	KAL
Aroclor-1242 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/25/15 1:04	KAL
Aroclor-1248 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/25/15 1:04	KAL
Aroclor-1254 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/25/15 1:04	KAL
Aroclor-1260 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/25/15 1:04	KAL
Aroclor-1262 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/25/15 1:04	KAL
Aroclor-1268 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/25/15 1:04	KAL
Surrogates	% Recovery	Recovery Limits	Flag/Qual						
Decachlorobiphenyl [1]	101	30-150						7/25/15 1:04	
Decachlorobiphenyl [2]	91.5	30-150						7/25/15 1:04	
Tetrachloro-m-xylene [1]	87.2	30-150						7/25/15 1:04	
Tetrachloro-m-xylene [2]	77.1	30-150						7/25/15 1:04	

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

Project Location: UMass LTMM SWC

Sample Description:

Work Order: 15G1023

Date Received: 7/22/2015

Field Sample #: LTM-SWC-VWC-348

Sampled: 7/21/2015 12:04

Sample ID: 15G1023-02

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	7/23/15	7/25/15 1:17	KAL
Aroclor-1221 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/25/15 1:17	KAL
Aroclor-1232 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/25/15 1:17	KAL
Aroclor-1242 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/25/15 1:17	KAL
Aroclor-1248 [2]	0.68	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/25/15 1:17	KAL
Aroclor-1254 [1]	1.3	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/25/15 1:17	KAL
Aroclor-1260 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/25/15 1:17	KAL
Aroclor-1262 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/25/15 1:17	KAL
Aroclor-1268 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/25/15 1:17	KAL
Surrogates	% Recovery	Recovery Limits	Flag/Qual						
Decachlorobiphenyl [1]	104	30-150						7/25/15 1:17	
Decachlorobiphenyl [2]	96.4	30-150						7/25/15 1:17	
Tetrachloro-m-xylene [1]	89.2	30-150						7/25/15 1:17	
Tetrachloro-m-xylene [2]	77.4	30-150						7/25/15 1:17	

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

Project Location: UMass LTMM SWC

Sample Description:

Work Order: 15G1023

Date Received: 7/22/2015

Field Sample #: LTM-SWC-VWC-349

Sampled: 7/21/2015 12:08

Sample ID: 15G1023-03

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	7/23/15	7/25/15 1:29	KAL
Aroclor-1221 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/25/15 1:29	KAL
Aroclor-1232 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/25/15 1:29	KAL
Aroclor-1242 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/25/15 1:29	KAL
Aroclor-1248 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/25/15 1:29	KAL
Aroclor-1254 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/25/15 1:29	KAL
Aroclor-1260 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/25/15 1:29	KAL
Aroclor-1262 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/25/15 1:29	KAL
Aroclor-1268 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/25/15 1:29	KAL
Surrogates	% Recovery	Recovery Limits	Flag/Qual						
Decachlorobiphenyl [1]	101	30-150						7/25/15 1:29	
Decachlorobiphenyl [2]	94.1	30-150						7/25/15 1:29	
Tetrachloro-m-xylene [1]	89.6	30-150						7/25/15 1:29	
Tetrachloro-m-xylene [2]	77.4	30-150						7/25/15 1:29	

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

Project Location: UMass LTMM SWC

Sample Description:

Work Order: 15G1023

Date Received: 7/22/2015

Field Sample #: LTM-SWC-VWC-350

Sampled: 7/21/2015 12:10

Sample ID: 15G1023-04

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	7/23/15	7/25/15 1:42	KAL
Aroclor-1221 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/25/15 1:42	KAL
Aroclor-1232 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/25/15 1:42	KAL
Aroclor-1242 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/25/15 1:42	KAL
Aroclor-1248 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/25/15 1:42	KAL
Aroclor-1254 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/25/15 1:42	KAL
Aroclor-1260 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/25/15 1:42	KAL
Aroclor-1262 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/25/15 1:42	KAL
Aroclor-1268 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/25/15 1:42	KAL
Surrogates	% Recovery	Recovery Limits	Flag/Qual						
Decachlorobiphenyl [1]	99.1	30-150						7/25/15 1:42	
Decachlorobiphenyl [2]	91.2	30-150						7/25/15 1:42	
Tetrachloro-m-xylene [1]	90.1	30-150						7/25/15 1:42	
Tetrachloro-m-xylene [2]	77.0	30-150						7/25/15 1:42	

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

Project Location: UMass LTMM SWC

Sample Description:

Work Order: 15G1023

Date Received: 7/22/2015

Field Sample #: LTM-SWC-VWC-351

Sampled: 7/21/2015 12:14

Sample ID: 15G1023-05

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	7/23/15	7/25/15 1:55	KAL
Aroclor-1221 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/25/15 1:55	KAL
Aroclor-1232 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/25/15 1:55	KAL
Aroclor-1242 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/25/15 1:55	KAL
Aroclor-1248 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/25/15 1:55	KAL
Aroclor-1254 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/25/15 1:55	KAL
Aroclor-1260 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/25/15 1:55	KAL
Aroclor-1262 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/25/15 1:55	KAL
Aroclor-1268 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/25/15 1:55	KAL
Surrogates	% Recovery	Recovery Limits	Flag/Qual						
Decachlorobiphenyl [1]	106	30-150						7/25/15 1:55	
Decachlorobiphenyl [2]	97.7	30-150						7/25/15 1:55	
Tetrachloro-m-xylene [1]	95.4	30-150						7/25/15 1:55	
Tetrachloro-m-xylene [2]	80.5	30-150						7/25/15 1:55	

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

Project Location: UMass LTMM SWC

Sample Description:

Work Order: 15G1023

Date Received: 7/22/2015

Field Sample #: LTM-SWC-VWC-352

Sampled: 7/21/2015 12:16

Sample ID: 15G1023-06

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	7/23/15	7/25/15 2:08	KAL
Aroclor-1221 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/25/15 2:08	KAL
Aroclor-1232 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/25/15 2:08	KAL
Aroclor-1242 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/25/15 2:08	KAL
Aroclor-1248 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/25/15 2:08	KAL
Aroclor-1254 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/25/15 2:08	KAL
Aroclor-1260 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/25/15 2:08	KAL
Aroclor-1262 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/25/15 2:08	KAL
Aroclor-1268 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/25/15 2:08	KAL
Surrogates	% Recovery	Recovery Limits	Flag/Qual						
Decachlorobiphenyl [1]	110	30-150						7/25/15 2:08	
Decachlorobiphenyl [2]	102	30-150						7/25/15 2:08	
Tetrachloro-m-xylene [1]	92.6	30-150						7/25/15 2:08	
Tetrachloro-m-xylene [2]	79.6	30-150						7/25/15 2:08	

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

Project Location: UMass LTMM SWC

Sample Description:

Work Order: 15G1023

Date Received: 7/22/2015

Field Sample #: LTM-SWC-VWC-353

Sampled: 7/21/2015 12:19

Sample ID: 15G1023-07

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	7/23/15	7/25/15 2:20	KAL
Aroclor-1221 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/25/15 2:20	KAL
Aroclor-1232 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/25/15 2:20	KAL
Aroclor-1242 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/25/15 2:20	KAL
Aroclor-1248 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/25/15 2:20	KAL
Aroclor-1254 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/25/15 2:20	KAL
Aroclor-1260 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/25/15 2:20	KAL
Aroclor-1262 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/25/15 2:20	KAL
Aroclor-1268 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/25/15 2:20	KAL
Surrogates	% Recovery	Recovery Limits	Flag/Qual						
Decachlorobiphenyl [1]	97.2	30-150						7/25/15 2:20	
Decachlorobiphenyl [2]	90.4	30-150						7/25/15 2:20	
Tetrachloro-m-xylene [1]	89.5	30-150						7/25/15 2:20	
Tetrachloro-m-xylene [2]	77.7	30-150						7/25/15 2:20	

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

Project Location: UMass LTMM SWC

Sample Description:

Work Order: 15G1023

Date Received: 7/22/2015

Field Sample #: LTM-SWC-VWC-354

Sampled: 7/21/2015 12:23

Sample ID: 15G1023-08

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	7/23/15	7/25/15 2:33	KAL
Aroclor-1221 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/25/15 2:33	KAL
Aroclor-1232 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/25/15 2:33	KAL
Aroclor-1242 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/25/15 2:33	KAL
Aroclor-1248 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/25/15 2:33	KAL
Aroclor-1254 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/25/15 2:33	KAL
Aroclor-1260 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/25/15 2:33	KAL
Aroclor-1262 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/25/15 2:33	KAL
Aroclor-1268 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/25/15 2:33	KAL
Surrogates	% Recovery	Recovery Limits	Flag/Qual						
Decachlorobiphenyl [1]	97.6	30-150						7/25/15 2:33	
Decachlorobiphenyl [2]	90.3	30-150						7/25/15 2:33	
Tetrachloro-m-xylene [1]	90.4	30-150						7/25/15 2:33	
Tetrachloro-m-xylene [2]	77.4	30-150						7/25/15 2:33	

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

Project Location: UMass LTMM SWC

Sample Description:

Work Order: 15G1023

Date Received: 7/22/2015

Field Sample #: LTM-SWC-VWC-355

Sampled: 7/21/2015 12:27

Sample ID: 15G1023-09

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	7/23/15	7/25/15 3:24	KAL
Aroclor-1221 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/25/15 3:24	KAL
Aroclor-1232 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/25/15 3:24	KAL
Aroclor-1242 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/25/15 3:24	KAL
Aroclor-1248 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/25/15 3:24	KAL
Aroclor-1254 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/25/15 3:24	KAL
Aroclor-1260 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/25/15 3:24	KAL
Aroclor-1262 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/25/15 3:24	KAL
Aroclor-1268 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/25/15 3:24	KAL
Surrogates	% Recovery	Recovery Limits	Flag/Qual						
Decachlorobiphenyl [1]	109	30-150						7/25/15 3:24	
Decachlorobiphenyl [2]	99.2	30-150						7/25/15 3:24	
Tetrachloro-m-xylene [1]	95.6	30-150						7/25/15 3:24	
Tetrachloro-m-xylene [2]	80.9	30-150						7/25/15 3:24	

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

Project Location: UMass LTMM SWC

Sample Description:

Work Order: 15G1023

Date Received: 7/22/2015

Field Sample #: LTM-SWC-VWC-356

Sampled: 7/21/2015 12:30

Sample ID: 15G1023-10

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	7/23/15	7/25/15 3:37	KAL
Aroclor-1221 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/25/15 3:37	KAL
Aroclor-1232 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/25/15 3:37	KAL
Aroclor-1242 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/25/15 3:37	KAL
Aroclor-1248 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/25/15 3:37	KAL
Aroclor-1254 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/25/15 3:37	KAL
Aroclor-1260 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/25/15 3:37	KAL
Aroclor-1262 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/25/15 3:37	KAL
Aroclor-1268 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/25/15 3:37	KAL
Surrogates	% Recovery	Recovery Limits	Flag/Qual						
Decachlorobiphenyl [1]	114	30-150						7/25/15 3:37	
Decachlorobiphenyl [2]	104	30-150						7/25/15 3:37	
Tetrachloro-m-xylene [1]	92.8	30-150						7/25/15 3:37	
Tetrachloro-m-xylene [2]	78.9	30-150						7/25/15 3:37	

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

Project Location: UMass LTMM SWC

Sample Description:

Work Order: 15G1023

Date Received: 7/22/2015

Field Sample #: LTM-SWC-VWC-357

Sampled: 7/21/2015 12:37

Sample ID: 15G1023-11

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	7/23/15	7/25/15 3:50	KAL
Aroclor-1221 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/25/15 3:50	KAL
Aroclor-1232 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/25/15 3:50	KAL
Aroclor-1242 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/25/15 3:50	KAL
Aroclor-1248 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/25/15 3:50	KAL
Aroclor-1254 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/25/15 3:50	KAL
Aroclor-1260 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/25/15 3:50	KAL
Aroclor-1262 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/25/15 3:50	KAL
Aroclor-1268 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/25/15 3:50	KAL
Surrogates	% Recovery	Recovery Limits	Flag/Qual						
Decachlorobiphenyl [1]	107	30-150						7/25/15 3:50	
Decachlorobiphenyl [2]	98.9	30-150						7/25/15 3:50	
Tetrachloro-m-xylene [1]	95.8	30-150						7/25/15 3:50	
Tetrachloro-m-xylene [2]	81.7	30-150						7/25/15 3:50	

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

Project Location: UMass LTMM SWC

Sample Description:

Work Order: 15G1023

Date Received: 7/22/2015

Field Sample #: LTM-SWC-VWC-358

Sampled: 7/21/2015 12:41

Sample ID: 15G1023-12

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	7/23/15	7/25/15 4:02	KAL
Aroclor-1221 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/25/15 4:02	KAL
Aroclor-1232 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/25/15 4:02	KAL
Aroclor-1242 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/25/15 4:02	KAL
Aroclor-1248 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/25/15 4:02	KAL
Aroclor-1254 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/25/15 4:02	KAL
Aroclor-1260 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/25/15 4:02	KAL
Aroclor-1262 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/25/15 4:02	KAL
Aroclor-1268 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/25/15 4:02	KAL
Surrogates	% Recovery	Recovery Limits	Flag/Qual						
Decachlorobiphenyl [1]	101	30-150						7/25/15 4:02	
Decachlorobiphenyl [2]	93.4	30-150						7/25/15 4:02	
Tetrachloro-m-xylene [1]	96.0	30-150						7/25/15 4:02	
Tetrachloro-m-xylene [2]	82.0	30-150						7/25/15 4:02	

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

Project Location: UMass LTMM SWC

Sample Description:

Work Order: 15G1023

Date Received: 7/22/2015

Field Sample #: LTM-SWC-VWCD-359

Sampled: 7/21/2015 12:41

Sample ID: 15G1023-13

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	7/23/15	7/25/15 4:15	KAL
Aroclor-1221 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/25/15 4:15	KAL
Aroclor-1232 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/25/15 4:15	KAL
Aroclor-1242 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/25/15 4:15	KAL
Aroclor-1248 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/25/15 4:15	KAL
Aroclor-1254 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/25/15 4:15	KAL
Aroclor-1260 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/25/15 4:15	KAL
Aroclor-1262 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/25/15 4:15	KAL
Aroclor-1268 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/25/15 4:15	KAL
Surrogates	% Recovery	Recovery Limits	Flag/Qual						
Decachlorobiphenyl [1]	111	30-150						7/25/15 4:15	
Decachlorobiphenyl [2]	102	30-150						7/25/15 4:15	
Tetrachloro-m-xylene [1]	97.2	30-150						7/25/15 4:15	
Tetrachloro-m-xylene [2]	83.2	30-150						7/25/15 4:15	

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

Project Location: UMass LTMM SWC

Sample Description:

Work Order: 15G1023

Date Received: 7/22/2015

Field Sample #: LTM-SWC-VWC-360

Sampled: 7/21/2015 12:44

Sample ID: 15G1023-14

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	7/23/15	7/25/15 4:28	KAL
Aroclor-1221 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/25/15 4:28	KAL
Aroclor-1232 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/25/15 4:28	KAL
Aroclor-1242 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/25/15 4:28	KAL
Aroclor-1248 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/25/15 4:28	KAL
Aroclor-1254 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/25/15 4:28	KAL
Aroclor-1260 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/25/15 4:28	KAL
Aroclor-1262 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/25/15 4:28	KAL
Aroclor-1268 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/25/15 4:28	KAL
Surrogates	% Recovery	Recovery Limits	Flag/Qual						
Decachlorobiphenyl [1]	99.6	30-150						7/25/15 4:28	
Decachlorobiphenyl [2]	90.8	30-150						7/25/15 4:28	
Tetrachloro-m-xylene [1]	93.1	30-150						7/25/15 4:28	
Tetrachloro-m-xylene [2]	79.4	30-150						7/25/15 4:28	

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

Project Location: UMass LTMM SWC

Sample Description:

Work Order: 15G1023

Date Received: 7/22/2015

Field Sample #: LTM-SWC-VWC-361

Sampled: 7/21/2015 12:49

Sample ID: 15G1023-15

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	7/23/15	7/25/15 4:41	KAL
Aroclor-1221 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/25/15 4:41	KAL
Aroclor-1232 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/25/15 4:41	KAL
Aroclor-1242 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/25/15 4:41	KAL
Aroclor-1248 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/25/15 4:41	KAL
Aroclor-1254 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/25/15 4:41	KAL
Aroclor-1260 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/25/15 4:41	KAL
Aroclor-1262 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/25/15 4:41	KAL
Aroclor-1268 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/25/15 4:41	KAL
Surrogates	% Recovery	Recovery Limits	Flag/Qual						
Decachlorobiphenyl [1]	97.2	30-150						7/25/15 4:41	
Decachlorobiphenyl [2]	89.6	30-150						7/25/15 4:41	
Tetrachloro-m-xylene [1]	93.3	30-150						7/25/15 4:41	
Tetrachloro-m-xylene [2]	78.6	30-150						7/25/15 4:41	

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

Project Location: UMass LTMM SWC

Sample Description:

Work Order: 15G1023

Date Received: 7/22/2015

Field Sample #: LTM-SWC-VWC-362

Sampled: 7/21/2015 12:53

Sample ID: 15G1023-16

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	7/23/15	7/25/15 4:53	KAL
Aroclor-1221 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/25/15 4:53	KAL
Aroclor-1232 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/25/15 4:53	KAL
Aroclor-1242 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/25/15 4:53	KAL
Aroclor-1248 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/25/15 4:53	KAL
Aroclor-1254 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/25/15 4:53	KAL
Aroclor-1260 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/25/15 4:53	KAL
Aroclor-1262 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/25/15 4:53	KAL
Aroclor-1268 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/25/15 4:53	KAL
Surrogates	% Recovery	Recovery Limits	Flag/Qual						
Decachlorobiphenyl [1]	103	30-150						7/25/15 4:53	
Decachlorobiphenyl [2]	94.7	30-150						7/25/15 4:53	
Tetrachloro-m-xylene [1]	94.1	30-150						7/25/15 4:53	
Tetrachloro-m-xylene [2]	78.9	30-150						7/25/15 4:53	

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

Project Location: UMass LTMM SWC

Sample Description:

Work Order: 15G1023

Date Received: 7/22/2015

Field Sample #: LTM-SWC-VWC-363

Sampled: 7/21/2015 12:57

Sample ID: 15G1023-17

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	7/23/15	7/25/15 5:06	KAL
Aroclor-1221 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/25/15 5:06	KAL
Aroclor-1232 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/25/15 5:06	KAL
Aroclor-1242 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/25/15 5:06	KAL
Aroclor-1248 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/25/15 5:06	KAL
Aroclor-1254 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/25/15 5:06	KAL
Aroclor-1260 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/25/15 5:06	KAL
Aroclor-1262 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/25/15 5:06	KAL
Aroclor-1268 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/25/15 5:06	KAL
Surrogates	% Recovery	Recovery Limits	Flag/Qual						
Decachlorobiphenyl [1]	107	30-150						7/25/15 5:06	
Decachlorobiphenyl [2]	98.1	30-150						7/25/15 5:06	
Tetrachloro-m-xylene [1]	93.5	30-150						7/25/15 5:06	
Tetrachloro-m-xylene [2]	80.4	30-150						7/25/15 5:06	

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

Project Location: UMass LTMM SWC

Sample Description:

Work Order: 15G1023

Date Received: 7/22/2015

Field Sample #: LTM-SWC-VWC-364

Sampled: 7/21/2015 13:01

Sample ID: 15G1023-18

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	7/23/15	7/25/15 5:19	KAL
Aroclor-1221 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/25/15 5:19	KAL
Aroclor-1232 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/25/15 5:19	KAL
Aroclor-1242 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/25/15 5:19	KAL
Aroclor-1248 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/25/15 5:19	KAL
Aroclor-1254 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/25/15 5:19	KAL
Aroclor-1260 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/25/15 5:19	KAL
Aroclor-1262 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/25/15 5:19	KAL
Aroclor-1268 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/25/15 5:19	KAL
Surrogates	% Recovery	Recovery Limits	Flag/Qual						
Decachlorobiphenyl [1]	101	30-150						7/25/15 5:19	
Decachlorobiphenyl [2]	92.5	30-150						7/25/15 5:19	
Tetrachloro-m-xylene [1]	91.1	30-150						7/25/15 5:19	
Tetrachloro-m-xylene [2]	76.7	30-150						7/25/15 5:19	

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

Project Location: UMass LTMM SWC

Sample Description:

Work Order: 15G1023

Date Received: 7/22/2015

Field Sample #: LTM-SWC-VWC-365

Sampled: 7/21/2015 13:03

Sample ID: 15G1023-19

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	7/23/15	7/25/15 5:32	KAL
Aroclor-1221 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/25/15 5:32	KAL
Aroclor-1232 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/25/15 5:32	KAL
Aroclor-1242 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/25/15 5:32	KAL
Aroclor-1248 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/25/15 5:32	KAL
Aroclor-1254 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/25/15 5:32	KAL
Aroclor-1260 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/25/15 5:32	KAL
Aroclor-1262 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/25/15 5:32	KAL
Aroclor-1268 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/23/15	7/25/15 5:32	KAL
Surrogates	% Recovery	Recovery Limits	Flag/Qual						
Decachlorobiphenyl [1]	102	30-150						7/25/15 5:32	
Decachlorobiphenyl [2]	93.1	30-150						7/25/15 5:32	
Tetrachloro-m-xylene [1]	96.5	30-150						7/25/15 5:32	
Tetrachloro-m-xylene [2]	81.1	30-150						7/25/15 5:32	

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

Project Location: UMass LTMM SWC

Sample Description:

Work Order: 15G1023

Date Received: 7/22/2015

Field Sample #: LTM-SWC-VWC-366

Sampled: 7/21/2015 13:06

Sample ID: 15G1023-20

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	1.0	µg/Wipe	5		SW-846 8082A	7/23/15	7/27/15 14:50	KAL
Aroclor-1221 [1]	ND	1.0	µg/Wipe	5		SW-846 8082A	7/23/15	7/27/15 14:50	KAL
Aroclor-1232 [1]	ND	1.0	µg/Wipe	5		SW-846 8082A	7/23/15	7/27/15 14:50	KAL
Aroclor-1242 [1]	ND	1.0	µg/Wipe	5		SW-846 8082A	7/23/15	7/27/15 14:50	KAL
Aroclor-1248 [1]	ND	1.0	µg/Wipe	5		SW-846 8082A	7/23/15	7/27/15 14:50	KAL
Aroclor-1254 [2]	4.6	1.0	µg/Wipe	5		SW-846 8082A	7/23/15	7/27/15 14:50	KAL
Aroclor-1260 [1]	ND	1.0	µg/Wipe	5		SW-846 8082A	7/23/15	7/27/15 14:50	KAL
Aroclor-1262 [1]	ND	1.0	µg/Wipe	5		SW-846 8082A	7/23/15	7/27/15 14:50	KAL
Aroclor-1268 [1]	ND	1.0	µg/Wipe	5		SW-846 8082A	7/23/15	7/27/15 14:50	KAL
Surrogates	% Recovery	Recovery Limits	Flag/Qual						
Decachlorobiphenyl [1]	104	30-150						7/27/15 14:50	
Decachlorobiphenyl [2]	104	30-150						7/27/15 14:50	
Tetrachloro-m-xylene [1]	97.2	30-150						7/27/15 14:50	
Tetrachloro-m-xylene [2]	105	30-150						7/27/15 14:50	

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

Sample Extraction Data

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

Lab Number [Field ID]	Batch	Initial [Wipe]	Final [mL]	Date
15G1023-01 [LTM-SWC-VWC-347]	B126883	1.00	10.0	07/23/15
15G1023-02 [LTM-SWC-VWC-348]	B126883	1.00	10.0	07/23/15
15G1023-03 [LTM-SWC-VWC-349]	B126883	1.00	10.0	07/23/15
15G1023-04 [LTM-SWC-VWC-350]	B126883	1.00	10.0	07/23/15
15G1023-05 [LTM-SWC-VWC-351]	B126883	1.00	10.0	07/23/15
15G1023-06 [LTM-SWC-VWC-352]	B126883	1.00	10.0	07/23/15
15G1023-07 [LTM-SWC-VWC-353]	B126883	1.00	10.0	07/23/15
15G1023-08 [LTM-SWC-VWC-354]	B126883	1.00	10.0	07/23/15
15G1023-09 [LTM-SWC-VWC-355]	B126883	1.00	10.0	07/23/15
15G1023-10 [LTM-SWC-VWC-356]	B126883	1.00	10.0	07/23/15
15G1023-11 [LTM-SWC-VWC-357]	B126883	1.00	10.0	07/23/15
15G1023-12 [LTM-SWC-VWC-358]	B126883	1.00	10.0	07/23/15
15G1023-13 [LTM-SWC-VWCD-359]	B126883	1.00	10.0	07/23/15
15G1023-14 [LTM-SWC-VWC-360]	B126883	1.00	10.0	07/23/15
15G1023-15 [LTM-SWC-VWC-361]	B126883	1.00	10.0	07/23/15
15G1023-16 [LTM-SWC-VWC-362]	B126883	1.00	10.0	07/23/15
15G1023-17 [LTM-SWC-VWC-363]	B126883	1.00	10.0	07/23/15
15G1023-18 [LTM-SWC-VWC-364]	B126883	1.00	10.0	07/23/15
15G1023-19 [LTM-SWC-VWC-365]	B126883	1.00	10.0	07/23/15
15G1023-20 [LTM-SWC-VWC-366]	B126883	1.00	10.0	07/23/15

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
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

Batch B126883 - SW-846 3540C

Blank (B126883-BLK1)

Prepared: 07/23/15 Analyzed: 07/25/15

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	2.15		µg/Wipe	2.00		108	30-150			
Surrogate: Decachlorobiphenyl [2C]	1.97		µg/Wipe	2.00		98.4	30-150			
Surrogate: Tetrachloro-m-xylene	1.80		µg/Wipe	2.00		90.2	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	1.57		µg/Wipe	2.00		78.5	30-150			

LCS (B126883-BS1)

Prepared: 07/23/15 Analyzed: 07/25/15

Aroclor-1016	0.51	0.20	µg/Wipe	0.500		103	40-140			
Aroclor-1016 [2C]	0.46	0.20	µg/Wipe	0.500		92.8	40-140			
Aroclor-1260	0.62	0.20	µg/Wipe	0.500		124	40-140			
Aroclor-1260 [2C]	0.48	0.20	µg/Wipe	0.500		96.9	40-140			
Surrogate: Decachlorobiphenyl	2.01		µg/Wipe	2.00		100	30-150			
Surrogate: Decachlorobiphenyl [2C]	1.84		µg/Wipe	2.00		92.1	30-150			
Surrogate: Tetrachloro-m-xylene	1.84		µg/Wipe	2.00		91.9	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	1.57		µg/Wipe	2.00		78.5	30-150			

LCS Dup (B126883-BSD1)

Prepared: 07/23/15 Analyzed: 07/25/15

Aroclor-1016	0.53	0.20	µg/Wipe	0.500		105	40-140	2.52	30	
Aroclor-1016 [2C]	0.47	0.20	µg/Wipe	0.500		94.5	40-140	1.86	30	
Aroclor-1260	0.49	0.20	µg/Wipe	0.500		98.3	40-140	23.0	30	
Aroclor-1260 [2C]	0.51	0.20	µg/Wipe	0.500		103	40-140	5.65	30	
Surrogate: Decachlorobiphenyl	2.08		µg/Wipe	2.00		104	30-150			
Surrogate: Decachlorobiphenyl [2C]	1.92		µg/Wipe	2.00		95.8	30-150			
Surrogate: Tetrachloro-m-xylene	1.86		µg/Wipe	2.00		93.1	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	1.60		µg/Wipe	2.00		79.9	30-150			

**IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES****LTM-SWC-VWC-348***SW-846 8082A*Lab Sample ID: 15G1023-02 Date(s) Analyzed: 07/25/2015 07/25/2015

Instrument ID (1): Instrument ID (2):

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1248	1	0.00	0.00	0.00	0.58	
	2	0.00	0.00	0.00	0.68	16.6
Aroclor-1254	1	0.00	0.00	0.00	1.3	
	2	0.00	0.00	0.00	1.3	2.3

**IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES****LTM-SWC-VWC-366***SW-846 8082A*Lab Sample ID: 15G1023-20 Date(s) Analyzed: 07/27/2015 07/27/2015

Instrument ID (1): Instrument ID (2):

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1254	1	0.00	0.00	0.00	3.9	
	2	0.00	0.00	0.00	4.6	16.7

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

**IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES**

SW-846 8082A

LCS

Lab Sample ID: B126883-BS1 Date(s) Analyzed: 07/25/2015 07/25/2015

Instrument ID (1): Instrument ID (2):

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1016	1	0.00	0.00	0.00	0.51	
	2	0.00	0.00	0.00	0.46	11
Aroclor-1260	1	0.00	0.00	0.00	0.62	
	2	0.00	0.00	0.00	0.48	26

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

**IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES**

SW-846 8082A

LCS Dup

Lab Sample ID: B126883-BSD1 Date(s) Analyzed: 07/25/2015 07/25/2015

Instrument ID (1): Instrument ID (2):

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1016	1	0.00	0.00	0.00	0.53	
	2	0.00	0.00	0.00	0.47	11
Aroclor-1260	1	0.00	0.00	0.00	0.49	
	2	0.00	0.00	0.00	0.51	4

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

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

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

CERTIFICATIONS

Certified Analyses included in this Report

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

No certified Analyses included in this Report

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

Code	Description	Number	Expires
AIHA	AIHA-LAP, LLC	100033	02/1/2016
MA	Massachusetts DEP	M-MA100	06/30/2016
CT	Connecticut Department of Public Health	PH-0567	09/30/2015
NY	New York State Department of Health	10899 NELAP	04/1/2016
NH-S	New Hampshire Environmental Lab	2516 NELAP	02/5/2016
RI	Rhode Island Department of Health	LAO00112	12/30/2015
NC	North Carolina Div. of Water Quality	652	12/31/2015
NJ	New Jersey DEP	MA007 NELAP	09/30/2015
FL	Florida Department of Health	E871027 NELAP	06/30/2016
VT	Vermont Department of Health Lead Laboratory	LL015036	07/30/2016
WA	State of Washington Department of Ecology	C2065	02/23/2016
ME	State of Maine	2011028	06/9/2017
VA	Commonwealth of Virginia	460217	12/14/2015
NH-P	New Hampshire Environmental Lab	2557 NELAP	09/6/2015



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

CHAIN OF CUSTODY RECORD

39 Spruce Street
East Longmeadow, MA 01028

Page 1 of 2

Company Name: WOODWARD : CORAN Telephone: 978 557 8150

Address: 40 SHATTUCK RD Project # 225695

Attention: ANDREW MA 01810 Client PO#

Project Location: GEORGE FRANKLIN

Sampled By: GEORGE FRANKLIN GARCIA REYNOLDS

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

Proposal date

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

Fax #

Email: franklin@woodwardcoran.com

Format: ☒ PDF ☐ EXCEL ☐ GIS

Other

Enhanced Data Package

Collection

Beginning Date/Time

Ending Date/Time

Composite

Matrix Code

Conc Code

Conc Date

Conc Code

Conc Date

Conc Code

Conc Date

Conc Code

Conc Date

Conc Code

Conc Date

Conc Code

Conc Date

Conc Code

Conc Date

Is your project MCP or RCP?

MCP Form Required

RCP Form Required

MA State DW Form Required

PWSID #

NELAC & AIHA-LAP, LLC

Accredited

WBE/DBE Certified

Detection Limit Requirements

Massachusetts

Connecticut

Other

Turnaround

7-Day

10-Day

Other

RUSH

24-Hr

48-Hr

72-Hr

14-Day

Relinquished by: (signature) 7/22/15 0945

Relinquished by: (signature) 7-22-15 0945

Relinquished by: (signature) 7-22-15 1800

Relinquished by: (signature) 7/22/15 1800

Relinquished by: (signature) 7/22/15 1800

Relinquished by: (signature) 7/22/15 1800

Relinquished by: (signature) 7/22/15 1800

Relinquished by: (signature) 7/22/15 1800

Relinquished by: (signature) 7/22/15 1800

Page 34 of 37

URNAROUND TIME STARTS AT 9:00 A.M. THE DAY AFTER SAMPLE RECEIPT UNLESS THERE ARE QUESTIONS ON YOUR CHAIN. IF THIS FORM IS NOT FILLED OUT COMPLETELY OR

INCORRECT, TURNAROUND TIME WILL NOT START UNTIL ALL QUESTIONS ARE ANSWERED BY OUR CLIENT. PLEASE BE CAREFUL NOT TO CONTAMINATE THIS DOCUMENT

Table of Contents



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

CHAIN OF CUSTODY RECORD

39 Spruce Street
East Longmeadow, MA 01028

Page 2 of 2

Company Name: Woodner, LLC

Address: 40 SHATTUCK RD

Attention: ANDOVER, MA 01810

Project Location: UMass LTM - SWC

Sampled By: GEORGE FRANKLIN

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

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

Fax # 978 557 8150

Email: gfranklin@woodner.com

Format: ☒ PDF ☐ EXCEL ☐ GIS

Project # 225695

Client PO# 225695

Telephone: 978 557 8150

Project # 225695

Client PO# 225695

Telephone: 978 557 8150

Project # 225695

Client PO# 225695

Telephone: 978 557 8150

Project # 225695

Client PO# 225695

Telephone: 978 557 8150

Project # 225695

Client PO# 225695

Telephone: 978 557 8150

Project # 225695

Client PO# 225695

Telephone: 978 557 8150

Project # 225695

Rev 04.05.12

Con-Test Lab ID (laboratory use only)	Client Sample ID / Description	Beginning Date/Time	Ending Date/Time	Collection	Composite	Grab	*Matrix Conc Code
11	LTM-SWC-VWC-357	7/21/15	1237				0
12	LTM-SWC-VWC-358	7/21/15	1241				0
13	LTM-SWC-VWC-359	7/21/15	1241				0
14	LTM-SWC-VWC-360	7/21/15	1244				0
15	LTM-SWC-VWC-361	7/21/15	1249				0
16	LTM-SWC-VWC-362	7/21/15	1253				0
17	LTM-SWC-VWC-363	7/21/15	1257				0
18	LTM-SWC-VWC-364	7/21/15	1301				0
19	LTM-SWC-VWC-365	7/21/15	1303				0
20	LTM-SWC-VWC-366	7/21/15	1306				0

Comments: PCBs via USEPA 602 w/ Soxhlet Extraction (35ml)

Relinquished by: (signature) <u>[Signature]</u>	Date/Time: <u>7/21/15 0740</u>
Received by: (signature) <u>[Signature]</u>	Date/Time: <u>7-22-15 0945</u>
Inspected by: (signature) <u>[Signature]</u>	Date/Time: <u>7-22-15 1900</u>
Approved by: (signature) <u>[Signature]</u>	Date/Time: <u>7/22/15 1800</u>

Page 35 of 37

Turnaround	Detection Limit Requirements
<input type="checkbox"/> 7-Day <input type="checkbox"/> 10-Day <input checked="" type="checkbox"/> Other <u>50</u> RUSH <u>50M</u>	Massachusetts: <input type="checkbox"/> MCP Form Required <input type="checkbox"/> RCP Form Required <input type="checkbox"/> MA State DW Form Required PWSID # Connecticut: Other:

Is your project MCP or RCP?

- ☐ MCP Form Required
☐ RCP Form Required
☐ MA State DW Form Required PWSID #

NECAC & AIHA-LAP, LLC
Accredited
WBE/DBE Certified



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

PLEASE BE CAREFUL NOT TO CONTAMINATE THIS DOCUMENT

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



Page 1 of 2



Sample Receipt Checklist

CLIENT NAME: Woodard + Curran RECEIVED BY: LHP DATE: 7/22/15

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

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

If not, explain:

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

If not, explain:

4) How were the samples received:

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

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

Temperature °C by Temp blank _____ Temperature °C by Temp gun 4.7

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

Who was notified _____ Date _____ Time _____

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

Who was notified _____ Date _____ Time _____

7) Location where samples are stored: 19

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

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

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

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

Containers received at Con-Test

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

Laboratory Comments:

40 mL vials: # HCl _____ # Methanol _____

Dec# 277 # Bisulfate _____ # DI Water _____

Rev. 4 August 2013 # Thiosulfate _____ Unpreserved _____

Time and Date Frozen:

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

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

Doc #277 Rev. 4 August 2013

Who notified of False statements?

Log-In Technician Initials: LMP

Date/Time:

Date/Time: 7/22/15

August 4, 2015

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

Project Location: Umass Amherst Dubois
Client Job Number:
Project Number: 225685
Laboratory Work Order Number: 15G1040

Enclosed are results of analyses for samples received by the laboratory on July 22, 2015. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink that reads "Meghan E. Kelley". The signature is written in a cursive style with a large, stylized 'M' and 'K'.

Meghan E. Kelley
Project Manager

Table of Contents

Sample Summary	3
Case Narrative	4
Sample Results	5
Sample Preparation Information	11
QC Data	12
PCB Homologues by GC/MS with Soxhlet Extraction	12
B126965	12
Flag/Qualifier Summary	13
Certifications	14
Chain of Custody/Sample Receipt	15

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: 8/4/2015

PURCHASE ORDER NUMBER:

PROJECT NUMBER: 225685

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 15G1040

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

PROJECT LOCATION: Umass Amherst Dubois

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
DL-OUT-IAS-218	15G1040-01	Ambient Air		TO-10A/EPA 680 Modified	
DL-4E-IAS-219	15G1040-02	Indoor air		TO-10A/EPA 680 Modified	
DL-13E-IAS-220	15G1040-03	Indoor air		TO-10A/EPA 680 Modified	
DL-19E-IAS-221	15G1040-04	Indoor air		TO-10A/EPA 680 Modified	
DL-19E-IASD-222	15G1040-05	Indoor air		TO-10A/EPA 680 Modified	
DL-23E-IAS-223	15G1040-06	Indoor air		TO-10A/EPA 680 Modified	

CASE NARRATIVE SUMMARY

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

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

I certify that the analyses listed above, unless specifically listed as subcontracted, if any, were performed under my direction according to the approved methodologies listed in this document, and that based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

A handwritten signature in black ink, appearing to read "Tod Kopycinski", with a stylized, cursive script.

Tod E. Kopycinski
Laboratory Director

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

ANALYTICAL RESULTS

Project Location: Umass Amherst Dubois

Date Received: 7/22/2015

Field Sample #: DL-OUT-1AS-218

Sample ID: 15G1040-01

Sample Matrix: Ambient Air

Sampled: 7/21/2015 15:04

Sample Description/Location:

Sub Description/Location:

Flow Controller ID:

Sample Type:

Air Volume L: 650.400

Work Order: 15G1040

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	0.0015	1	7/24/15 16:15		CJM
Dichlorobiphenyls	ND	0.0010		ND	0.0015	1	7/24/15 16:15		CJM
Trichlorobiphenyls	ND	0.0010		ND	0.0015	1	7/24/15 16:15		CJM
Tetrachlorobiphenyls	ND	0.0020		ND	0.0031	1	7/24/15 16:15		CJM
Pentachlorobiphenyls	ND	0.0020		ND	0.0031	1	7/24/15 16:15		CJM
Hexachlorobiphenyls	ND	0.0020		ND	0.0031	1	7/24/15 16:15		CJM
Heptachlorobiphenyls	ND	0.0030		ND	0.0046	1	7/24/15 16:15		CJM
Octachlorobiphenyls	ND	0.0030		ND	0.0046	1	7/24/15 16:15		CJM
Nonachlorobiphenyls	ND	0.0050		ND	0.0077	1	7/24/15 16:15		CJM
Decachlorobiphenyl	ND	0.0050		ND	0.0077	1	7/24/15 16:15		CJM
Total Polychlorinated biphenyls	0.0			0		1	7/24/15 16:15		CJM

Surrogates	% Recovery	% REC Limits	
Tetrachloro-m-xylene	76.3	50-125	7/24/15 16:15

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

ANALYTICAL RESULTS

Project Location: Umass Amherst Dubois

Date Received: 7/22/2015

Field Sample #: DL-4E-IAS-219

Sample ID: 15G1040-02

Sample Matrix: Indoor air

Sampled: 7/21/2015 15:10

Sample Description/Location:

Sub Description/Location:

Work Order: 15G1040

Flow Controller ID:

Sample Type:

Air Volume L: 642.600

TO-10A/EPA 680 Modified

Analyte	Total µg		Flag/Qual	ug/m3		Dilution	Date/Time		
	Results	RL		Results	RL		Analyzed	Analyst	
Monochlorobiphenyls	0.013	0.0010		0.020	0.0016	1	7/24/15	16:48	CJM
Dichlorobiphenyls	0.016	0.0010		0.025	0.0016	1	7/24/15	16:48	CJM
Trichlorobiphenyls	0.040	0.0010		0.063	0.0016	1	7/24/15	16:48	CJM
Tetrachlorobiphenyls	0.071	0.0020		0.11	0.0031	1	7/24/15	16:48	CJM
Pentachlorobiphenyls	0.063	0.0020		0.098	0.0031	1	7/24/15	16:48	CJM
Hexachlorobiphenyls	0.021	0.0020		0.032	0.0031	1	7/24/15	16:48	CJM
Heptachlorobiphenyls	0.0055	0.0030		0.0086	0.0047	1	7/24/15	16:48	CJM
Octachlorobiphenyls	ND	0.0030		ND	0.0047	1	7/24/15	16:48	CJM
Nonachlorobiphenyls	ND	0.0050		ND	0.0078	1	7/24/15	16:48	CJM
Decachlorobiphenyl	ND	0.0050		ND	0.0078	1	7/24/15	16:48	CJM
Total Polychlorinated biphenyls	0.23			0.36		1	7/24/15	16:48	CJM

Surrogates	% Recovery	% REC Limits	
Tetrachloro-m-xylene	82.6	50-125	7/24/15 16:48

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

ANALYTICAL RESULTS

Project Location: Umass Amherst Dubois

Date Received: 7/22/2015

Field Sample #: DL-13E-IAS-220

Sample ID: 15G1040-03

Sample Matrix: Indoor air

Sampled: 7/21/2015 15:17

Sample Description/Location:

Sub Description/Location:

Work Order: 15G1040

Flow Controller ID:

Sample Type:

Air Volume L: 649.440

TO-10A/EPA 680 Modified

Analyte	Total µg		Flag/Qual	ug/m3		Dilution	Date/Time		
	Results	RL		Results	RL		Analyzed	Analyst	
Monochlorobiphenyls	0.016	0.0010		0.025	0.0015	1	7/24/15	17:21	CJM
Dichlorobiphenyls	0.026	0.0010		0.039	0.0015	1	7/24/15	17:21	CJM
Trichlorobiphenyls	0.065	0.0010		0.10	0.0015	1	7/24/15	17:21	CJM
Tetrachlorobiphenyls	0.15	0.0020		0.23	0.0031	1	7/24/15	17:21	CJM
Pentachlorobiphenyls	0.13	0.0020		0.20	0.0031	1	7/24/15	17:21	CJM
Hexachlorobiphenyls	0.026	0.0020		0.040	0.0031	1	7/24/15	17:21	CJM
Heptachlorobiphenyls	0.0039	0.0030		0.0061	0.0046	1	7/24/15	17:21	CJM
Octachlorobiphenyls	ND	0.0030		ND	0.0046	1	7/24/15	17:21	CJM
Nonachlorobiphenyls	ND	0.0050		ND	0.0077	1	7/24/15	17:21	CJM
Decachlorobiphenyl	ND	0.0050		ND	0.0077	1	7/24/15	17:21	CJM
Total Polychlorinated biphenyls	0.42			0.64		1	7/24/15	17:21	CJM

Surrogates	% Recovery	% REC Limits	
Tetrachloro-m-xylene	77.9	50-125	7/24/15 17:21

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

ANALYTICAL RESULTS

Project Location: Umass Amherst Dubois

Date Received: 7/22/2015

Field Sample #: DL-19E-IAS-221

Sample ID: 15G1040-04

Sample Matrix: Indoor air

Sampled: 7/21/2015 15:22

Sample Description/Location:

Sub Description/Location:

Flow Controller ID:

Sample Type:

Air Volume L: 654.240

Work Order: 15G1040

TO-10A/EPA 680 Modified

Analyte	Total µg		Flag/Qual	ug/m3		Dilution	Date/Time		
	Results	RL		Results	RL		Analyzed	Analyst	
Monochlorobiphenyls	0.033	0.0010		0.050	0.0015	1	7/24/15	17:54	CJM
Dichlorobiphenyls	0.039	0.0010		0.060	0.0015	1	7/24/15	17:54	CJM
Trichlorobiphenyls	0.098	0.0010		0.15	0.0015	1	7/24/15	17:54	CJM
Tetrachlorobiphenyls	0.16	0.0020		0.24	0.0031	1	7/24/15	17:54	CJM
Pentachlorobiphenyls	0.15	0.0020		0.23	0.0031	1	7/24/15	17:54	CJM
Hexachlorobiphenyls	0.035	0.0020		0.053	0.0031	1	7/24/15	17:54	CJM
Heptachlorobiphenyls	0.0065	0.0030		0.0099	0.0046	1	7/24/15	17:54	CJM
Octachlorobiphenyls	ND	0.0030		ND	0.0046	1	7/24/15	17:54	CJM
Nonachlorobiphenyls	ND	0.0050		ND	0.0076	1	7/24/15	17:54	CJM
Decachlorobiphenyl	ND	0.0050		ND	0.0076	1	7/24/15	17:54	CJM
Total Polychlorinated biphenyls	0.52			0.79		1	7/24/15	17:54	CJM

Surrogates	% Recovery	% REC Limits	
Tetrachloro-m-xylene	91.5	50-125	7/24/15 17:54

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

ANALYTICAL RESULTS

Project Location: Umass Amherst Dubois

Date Received: 7/22/2015

Field Sample #: DL-19E-IASD-222

Sample ID: 15G1040-05

Sample Matrix: Indoor air

Sampled: 7/21/2015 15:25

Sample Description/Location:

Sub Description/Location:

Work Order: 15G1040

Flow Controller ID:

Sample Type:

Air Volume L: 651.960

TO-10A/EPA 680 Modified

Analyte	Total µg		Flag/Qual	ug/m3		Dilution	Date/Time		
	Results	RL		Results	RL		Analyzed	Analyst	
Monochlorobiphenyls	0.031	0.0010		0.047	0.0015	1	7/24/15	18:27	CJM
Dichlorobiphenyls	0.033	0.0010		0.051	0.0015	1	7/24/15	18:27	CJM
Trichlorobiphenyls	0.079	0.0010		0.12	0.0015	1	7/24/15	18:27	CJM
Tetrachlorobiphenyls	0.12	0.0020		0.19	0.0031	1	7/24/15	18:27	CJM
Pentachlorobiphenyls	0.11	0.0020		0.17	0.0031	1	7/24/15	18:27	CJM
Hexachlorobiphenyls	0.025	0.0020		0.039	0.0031	1	7/24/15	18:27	CJM
Heptachlorobiphenyls	0.0049	0.0030		0.0075	0.0046	1	7/24/15	18:27	CJM
Octachlorobiphenyls	ND	0.0030		ND	0.0046	1	7/24/15	18:27	CJM
Nonachlorobiphenyls	ND	0.0050		ND	0.0077	1	7/24/15	18:27	CJM
Decachlorobiphenyl	ND	0.0050		ND	0.0077	1	7/24/15	18:27	CJM
Total Polychlorinated biphenyls	0.41			0.63		1	7/24/15	18:27	CJM

Surrogates	% Recovery	% REC Limits	
Tetrachloro-m-xylene	75.9	50-125	7/24/15 18:27

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

ANALYTICAL RESULTS

Project Location: Umass Amherst Dubois

Date Received: 7/22/2015

Field Sample #: DL-23E-IAS-223

Sample ID: 15G1040-06

Sample Matrix: Indoor air

Sampled: 7/21/2015 15:30

Sample Description/Location:

Sub Description/Location:

Work Order: 15G1040

Flow Controller ID:

Sample Type:

Air Volume L: 650.160

TO-10A/EPA 680 Modified

Analyte	Total µg		Flag/Qual	ug/m3		Dilution	Date/Time		
	Results	RL		Results	RL		Analyzed	Analyst	
Monochlorobiphenyls	0.033	0.0010		0.051	0.0015	1	7/24/15	19:00	CJM
Dichlorobiphenyls	0.037	0.0010		0.057	0.0015	1	7/24/15	19:00	CJM
Trichlorobiphenyls	0.075	0.0010		0.12	0.0015	1	7/24/15	19:00	CJM
Tetrachlorobiphenyls	0.12	0.0020		0.19	0.0031	1	7/24/15	19:00	CJM
Pentachlorobiphenyls	0.10	0.0020		0.16	0.0031	1	7/24/15	19:00	CJM
Hexachlorobiphenyls	0.029	0.0020		0.044	0.0031	1	7/24/15	19:00	CJM
Heptachlorobiphenyls	0.0066	0.0030		0.010	0.0046	1	7/24/15	19:00	CJM
Octachlorobiphenyls	ND	0.0030		ND	0.0046	1	7/24/15	19:00	CJM
Nonachlorobiphenyls	ND	0.0050		ND	0.0077	1	7/24/15	19:00	CJM
Decachlorobiphenyl	ND	0.0050		ND	0.0077	1	7/24/15	19:00	CJM
Total Polychlorinated biphenyls	0.41			0.63		1	7/24/15	19:00	CJM

Surrogates	% Recovery	% REC Limits	
Tetrachloro-m-xylene	90.3	50-125	7/24/15 19:00

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

Sample Extraction Data

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

Lab Number [Field ID]	Batch	Initial [Cartridge	Final [mL]	Date
15G1040-01 [DL-OUT-IAS-218]	B126965	1.00	1.00	07/23/15
15G1040-02 [DL-4E-IAS-219]	B126965	1.00	1.00	07/23/15
15G1040-03 [DL-13E-IAS-220]	B126965	1.00	1.00	07/23/15
15G1040-04 [DL-19E-IAS-221]	B126965	1.00	1.00	07/23/15
15G1040-05 [DL-19E-IASD-222]	B126965	1.00	1.00	07/23/15
15G1040-06 [DL-23E-IAS-223]	B126965	1.00	1.00	07/23/15

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 B126965 - SW-846 3540C

Blank (B126965-BLK1)

Prepared: 07/23/15 Analyzed: 07/24/15

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

Surrogate: Tetrachloro-m-xylene 0.168 0.200 84.0 50-125

LCS (B126965-BS1)

Prepared: 07/23/15 Analyzed: 07/24/15

Monochlorobiphenyls	0.11	0.0010	0.200	55.8	40-140
Dichlorobiphenyls	0.14	0.0010	0.200	67.8	40-140
Trichlorobiphenyls	0.14	0.0010	0.200	71.8	40-140
Tetrachlorobiphenyls	0.31	0.0020	0.400	77.1	40-140
Pentachlorobiphenyls	0.30	0.0020	0.400	75.6	40-140
Hexachlorobiphenyls	0.30	0.0020	0.400	75.7	40-140
Heptachlorobiphenyls	0.47	0.0030	0.600	77.6	40-140
Octachlorobiphenyls	0.49	0.0030	0.600	82.4	40-140
Nonachlorobiphenyls	0.95	0.0050	1.00	95.3	40-140
Decachlorobiphenyl	0.97	0.0050	1.00	97.4	40-140

Surrogate: Tetrachloro-m-xylene 0.147 0.200 73.3 50-125

LCS Dup (B126965-BSD1)

Prepared: 07/23/15 Analyzed: 07/24/15

Monochlorobiphenyls	0.13	0.0010	0.200	65.9	40-140	16.5	50
Dichlorobiphenyls	0.16	0.0010	0.200	79.0	40-140	15.3	50
Trichlorobiphenyls	0.16	0.0010	0.200	82.1	40-140	13.4	50
Tetrachlorobiphenyls	0.35	0.0020	0.400	86.7	40-140	11.7	50
Pentachlorobiphenyls	0.33	0.0020	0.400	83.2	40-140	9.49	50
Hexachlorobiphenyls	0.33	0.0020	0.400	82.3	40-140	8.37	50
Heptachlorobiphenyls	0.50	0.0030	0.600	84.0	40-140	7.92	50
Octachlorobiphenyls	0.54	0.0030	0.600	89.6	40-140	8.36	50
Nonachlorobiphenyls	1.0	0.0050	1.00	103	40-140	7.89	50
Decachlorobiphenyl	1.1	0.0050	1.00	105	40-140	7.88	50

Surrogate: Tetrachloro-m-xylene 0.163 0.200 81.5 50-125

FLAG/QUALIFIER SUMMARY

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

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

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

Certifications

AIHA

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

Code	Description	Number	Expires
AIHA	AIHA-LAP, LLC	100033	02/1/2016
MA	Massachusetts DEP	M-MA100	06/30/2016
CT	Connecticut Department of Public Health	PH-0567	09/30/2015
NY	New York State Department of Health	10899 NELAP	04/1/2016
NH-S	New Hampshire Environmental Lab	2516 NELAP	02/5/2016
RI	Rhode Island Department of Health	LAO00112	12/30/2015
NC	North Carolina Div. of Water Quality	652	12/31/2015
NJ	New Jersey DEP	MA007 NELAP	09/30/2015
FL	Florida Department of Health	E871027 NELAP	06/30/2016
VT	Vermont Department of Health Lead Laboratory	LL015036	07/30/2016
WA	State of Washington Department of Ecology	C2065	02/23/2016
ME	State of Maine	2011028	06/9/2017
VA	Commonwealth of Virginia	460217	12/14/2015
NH-P	New Hampshire Environmental Lab	2557 NELAP	09/6/2015



con-test
ANALYTICAL LABORATORY

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

AIR SAMPLE CHAIN OF CUSTODY

RECORD

1561040

Company Name: Woodard & Curran

Address: 40 Shattuck Road

Andover, MA 01810

Attention: George Franklin

Project Location: UMass LTMM Dubois Library

Sampled By: George Franklin and Julia Perry

Proposal Provided? (For Billing purposes)

☐ Yes ☐ No

Telephone: (978) 557-8150

Project # 225695

Client PO # UMass LTMM

DATA DELIVERY (check one):

☐ FAX ☒ EMAIL ☐ WEBSITE CLIENT

Fax #:

Email: gfranklin; jhamel; jperry

Format: ☐ EXCEL ☒ PDF ☐ GIS KEY ☐ OTHER

ONLY USE WHEN USING PUMPS

☐ OTHER

Date Sampled

Start Stop

Date Time

Minutes Sampled

Flow Rate

M³/Min. or L/Min.

Volume

Liters or M³

Matrix Code*

PCB Homologs

PCB Homologs

PCB Homologs

PCB Homologs

PCB Homologs

PCB Homologs

PCB Homologs

PCB Homologs

PCB Homologs

PCB Homologs

PCB Homologs

PCB Homologs

PCB Homologs

PCB Homologs

PCB Homologs

PCB Homologs

PCB Homologs

PCB Homologs

PCB Homologs

PCB Homologs

PCB Homologs

PCB Homologs

PCB Homologs

PCB Homologs

Page 1 of 1

39 SPRUCE ST

EAST LONGMEADOW, MA 01028

ANALYSIS REQUESTED

PCB Homologs

PCB Homologs

PCB Homologs

PCB Homologs

PCB Homologs

PCB Homologs

PCB Homologs

PCB Homologs

PCB Homologs

PCB Homologs

PCB Homologs

PCB Homologs

PCB Homologs

PCB Homologs

PCB Homologs

PCB Homologs

PCB Homologs

PCB Homologs

PCB Homologs

PCB Homologs

PCB Homologs

PCB Homologs

PCB Homologs

PCB Homologs

PCB Homologs

PCB Homologs

PCB Homologs

PCB Homologs

PCB Homologs

PCB Homologs

PCB Homologs

PCB Homologs

PCB Homologs

PCB Homologs

PCB Homologs

PCB Homologs

PCB Homologs

PCB Homologs

PCB Homologs

PCB Homologs

PCB Homologs

PCB Homologs

PCB Homologs

Please fill out completely, sign, date and retain the yellow copy for your record.

Summa canisters and flow controllers must be returned within 14 days of receipt or rental fees will apply.

Summa canisters will be retained for a minimum of 14 days after sampling date prior to cleaning.

Summa Canister ID

Flow Controller ID

Summa Canister ID

Flow Controller ID

Summa Canister ID

Flow Controller ID

Summa Canister ID

Flow Controller ID

Summa Canister ID

Flow Controller ID

Summa Canister ID

Flow Controller ID

Summa Canister ID

Flow Controller ID

Summa Canister ID

Flow Controller ID

Summa Canister ID

Flow Controller ID

Summa Canister ID

Flow Controller ID

Summa Canister ID

Flow Controller ID

Summa Canister ID

Flow Controller ID

Summa Canister ID

Flow Controller ID

Summa Canister ID

Flow Controller ID

Summa Canister ID

Flow Controller ID

Summa Canister ID

Flow Controller ID

Summa Canister ID

Flow Controller ID

Summa Canister ID

Flow Controller ID

Summa Canister ID

Flow Controller ID

Summa Canister ID

Flow Controller ID

Summa Canister ID

Flow Controller ID

Summa Canister ID

Flow Controller ID

Matrix Code:

SG= SOIL GAS

IA= INDOOR AIR

AMB= AMBIENT

SS= SUB SLAB

D= DUP

BL= BLANK

O= Other

Media Codes:

S= summa can

T= tedlar bag

P= PUF

T= tube

F= filter

C= cassette

O= Other

Regulations:

Data Enhancement/RCP? ☐ Y ☐ N

Enhanced Data Package ☐ Y ☐ N

(Surcharge Applies)

Required Detection Limits:

Other:

Turnaround **

7-Day

10-Day

Other

RUSH *

*24-Hr ☐ *48-Hr

*72-Hr ☐ *4-Day

*Approval Required

Date/Time:

7/21/15 0940

Date/Time:

7-22-15 0945

Date/Time:

7-22-15 1900

Date/Time:

7/22/15 1800

Date/Time:

7/22/15 1800

Date/Time:

7/22/15 1800

Date/Time:

7/22/15 1800

Date/Time:

7/22/15 1800

Date/Time:

Relinquished by: (signature)

Relinquished by: (signature)

Relinquished by: (signature)

Relinquished by: (signature)

Relinquished by: (signature)

Relinquished by: (signature)

Relinquished by: (signature)

Relinquished by: (signature)

Relinquished by: (signature)

Relinquished by: (signature)

Relinquished by: (signature)

Relinquished by: (signature)

Relinquished by: (signature)

Relinquished by: (signature)

Relinquished by: (signature)

Relinquished by: (signature)

Relinquished by: (signature)

Relinquished by: (signature)

Relinquished by: (signature)

Relinquished by: (signature)

Relinquished by: (signature)

Relinquished by: (signature)

Relinquished by: (signature)

Relinquished by: (signature)

Relinquished by: (signature)

Relinquished by: (signature)

Relinquished by: (signature)

Relinquished by: (signature)

Relinquished by: (signature)

Relinquished by: (signature)

Relinquished by: (signature)

Relinquished by: (signature)

Relinquished by: (signature)

Relinquished by: (signature)

Relinquished by: (signature)

Relinquished by: (signature)

Relinquished by: (signature)

Relinquished by: (signature)

Relinquished by: (signature)

Relinquished by: (signature)

Relinquished by: (signature)

Relinquished by: (signature)

Relinquished by: (signature)

Relinquished by: (signature)

Relinquished by: (signature)

Relinquished by: (signature)

Relinquished by: (signature)

Relinquished by: (signature)

Relinquished by: (signature)

Relinquished by: (signature)

Relinquished by: (signature)

Relinquished by: (signature)

Relinquished by: (signature)

Relinquished by: (signature)

Relinquished by: (signature)

Relinquished by: (signature)

Relinquished by: (signature)

Relinquished by: (signature)

Relinquished by: (signature)

Relinquished by: (signature)

Relinquished by: (signature)

Relinquished by: (signature)

Relinquished by: (signature)

Relinquished by: (signature)

Relinquished by: (signature)

Relinquished by: (signature)

Relinquished by: (signature)

Relinquished by: (signature)

Relinquished by: (signature)

Relinquished by: (signature)

Relinquished by: (signature)

Relinquished by: (signature)

Relinquished by: (signature)

Relinquished by: (signature)

Relinquished by: (signature)

Relinquished by: (signature)

Relinquished by: (signature)

Relinquished by: (signature)

Relinquished by: (signature)

Relinquished by: (signature)

Relinquished by: (signature)

Relinquished by: (signature)

Relinquished by: (signature)

Relinquished by: (signature)

Relinquished by: (signature)

Relinquished by: (signature)

Relinquished by: (signature)

Relinquished by: (signature)

Relinquished by: (signature)

Relinquished by: (signature)

Relinquished by: (signature)

Relinquished by: (signature)

Relinquished by: (signature)

Relinquished by: (signature)

Relinquished by: (signature)

Relinquished by: (signature)

Relinquished by: (signature)

Relinquished by: (signature)

Relinquished by: (signature)

Relinquished by: (signature)

Relinquished by: (signature)

Relinquished by: (signature)

Relinquished by: (signature)

Relinquished by: (signature)

Relinquished by: (signature)

Relinquished by: (signature)

Relinquished by: (signature)

Relinquished by: (signature)

Relinquished by: (signature)

Relinquished by: (signature)

Relinquished by: (signature)

Relinquished by: (signature)

Relinquished by: (signature)

Relinquished by: (signature)

Relinquished by: (signature)

Relinquished by: (signature)

Relinquished by: (signature)

Relinquished by: (signature)



www.contestlabs.com



Page 1 of 2

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

AIR Only Receipt Checklist

CLIENT NAME: Woodard and Curran RECEIVED BY: JDL DATE: 7/22/15

1) Was the chain(s) of custody relinquished and signed?

Yes No

2) Does the chain agree with the samples?

Yes No

If not, explain:

3) Are all the samples in good condition?

Yes No

If not, explain:

4) Are there any samples "On Hold"?

Yes No

Stored where:

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

Yes No

Who was notified _____ Date _____ Time _____

6) Location where samples are stored:

19

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

7) Number of cans Individually Certified or Batch Certified? _____

Containers received at Con-Test

	# of Containers	Types (Size, Duration)
Summa Cans (TO-14/TO-15/APH)		
Tedlar Bags		
TO-17 Tubes		
Regulators		
Restrictors		
Hg/Hopcalite Tube (NIOSH 6009)		
(TO-4A/ TO-10A/TO-13) PUFs	7	low volume
PCB Florisil Tubes (NIOSH 5503)		
Air cassette		
PM 2.5/PM 10		
TO-11A Cartridges		
Other		

Unused Summas/PUF Media:

Unused Regulators:

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

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

Laboratory Comments: PUF lot #'s: 071715-01 " - 04 " - 07
" - 02 " - 05
" - 03 " - 06

Page 2 of 2

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

Question	Any False statement will be brought to the attention of Client		Comment
	Answer (True/False)		
	T/F/NA		
1) The coolers'/boxes' custody seal, if present, is intact.	NA		
2) The cooler or samples do not appear to have been compromised or tampered with.	T		
3) Samples were received on ice.	T		
4) Cooler Temperature is acceptable.	T		
5) Cooler Temperature is recorded.	T		
6) COC is filled out in ink and legible.	T		
7) COC is filled out with all pertinent information.	T		
8) Field Sampler's name present on COC.	T		
9) Samples are received within Holding Time.	T		
10) Sample containers have legible labels.	T		
11) Containers/media are not broken or leaking and valves and caps are closed tightly.	T		
12) Sample collection date/times are provided.	T		
13) Appropriate sample/media containers are used.	T		
14) There is sufficient volume for all requested analyses, including any requested MS/MSDs.	T		
15) Trip blanks provided if applicable.	T		

Number of False statements?

Date/Time: 1/1/2025 1:10:10 PM

Doc #278 Rev. 5 October 2014

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

Date/Time:

Date/Time:

7/22/15 1800

October 26, 2015

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

Project Location: UMass Long Term Monitoring Dubois Library
Client Job Number:
Project Number: [none]
Laboratory Work Order Number: 15J0641

Enclosed are results of analyses for samples received by the laboratory on October 14, 2015. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, reading "Meghan E. Kelley". The signature is written in a cursive style with a large, flowing "M" and a long, sweeping underline.

Meghan E. Kelley
Project Manager

Table of Contents

Sample Summary	3
Case Narrative	4
Sample Results	5
Sample Preparation Information	11
QC Data	12
PCB Homologues by GC/MS with Soxhlet Extraction	12
B132860	12
Flag/Qualifier Summary	13
Certifications	14
Chain of Custody/Sample Receipt	15

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: 10/26/2015

PURCHASE ORDER NUMBER:

PROJECT NUMBER: [none]

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 15J0641

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

PROJECT LOCATION: UMass Long Term Monitoring Dubois Library

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
DL-OUT-IAS-224	15J0641-01	Ambient Air		TO-10A/EPA 680 Modified	
DL-4E-IAS-225	15J0641-02	Indoor air		TO-10A/EPA 680 Modified	
DL-13E-IAS-226	15J0641-03	Indoor air		TO-10A/EPA 680 Modified	
DL-13E-IASD-227	15J0641-04	Indoor air		TO-10A/EPA 680 Modified	
DL-19E-IAS-228	15J0641-05	Indoor air		TO-10A/EPA 680 Modified	
DL-23E-IAS-229	15J0641-06	Indoor air		TO-10A/EPA 680 Modified	

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

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:

V-05

Continuing calibration did not meet method specifications and was biased on the low side for this compound. Increased uncertainty is associated with the reported value which is likely to be biased on the low side.

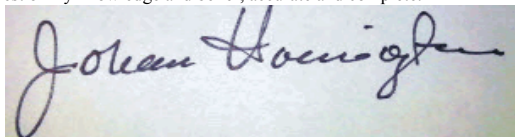
Analyte & Sample(s) Qualified:

Decachlorobiphenyl

15J0641-01[DL-OUT-IAS-224], 15J0641-02[DL-4E-IAS-225], 15J0641-03[DL-13E-IAS-226], 15J0641-04[DL-13E-IASD-227], 15J0641-05[DL-19E-IAS-228], 15J0641-06[DL-23E-IAS-229], B132860-BLK1, B132860-BS1, B132860-BSD1

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

I certify that the analyses listed above, unless specifically listed as subcontracted, if any, were performed under my direction according to the approved methodologies listed in this document, and that based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

A handwritten signature in black ink, reading "Johanna K. Harrington", is shown on a light-colored background.

Johanna K. Harrington

Manager, Laboratory Reporting

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

ANALYTICAL RESULTS

Project Location: UMass Long Term Monitoring D

Sample Description/Location:

Work Order: 15J0641

Date Received: 10/14/2015

Sub Description/Location:

Field Sample #: DL-OUT-IAS-224

Sample ID: 15J0641-01

Sample Matrix: Ambient Air

Flow Controller ID:

Sampled: 10/14/2015 13:00

Sample Type:

Air Volume L: 648.7

TO-10A/EPA 680 Modified

Analyte	Total µg		Flag/Qual	ug/m3		Dilution	Date/Time		
	Results	RL		Results	RL		Analyzed	Analyst	
Monochlorobiphenyls	ND	0.0010		ND	0.0015	1	10/19/15	18:27	CJM
Dichlorobiphenyls	ND	0.0010		ND	0.0015	1	10/19/15	18:27	CJM
Trichlorobiphenyls	ND	0.0010		ND	0.0015	1	10/19/15	18:27	CJM
Tetrachlorobiphenyls	ND	0.0020		ND	0.0031	1	10/19/15	18:27	CJM
Pentachlorobiphenyls	ND	0.0020		ND	0.0031	1	10/19/15	18:27	CJM
Hexachlorobiphenyls	ND	0.0020		ND	0.0031	1	10/19/15	18:27	CJM
Heptachlorobiphenyls	ND	0.0030		ND	0.0046	1	10/19/15	18:27	CJM
Octachlorobiphenyls	ND	0.0030		ND	0.0046	1	10/19/15	18:27	CJM
Nonachlorobiphenyls	ND	0.0050		ND	0.0077	1	10/19/15	18:27	CJM
Decachlorobiphenyl	ND	0.0050	V-05	ND	0.0077	1	10/19/15	18:27	CJM
Total Polychlorinated biphenyls	0.0			0		1	10/19/15	18:27	CJM

Surrogates	% Recovery	% REC Limits	
Tetrachloro-m-xylene	79.8	50-125	10/19/15 18:27

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

ANALYTICAL RESULTS

Project Location: UMass Long Term Monitoring D

Date Received: 10/14/2015

Field Sample #: DL-4E-IAS-225

Sample ID: 15J0641-02

Sample Matrix: Indoor air

Sampled: 10/14/2015 13:16

Sample Description/Location:

Sub Description/Location:

Work Order: 15J0641

Flow Controller ID:

Sample Type:

Air Volume L: 622.56

TO-10A/EPA 680 Modified

Analyte	Total µg		Flag/Qual	ug/m3		Dilution	Date/Time		
	Results	RL		Results	RL		Analyzed	Analyst	
Monochlorobiphenyls	0.0079	0.0010		0.013	0.0016	1	10/19/15	19:01	CJM
Dichlorobiphenyls	0.012	0.0010		0.020	0.0016	1	10/19/15	19:01	CJM
Trichlorobiphenyls	0.027	0.0010		0.043	0.0016	1	10/19/15	19:01	CJM
Tetrachlorobiphenyls	0.056	0.0020		0.090	0.0032	1	10/19/15	19:01	CJM
Pentachlorobiphenyls	0.066	0.0020		0.11	0.0032	1	10/19/15	19:01	CJM
Hexachlorobiphenyls	0.027	0.0020		0.043	0.0032	1	10/19/15	19:01	CJM
Heptachlorobiphenyls	0.0052	0.0030		0.0084	0.0048	1	10/19/15	19:01	CJM
Octachlorobiphenyls	ND	0.0030		ND	0.0048	1	10/19/15	19:01	CJM
Nonachlorobiphenyls	ND	0.0050		ND	0.008	1	10/19/15	19:01	CJM
Decachlorobiphenyl	ND	0.0050	V-05	ND	0.008	1	10/19/15	19:01	CJM
Total Polychlorinated biphenyls	0.20			0.32		1	10/19/15	19:01	CJM

Surrogates	% Recovery	% REC Limits	
Tetrachloro-m-xylene	75.8	50-125	10/19/15 19:01

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

ANALYTICAL RESULTS

Project Location: UMass Long Term Monitoring D

Date Received: 10/14/2015

Field Sample #: DL-13E-IAS-226

Sample ID: 15J0641-03

Sample Matrix: Indoor air

Sampled: 10/14/2015 13:24

Sample Description/Location:

Sub Description/Location:

Flow Controller ID:

Sample Type:

Air Volume L: 615.48

Work Order: 15J0641

TO-10A/EPA 680 Modified

Analyte	Total µg		Flag/Qual	ug/m3		Dilution	Date/Time		
	Results	RL		Results	RL		Analyzed	Analyst	
Monochlorobiphenyls	0.012	0.0010		0.020	0.0016	1	10/19/15	19:34	CJM
Dichlorobiphenyls	0.014	0.0010		0.024	0.0016	1	10/19/15	19:34	CJM
Trichlorobiphenyls	0.042	0.0010		0.069	0.0016	1	10/19/15	19:34	CJM
Tetrachlorobiphenyls	0.10	0.0020		0.17	0.0032	1	10/19/15	19:34	CJM
Pentachlorobiphenyls	0.11	0.0020		0.18	0.0032	1	10/19/15	19:34	CJM
Hexachlorobiphenyls	0.021	0.0020		0.034	0.0032	1	10/19/15	19:34	CJM
Heptachlorobiphenyls	ND	0.0030		ND	0.0049	1	10/19/15	19:34	CJM
Octachlorobiphenyls	ND	0.0030		ND	0.0049	1	10/19/15	19:34	CJM
Nonachlorobiphenyls	ND	0.0050		ND	0.0081	1	10/19/15	19:34	CJM
Decachlorobiphenyl	ND	0.0050	V-05	ND	0.0081	1	10/19/15	19:34	CJM
Total Polychlorinated biphenyls	0.31			0.50		1	10/19/15	19:34	CJM

Surrogates	% Recovery	% REC Limits	
Tetrachloro-m-xylene	72.5	50-125	10/19/15 19:34

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

ANALYTICAL RESULTS

Project Location: UMass Long Term Monitoring D

Date Received: 10/14/2015

Field Sample #: DL-13E-IASD-227

Sample ID: 15J0641-04

Sample Matrix: Indoor air

Sampled: 10/14/2015 13:28

Sample Description/Location:

Sub Description/Location:

Work Order: 15J0641

Flow Controller ID:

Sample Type:

Air Volume L: 641.06

TO-10A/EPA 680 Modified

Analyte	Total µg		Flag/Qual	ug/m3		Dilution	Date/Time		Analyst
	Results	RL		Results	RL		Analyzed		
Monochlorobiphenyls	0.012	0.0010		0.019	0.0016	1	10/19/15	20:07	CJM
Dichlorobiphenyls	0.014	0.0010		0.022	0.0016	1	10/19/15	20:07	CJM
Trichlorobiphenyls	0.042	0.0010		0.065	0.0016	1	10/19/15	20:07	CJM
Tetrachlorobiphenyls	0.11	0.0020		0.16	0.0031	1	10/19/15	20:07	CJM
Pentachlorobiphenyls	0.11	0.0020		0.18	0.0031	1	10/19/15	20:07	CJM
Hexachlorobiphenyls	0.022	0.0020		0.034	0.0031	1	10/19/15	20:07	CJM
Heptachlorobiphenyls	ND	0.0030		ND	0.0047	1	10/19/15	20:07	CJM
Octachlorobiphenyls	ND	0.0030		ND	0.0047	1	10/19/15	20:07	CJM
Nonachlorobiphenyls	ND	0.0050		ND	0.0078	1	10/19/15	20:07	CJM
Decachlorobiphenyl	ND	0.0050	V-05	ND	0.0078	1	10/19/15	20:07	CJM
Total Polychlorinated biphenyls	0.31			0.48		1	10/19/15	20:07	CJM

Surrogates	% Recovery	% REC Limits	
Tetrachloro-m-xylene	65.0	50-125	10/19/15 20:07

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

ANALYTICAL RESULTS

Project Location: UMass Long Term Monitoring D

Date Received: 10/14/2015

Field Sample #: DL-19E-IAS-228

Sample ID: 15J0641-05

Sample Matrix: Indoor air

Sampled: 10/14/2015 13:34

Sample Description/Location:

Sub Description/Location:

Flow Controller ID:

Sample Type:

Air Volume L: 648.96

Work Order: 15J0641

TO-10A/EPA 680 Modified

Analyte	Total µg		Flag/Qual	ug/m3		Dilution	Date/Time		
	Results	RL		Results	RL		Analyzed	Analyst	
Monochlorobiphenyls	0.018	0.0010		0.027	0.0015	1	10/19/15	20:40	CJM
Dichlorobiphenyls	0.022	0.0010		0.033	0.0015	1	10/19/15	20:40	CJM
Trichlorobiphenyls	0.061	0.0010		0.095	0.0015	1	10/19/15	20:40	CJM
Tetrachlorobiphenyls	0.11	0.0020		0.17	0.0031	1	10/19/15	20:40	CJM
Pentachlorobiphenyls	0.12	0.0020		0.19	0.0031	1	10/19/15	20:40	CJM
Hexachlorobiphenyls	0.025	0.0020		0.039	0.0031	1	10/19/15	20:40	CJM
Heptachlorobiphenyls	ND	0.0030		ND	0.0046	1	10/19/15	20:40	CJM
Octachlorobiphenyls	ND	0.0030		ND	0.0046	1	10/19/15	20:40	CJM
Nonachlorobiphenyls	ND	0.0050		ND	0.0077	1	10/19/15	20:40	CJM
Decachlorobiphenyl	ND	0.0050	V-05	ND	0.0077	1	10/19/15	20:40	CJM
Total Polychlorinated biphenyls	0.36			0.55		1	10/19/15	20:40	CJM

Surrogates	% Recovery	% REC Limits	
Tetrachloro-m-xylene	72.2	50-125	10/19/15 20:40

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

ANALYTICAL RESULTS

Project Location: UMass Long Term Monitoring D

Date Received: 10/14/2015

Field Sample #: DL-23E-IAS-229

Sample ID: 15J0641-06

Sample Matrix: Indoor air

Sampled: 10/14/2015 13:41

Sample Description/Location:

Sub Description/Location:

Work Order: 15J0641

Flow Controller ID:

Sample Type:

Air Volume L: 623.39

TO-10A/EPA 680 Modified

Analyte	Total µg		Flag/Qual	ug/m3		Dilution	Date/Time		
	Results	RL		Results	RL		Analyzed	Analyst	
Monochlorobiphenyls	0.023	0.0010		0.037	0.0016	1	10/19/15	21:13	CJM
Dichlorobiphenyls	0.020	0.0010		0.031	0.0016	1	10/19/15	21:13	CJM
Trichlorobiphenyls	0.043	0.0010		0.069	0.0016	1	10/19/15	21:13	CJM
Tetrachlorobiphenyls	0.074	0.0020		0.12	0.0032	1	10/19/15	21:13	CJM
Pentachlorobiphenyls	0.072	0.0020		0.12	0.0032	1	10/19/15	21:13	CJM
Hexachlorobiphenyls	0.018	0.0020		0.030	0.0032	1	10/19/15	21:13	CJM
Heptachlorobiphenyls	0.0031	0.0030		0.0049	0.0048	1	10/19/15	21:13	CJM
Octachlorobiphenyls	ND	0.0030		ND	0.0048	1	10/19/15	21:13	CJM
Nonachlorobiphenyls	ND	0.0050		ND	0.008	1	10/19/15	21:13	CJM
Decachlorobiphenyl	ND	0.0050	V-05	ND	0.008	1	10/19/15	21:13	CJM
Total Polychlorinated biphenyls	0.25			0.41		1	10/19/15	21:13	CJM

Surrogates	% Recovery	% REC Limits	
Tetrachloro-m-xylene	80.0	50-125	10/19/15 21:13

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

Lab Number [Field ID]	Batch	Initial [Cartridge	Final [mL]	Date
15J0641-01 [DL-OUT-IAS-224]	B132860	1.00	1.00	10/15/15
15J0641-02 [DL-4E-IAS-225]	B132860	1.00	1.00	10/15/15
15J0641-03 [DL-13E-IAS-226]	B132860	1.00	1.00	10/15/15
15J0641-04 [DL-13E-IASD-227]	B132860	1.00	1.00	10/15/15
15J0641-05 [DL-19E-IAS-228]	B132860	1.00	1.00	10/15/15
15J0641-06 [DL-23E-IAS-229]	B132860	1.00	1.00	10/15/15

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 B132860 - SW-846 3540C											
Blank (B132860-BLK1)					Prepared: 10/14/15 Analyzed: 10/19/15						
Monochlorobiphenyls	ND	0.0010									
Dichlorobiphenyls	ND	0.0010									
Trichlorobiphenyls	ND	0.0010									
Tetrachlorobiphenyls	ND	0.0020									
Pentachlorobiphenyls	ND	0.0020									
Hexachlorobiphenyls	ND	0.0020									
Heptachlorobiphenyls	ND	0.0030									
Octachlorobiphenyls	ND	0.0030									
Nonachlorobiphenyls	ND	0.0050									
Decachlorobiphenyl	ND	0.0050									V-05
Total Polychlorinated biphenyls	0.0										
Surrogate: Tetrachloro-m-xylene	0.135				0.200		67.4	50-125			
LCS (B132860-BS1)					Prepared: 10/14/15 Analyzed: 10/19/15						
Monochlorobiphenyls	0.14	0.0010			0.200		68.9	40-140			
Dichlorobiphenyls	0.13	0.0010			0.200		67.3	40-140			
Trichlorobiphenyls	0.13	0.0010			0.200		64.7	40-140			
Tetrachlorobiphenyls	0.28	0.0020			0.400		69.3	40-140			
Pentachlorobiphenyls	0.31	0.0020			0.400		76.7	40-140			
Hexachlorobiphenyls	0.31	0.0020			0.400		77.8	40-140			
Heptachlorobiphenyls	0.48	0.0030			0.600		79.8	40-140			
Octachlorobiphenyls	0.46	0.0030			0.600		76.1	40-140			
Nonachlorobiphenyls	0.77	0.0050			1.00		77.0	40-140			
Decachlorobiphenyl	0.53	0.0050			1.00		53.0	40-140			V-05
Surrogate: Tetrachloro-m-xylene	0.147				0.200		73.5	50-125			
LCS Dup (B132860-BSD1)					Prepared: 10/14/15 Analyzed: 10/19/15						
Monochlorobiphenyls	0.14	0.0010			0.200		72.0	40-140	4.36	50	
Dichlorobiphenyls	0.15	0.0010			0.200		72.9	40-140	8.01	50	
Trichlorobiphenyls	0.14	0.0010			0.200		70.4	40-140	8.36	50	
Tetrachlorobiphenyls	0.30	0.0020			0.400		75.9	40-140	9.15	50	
Pentachlorobiphenyls	0.34	0.0020			0.400		84.0	40-140	9.04	50	
Hexachlorobiphenyls	0.34	0.0020			0.400		84.6	40-140	8.31	50	
Heptachlorobiphenyls	0.52	0.0030			0.600		86.2	40-140	7.77	50	
Octachlorobiphenyls	0.50	0.0030			0.600		82.8	40-140	8.44	50	
Nonachlorobiphenyls	0.83	0.0050			1.00		83.4	40-140	8.05	50	
Decachlorobiphenyl	0.58	0.0050			1.00		58.1	40-140	9.11	50	V-05
Surrogate: Tetrachloro-m-xylene	0.143				0.200		71.4	50-125			

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
	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 did not meet method specifications and was biased on the low side for this compound. Increased uncertainty is associated with the reported value which is likely to be biased on the low side.

CERTIFICATIONS

Certified Analyses included in this Report

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

TO-10A/EPA 680 Modified in Air

Total Polychlorinated biphenyls AIHA

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

Code	Description	Number	Expires
AIHA	AIHA-LAP, LLC	100033	02/1/2016
MA	Massachusetts DEP	M-MA100	06/30/2016
CT	Connecticut Department of Public Health	PH-0567	09/30/2017
NY	New York State Department of Health	10899 NELAP	04/1/2016
NH-S	New Hampshire Environmental Lab	2516 NELAP	02/5/2016
RI	Rhode Island Department of Health	LAO00112	12/30/2015
NC	North Carolina Div. of Water Quality	652	12/31/2015
NJ	New Jersey DEP	MA007 NELAP	10/30/2015
FL	Florida Department of Health	E871027 NELAP	06/30/2016
VT	Vermont Department of Health Lead Laboratory	LL015036	07/30/2016
WA	State of Washington Department of Ecology	C2065	02/23/2016
ME	State of Maine	2011028	06/9/2017
VA	Commonwealth of Virginia	460217	12/14/2015
NH-P	New Hampshire Environmental Lab	2557 NELAP	09/6/2016



Phone: 413-525-2332

Fax: 413-525-6405

Email: info@contestlabs.com

Company Name: Woodward + Lozano

Address: 40 Shattuck Rd Andover, MA

Phone: 978-557-8150

Project Name: UMass Amherst - Doherty Library

Project Location: Amherst, MA

Project Number:

Project Manager: Jeff Humei

Con-Test Bid:

Invoice Recipient: George Franklin

Sampled By: Julie Perry

Requested Turnaround Time: ☐ 7-Day ☐ 10-Day ☒ Other: ASAP

Rush Approval Required: ☐ 1-Day ☐ 3-Day ☐ 2-Day ☐ 4-Day

Data Delivery: ☐ PDF ☒ EXCEL ☐ Other:

Enhanced Data Package Required: ☐

Email To: georgefranklin@umass.edu

Fax To #:

ANALYSIS REQUESTED

Lab Use	Con-Test Work Order #	Client Use		Collection Data		Duration		Flow Rate		Matrix Code	Volume Liters m ³	Lab Receipt Pressure		Summa Can ID	Flow Controller ID
		Client Sample ID / Description		Beginning Date/Time	Ending Date/Time	Total Minutes Sampled	m ³ /min L/min	m ³ /min L/min							
01		DL-OUT-1AS-224		10/14/15 9:00	10/14/15 13:00	240	2.703	2.703	AMB	648.7	X	Initial Pressure	29.36		
02		DL-4E-1AS-225		10/14/15 9:16	10/14/15 13:16	240	2.594	2.594	1A	622.54	X	Final Pressure	29.32		
03		DL-13E-1AS-226		10/14/15 9:24	10/14/15 13:24	240	2.565	2.565	1A	615.48	X		29.24		
04		DL-13E-1ASD-227		10/14/15 9:28	10/14/15 13:28	240	2.660	2.660	1A	641.06	X		29.24		
05		DL-19E-1AS-728		10/14/15 9:34	10/14/15 13:34	240	2.704	2.704	1A	648.96	X		29.24		
06		DL-23E-1AS-229		10/14/15 9:39	10/14/15 13:41	242	2.576	2.576	1A	623.39	X		29.24		

Comments: PCB homologs via USEPA method 68A

w/ RL < 0.1 µg/m³Please use the following codes to indicate possible sample concentration within the Conc Code column above:
H - High; M - Medium; L - Low; C - Clean; (U - Unknown)

Matrix Codes:

SG = SOIL GAS
IA = INDOOR AIR
AMB = AMBIENT
SS = SUB SLAB
D = DUP
BL = BLANK
O = Other

Relinquished by: (signature)	Date/Time:	Detection Limit Requirements	Special Requirements
<i>Julie Perry</i>	10/14/15 14:25	MA	
Received by: (signature)	Date/Time:		MA MCP Required
<i>Tom Mui</i>	10/14/15 17:26		
Relinquished by: (signature)	Date/Time:	CT	CT RCP Required
<i>Tom Mui</i>	10/14/15 16:00		
Received by: (signature)	Date/Time:	Other	Enhanced Data Package Required
<i>Tom Mui</i>	10/14/15 16:00		
Relinquished by: (signature)	Date/Time:		
<i>Tom Mui</i>			
Received by: (signature)	Date/Time:		
<i>Tom Mui</i>			

NELAP and AHA-LAP LLC Accredited

TURNAROUND TIME (BUSINESS DAYS) STARTS AT 9:00 AM THE DAY AFTER SAMPLE RECEIPT UNLESS THERE ARE QUESTIONS ON THIS CHAIN. IF THIS FORM IS NOT FILLED OUT COMPLETELY OR IS INCORRECT, TURNAROUND TIME CANNOT START UNTIL ALL QUESTIONS HAVE BEEN ANSWERED.

PLEASE BE CAREFUL NOT TO CONTAMINATE THIS DOCUMENT



www.contestlabs.com



Page 1 of 2

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

AIR Only Receipt Checklist

CLIENT NAME: Woodard & Curran RECEIVED BY: KB DATE: 10/14/15

1) Was the chain(s) of custody relinquished and signed?

☒ Yes ☐ No

2) Does the chain agree with the samples?

☒ Yes ☐ No

If not, explain:

3) Are all the samples in good condition?

☒ Yes ☐ No

If not, explain:

4) Are there any samples "On Hold"?

☐ Yes ☒ NoStored where:

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

☐ Yes ☒ No

Who was notified _____ Date _____ Time _____

6) Location where samples are stored:

WI

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

7) Number of cans Individually Certified or Batch Certified? _____

Containers received at Con-Test

	# of Containers	Types (Size, Duration)
Summa Cans (TO-14/TO-15/APH)		
Tedlar Bags		
TO-17 Tubes		
Regulators		
Restrictors		
Hg/Hopcalite Tube (NIOSH 6009)		
(TO-4A/ TO-10A/TO-13) PUFs	7	Low Vol.
PCB Florisil Tubes (NIOSH 5503)		
Air cassette		
PM 2.5/PM 10		
TO-11A Cartridges		
Other		

Unused Summas/PUF Media:

100915-07

Unused Regulators:

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

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

Laboratory Comments:

100915-01 -04
-02 -05
-03 -06

Page 2 of 2

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

Question	Answer (True/False)		Comment
	T/F/NA		
1) The coolers'/boxes' custody seal, if present, is intact.	NA		
2) The cooler or samples do not appear to have been compromised or tampered with.	T		
3) Samples were received on ice.	T		
4) Cooler Temperature is acceptable.	T		
5) Cooler Temperature is recorded.	T		
6) COC is filled out in ink and legible.	T		
7) COC is filled out with all pertinent information.	T		
8) Field Sampler's name present on COC.	T		
9) Samples are received within Holding Time.	T		
10) Sample containers have legible labels.	T		
11) Containers/media are not broken or leaking and valves and caps are closed tightly.	T		
12) Sample collection date/times are provided.	T		
13) Appropriate sample/media containers are used.	T		
14) There is sufficient volume for all requested analyses, including any requested MS/MSDs.	T		
15) Trip blanks provided if applicable.	NA		

Doc #278 Rev. 5 October 2014

Who notified of False statements?

Log-In Technician Initials:

KB

Date/Time:

Date/Time:

10/14/15
16:00

DUBOIS LIBRARY JULY 2015 - PROJECT SUMMARY

Con-test Analytical Laboratory Job Number::15G1040

The data validation was conducted in accordance with "USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review" June 2008; "EPA New England Environmental Data Review Supplement For Regional Data Review Elements and Superfund Specific Guidance/Procedures" April 2013; and the referenced methods.

The criteria detailed below were used to qualify the data. Raw data were not used to verify the results reported by the laboratory.

Samples were received at ambient temperature. No qualifications were applied.

PCB Homologs:

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

All PCB homolog surrogates met acceptance criteria. No qualifications were applied.

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

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

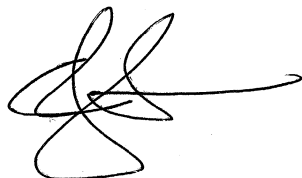
No PCB homolog matrix spike/matrix spike duplicate (MS/MSD) was performed since these were air samples. No qualifications were applied.

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

PCB homolog field duplicate samples DL-19E-IAS-221 (15G1040-04)/DL-19E-IASD-222 (15G1040-05) met acceptance criteria. No qualifications were applied.

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

Gloria J. Switalski:
President



Date:

8/7/2015

**UMASS LONG TERM MONITORING
PROJECT SUMMARY**

ConTest Analytical Laboratory Job Numbers: 15G1011, 15G1012, 15G1014, 15G1017, 15G1018, 15G1019, & 15G1023

The data validation was conducted in accordance with "USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review" June 2008; "EPA New England Environmental Data Review Supplement For Regional Data Review Elements and Superfund Specific Guidance/Procedures" April 2013, and the referenced method.

The criteria detailed below were used to qualify the data. Raw data were not used to verify the results reported by the laboratory.

Samples were received at 4.7 degrees Celsius. No qualifications were applied.

PCBs:

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

All PCB surrogates met acceptance criteria or were diluted out. No qualifications were applied.

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

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

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

The PCB laboratory control sample/laboratory control sample duplicate (LCS/LCSD) met recovery and relative percent difference (RPD) acceptance criteria. No qualifications were applied.

PCB field duplicate samples LTM-DL-VWCD-248 (15G1011-07)/LTM-DL-VWC-249 (15G1011-08), LTM-BR-VWB-316 (15G1019-01)/LTM-BR-VWBD-332 (15G1019-02), and LTM-SWC-VWC-358 (15G1023-12)/LTM-SWC-VWCD-359 (15G1023-13) met acceptance criteria. No qualifications were applied.

The RPD between the column results for all detected PCBs met acceptance criteria ($\leq 25\%$) with the following exceptions:

LAB ID	SAMPLE ID	PCB	RPD	QUALIFIER
15G1018-03	LTM-MR-VWBV-306	1254	29.1	J
15G1018-05	LTM-MR-VWBV-309	1254	26.5	J
		1260	43.6	J
15G1018-07	LTM-MR-VWKV-312	1260	33.1	J
15G1019-08	LTM-BR-VWB-322	1254	25.7	J
15G1019-18	LTM-MR-VWBV-300	1254	29.7	J

According to the case narrative, for Aroclor-1254 in samples LTM-MR-VWBV-306 (15G1018-03), LTM-MR-VWBH-311 (15G1018-06), LTM-BR-VWB-322 (15G1019-08), and LTM-MR-VWBV-300 (15G1019-18); "Sample fingerprint does not match standard exactly. Aroclor with the closet matching pattern is reported." No qualifications were applied.

**UMASS LONG TERM MONITORING
PROJECT SUMMARY**

ConTest Analytical Laboratory Job Numbers: 15G1011, 15G1012, 15G1014, 15G1017, 15G1018, 15G1019, & 15G1023

Several samples were analyzed at a dilution due to the high concentration of PCBs present in the sample and/or due to sample matrix. Elevated quantitation limits are reported in these samples as a result of the dilutions performed.

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

Gloria J. Switalski:
President



Date:

11/11/2015

UMASS LONG TERM MONITORING DUBOIS LIBRARY - PROJECT SUMMARY

Con-Test Analytical Laboratory Job Numbers: 15B0673 & 15J0641

The data validation was conducted in accordance with "USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review" June 2008; "EPA New England Environmental Data Review Supplement For Regional Data Review Elements and Superfund Specific Guidance/Procedures" April 2013, and the referenced method.

The criteria detailed below were used to qualify the data. Raw data were not used to verify the results reported by the laboratory.

Samples were received at 2.9 °C or ambient temperature. No qualifications were applied.

PCBs:

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

According to the laboratory case narrative for 15J0641: "Continuing calibration did not meet method specifications and was biased on the low side for this compound. Increased uncertainty is associated with the associate value which is likely to be biased on the low side." Therefore, the non-detected decachlorobiphenyl result for all samples in 15J0641 was qualified as estimated (UJ).

All PCB homolog surrogates met acceptance criteria. No qualifications were applied.

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

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

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

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

PCB homolog field duplicate samples DL-13E-IAS-214 (15B0673-03)/DL-13ED-IAS-215 (15B0673-04) and DL-13E-IAS-226 (15J0641-03)/DL-13E-IASD-227 (15J0641-04) met acceptance criteria. No qualifications were applied.

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

Gloria J. Switalski:
President



Date:

11/11/2015