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Via Electronic Mail

September 29, 2023

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

Re: 2023 Long Term Monitoring Report – LGRC Tower A and Low-Rise Buildings
University of Massachusetts – Amherst
Amherst, Massachusetts

Dear Ms. Woodward:

On behalf of the University of Massachusetts (UMass), please find attached a copy of the 2023 Long Term Monitoring Report for Tower A and the Low-Rise buildings within the Lederle Graduate Research Center (LGRC) on UMass' campus in Amherst, Massachusetts. This report has been prepared to meet the reporting requirements of the Consent Agreement and Final Order (CAFO) dated June 20, 2012 between UMass and the U.S. Environmental Protection Agency (EPA) for the encapsulation of polychlorinated biphenyl (PCB) containing glazing sealants at the Tower A and Low-Rise buildings.

This report provides the results of the monitoring activities conducted in accordance with the Monitoring and Maintenance Plan (MMIP) for the encapsulated PCB containing glazing sealants at the Tower A and Low-Rise buildings and the encapsulated residual PCBs in certain exterior masonry materials at the Low-Rise building revised as per the 2021 Long Term Monitoring Report, which was approved by EPA in February 2022.

This report also includes documentation of the re-installation of the encapsulating barrier on the 4th, 6th, and 10th floors where, as documented in the 2022 report, the barrier had been found to have been disturbed. A summary of the actions taken following the identification of the disturbed materials and a description of the corrective actions and verification of installation is provided in Section 2.1.

Finally, based on the allowable time frame for full removal of glazing sealants under the CAFO (2027), UMass requests a meeting with EPA to discuss the status of PCB containing glazing sealants remaining in Tower A, the planned renovations to these areas, and a potential extension to the time frame for removal of materials not anticipated to be completed by 2027.

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

Sincerely,

WOODARD & CURRAN INC.

George J. Franklin, CHMM
Project Manager

Jeffrey A. Hamel, LSP, LEP
Senior Principal

cc: Terri Wolejko, UMass EH&S

Enclosure: 2023 Long Term Monitoring Report - LGRC

2023 LONG TERM MONITORING REPORT

PCB Encapsulated Surfaces

Lederle Graduate Research Center

Tower A and Low-Rise Buildings
Amherst, Massachusetts

Woodard & Curran

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UMass LGRC
September 2023

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Appendix A: Analytical Laboratory Reports

1. INTRODUCTION

This monitoring report has been prepared by Woodard & Curran, Inc. (Woodard & Curran) on behalf of the University of Massachusetts (UMass) in accordance with the requirements of the Consent Agreement and Final Order (CAFO) dated June 20, 2012 between UMass and the U.S. Environmental Protection Agency (EPA) for the Lederle Graduate Research Center (LGRC) Tower A and Low-Rise buildings located at 701 – 740 North Pleasant Street on the UMass campus in Amherst, Massachusetts (see Figure 1-1).

This monitoring report provides the results of the monitoring activities conducted in accordance with the Monitoring and Maintenance Implementation Plan (MMIP) developed in accordance with the requirements of the CAFO for the encapsulated polychlorinated biphenyl (PCB) containing window glazing sealants at the Tower A and Low-Rise buildings and the encapsulated residual PCBs in certain exterior masonry materials at the Low-Rise building and revised per the proposed 2021 Long Term Monitoring Report, which was approved by EPA in February 2022.

1.1 Background

As described in the CAFO, an approach was developed for the encapsulation of PCB-containing window glazing sealants as an interim measure until the glazing sealant could be removed during future window replacement projects. There were approximately 900 windows located at the LGRC subject to the CAFO. To date, approximately 705 of the 900 windows have been removed. The removals have been conducted in the following areas:

- As part of the National Institute of Health (NIH) renovations, 42 laboratory windows on the 3rd, 7th, and 8th floors of Tower A were removed as reported in the PCB Remediation Activities Completion Report dated December 17, 2012.
- All windows within the Low-Rise building, including the library areas and the 2nd floor bridge connector between the Low-Rise building and Tower A, were removed as either part of a large-scale window replacement project in 2014 (refer to the September 17, 2013 notification submittal and the December 29, 2014 Completion Report) or as part of the A106 renovations conducted in 2018 (refer to the notification submittal dated August 22, 2018 and the *Final Completion Report for Room A106 Renovations* dated September 23, 2019).
- Seven laboratory windows in Tower A Rooms 501 through 504 were removed as part of a laboratory renovation project in 2014/2015 (refer to the 2015 Long Term Monitoring Report – LGRC Tower A and Low-Rise Buildings, dated September 29, 2015).
- All windows in laboratory and office spaces on the 15th and 16th floors (28 windows) were replaced in 2022/2023 as part of comprehensive renovations to these floors (refer to the PCB Remediation Activity 30 Day Notification submitted to EPA by UMass on October 12, 2022).

In addition to the specific window removals mentioned above and prior to the CAFO, removal and off-site disposal of ≥ 50 parts per million (ppm) exterior perimeter window caulking and the remediation of exterior building materials impacted by PCBs was conducted in accordance with EPA's June 22, 2007 Alternative Decontamination Approval under 40 CFR 761.61(a), 62, and 79(h). The remediation activities included the removal and off-site disposal of the exterior caulking and removal of a minimum of ½ inch of exterior

concrete masonry around each of the windows to achieve the applicable high or low occupancy use clean up criteria (≤ 1 ppm for first floor locations and ≤ 25 ppm for second and third floor locations).

As described in the CAFO Notification submittal on September 17, 2013, the 2007/2008 exterior remediation activities were not completed at the 50 Type L windows on the Low-Rise and bridge connector due to the inaccessibility of exterior perimeter window caulking at these locations (the windows are located between two structural concrete features approximately 1.5 feet apart). Subsequent remediation activities at these 50 Type L windows were completed in 2014 and 2018. Remediation included caulking and window removal and the in-place management of residual PCB impacts > 25 ppm in exterior concrete, along with long term monitoring.

1.2 Summary of Interim Measures – Interior Glazing Sealants

Beginning in July 2012, Interim Measures were implemented/completed at the respective windows in Tower A and the Low-Rise building. A summary of the activities is provided below.

1.2.1 Summary of Remedial Activities

In accordance with the CAFO, Interim Measures were conducted to address the presence of PCBs ≥ 50 ppm in glazing sealants in the Tower (high rise) and Low-rise buildings as follows:

- A general cleaning of the window units and surrounding surfaces was conducted via the removal of dust and debris using a vacuum equipped with HEPA filtration followed by cleaning of surfaces with a standard industrial/commercial cleaner (Klean-Strip TSP Plus).

- Containment of the glazing sealants was achieved through the installation of a layer of aluminum foil tape and a bead of silicone caulking to reduce potential direct contact exposures.

As noted previously, all windows in the Low Rise were removed in 2013, 2014, and 2018. As such, the interim measure glazing containment condition is no longer present within the Low-Rise.

1.2.2 Visual Inspection and Verification/Baseline Sampling

Following completion of the Interim Measures, visual inspections were conducted to confirm completion of the activities. Post-cleaning verification wipe samples were collected from accessible non-porous surfaces surrounding the windows and post-encapsulation surface wipe samples were collected from the encapsulated surfaces and window frames following the procedures and frequencies described in the Interim Measures Plan (IMP). A summary of the results of the initial/baseline wipe samples is provided below.

Post-Cleaning Wipe Samples

Post-cleaning wipe samples were collected from window ledges as part of the interim measures implementation and prior to the removal of the Low-Rise windows. Following the cleaning of the surrounding areas, verification wipe samples were collected from the non-porous window ledges adjacent to the windows. In accordance with the IMP, post-cleaning wipe samples were collected at a frequency of one sample per floor in the high rise and at a frequency of one sample per 20 windows in the Low-Rise. Analytical results of the verification wipe samples indicated that PCBs were below the high occupancy use cleanup standard for non-porous surfaces (10 µg/100 cm^2) in all samples with results reported as follows:

- Total PCBs were reported as non-detect (< 0.20 µg/100 cm^2) in 31 samples; and
- Total PCBs were present in 23 samples at concentrations below 10 µg/100 cm^2, with concentrations ranging from 0.20 to 2.0 µg/100 cm^2 and an average concentration of 0.56 µg/100cm^2.

Post-Encapsulation Wipe Samples

To confirm that the aluminum foil tape and caulking were effective encapsulants of PCBs in the glazing sealants, wipe samples were collected from the surface of the newly installed caulking following standard wipe sampling procedures described in 40 CFR 761.123. A summary of the analytical results from the wipe samples is as follows:

- Total PCBs were reported as either non-detect (ten samples at < 0.20 µg/100 cm^2) or < 1 µg/100 cm^2 (five samples with reported concentrations ranging from 0.21 to 0.95 µg/100 cm^2) in 15 of the 17 samples collected; and
- Total PCBs were reported at concentrations > 1 µg/100 cm^2 in two samples with reported concentrations of 1.5 and 3.1 µg/100 cm^2 (both samples were collected from areas encapsulated during the NIH renovation prior to modifications to the barrier application methods).

To evaluate the suitability of an alternative wipe sampling procedure to assess "surface" concentrations on the newly applied porous caulking, additional wipe samples were collected using four different solvents/methods: hexane, isopropyl alcohol, saline, and dry wipe. Wipe samples were collected from the surfaces of the glazing sealants and from the encapsulated surfaces following installation of the aluminum tape and caulking barriers. Results from the wipe samples were described in detail in the PCB Interim Measures Completion Report dated June 2, 2014 and December 2014 Revised MMIP and indicated that while all four methods were able to detect PCBs on the surface of the source materials and the encapsulated surfaces, the more aggressive solvents reported higher results.

Based on these results, the December 2014 Revised MMIP included the potential collection of saline wipes to evaluate the potential presence of PCBs on the surface of the encapsulating barriers; however, saline wipes were not analyzed during subsequent events due to the continued results of the hexane wipes as presented in this report (i.e., hexane wipes continued to be below target levels).

1.3 Summary of Remediation and Verification Activities – Exterior Concrete at Type L Windows

Remediation activities associated with residual PCBs in exterior concrete surfaces surrounding the 50 Type L windows in the Low-Rise and the bridge connector were conducted in conjunction with the 2013/2014 window removal project and the 2018 Room A106 renovation project.

1.3.1 Summary of Remedial Activities

The remediation consisted of the following:

- Exterior perimeter window caulking and the window units containing ≥ 50 ppm PCBs was removed for disposal as PCB Bulk Product Waste using hand tools as part of the window removal project.
- Residual PCBs were encapsulated through the application of the following:

- Liquid Epoxy Coating – A two-inch-wide strip of epoxy (either Sikagard 62 liquid epoxy or DevCon 5-minute epoxy), centered on the former joint, was applied to concrete surfaces;
- Elastomeric Coating – Two coats of Sikagard 550W elastomeric coating were applied to concrete materials away from the joints and extending along the inner face of the concrete façade to match the rest of the building façade; and
- Replacement Frames – The replacement window frames and a replacement bead of caulking were installed over the former caulked joints.

Detailed descriptions of the implemented activities were presented in the *Window Removal Completion Report* submittal dated December 29, 2014 and in the *Final Completion Report for Room A106 Renovations* dated September 23, 2019.

1.3.2 Visual Inspection and Verification/Baseline Sampling

Following application/installation of each of the above barriers, visual inspections were conducted. For liquid coatings, the visual inspection was conducted to confirm the coatings were applied over the designated areas and had a smooth uniform appearance. For window frames and caulking, the inspection confirmed installation in accordance with the project specifications.

To confirm that the epoxy and elastomeric coatings were effective encapsulants of residual PCBs in the concrete, wipe samples were collected from the surfaces of the newly applied coatings at a frequency of one sample for every five window locations (twelve wipe samples were collected from each type of coating due to the phased sequencing of work at the Type L windows). A summary of the analytical results from the wipe samples is as follows:

- Liquid Epoxy Coatings – Analytical results from eleven of the twelve samples indicated that PCBs were non-detect (9 samples at < 0.20 µg/100cm^2) or less than the encapsulation target of 1 µg/100cm^2 (2 samples with reported concentrations of 0.22 and 0.28 µg/100cm^2). PCBs in the remaining sample were reported at concentration of 1.4 µg/100cm^2.
- Elastomeric Coatings – Analytical results indicated that PCBs were either non-detect (8 samples at < 0.20 µg/100cm^2) or less than the encapsulation target of 1 µg/100cm^2 (4 samples with a maximum concentration of 0.56 µg/100cm^2).

1.4 Monitoring and Maintenance Implementation Plan

In accordance with the requirements of the CAFO, annual monitoring is to be completed as part of the Interim Measures to monitor, over time, the effectiveness of the remedy for encapsulated PCB-containing glazing sealants. In addition, and as described in the December 2014 Revised MMIP, monitoring is also to be conducted for the residual PCB impacted exterior concrete encapsulated through the application of liquid coatings and replacement frames at the Type L windows. As presented in 2018 long term monitoring report, the removal of windows in Low-Rise Room A106 was completed in 2018. Therefore, indoor monitoring is no longer conducted in this space consistent with other low-rise locations and spaces within Tower A where the glazing sealants have been removed through window replacement.

As discussed in the MMIP, the evaluation of the effectiveness of the measures will be accomplished through:

- Visual inspection – to evaluate the physical condition of the new caulking and/or window frames; to look for signs of separation between the silicone sealant/aluminum foil tape and the glazing

sealant, window frame or glass; to look for signs of disturbance to the new sealants or exterior elastomeric coatings (Type L windows); and a general inspection of the surrounding areas.

- Accessible, Interior Non-Porous Surface Wipe Samples – A total of 8 wipe samples are to be collected from the Tower A high rise from adjacent window ledges /sills to assess the effectiveness of the Interim Measure in reducing / eliminating PCB-containing dust or particulate levels on these adjacent surfaces. Analytical results from the wipe samples are to be compared to the action level of ≤ 10 ug/100cm^2.
- Encapsulated, Interior Surfaces Wipe Samples – A total of 8 wipe samples are to be collected from the Tower A high rise from the new caulking/adjacent frame to assess the concentrations of PCBs on the surface of the encapsulating barrier. Analytical results from the wipe samples are to be compared to the action level of ≤ 1 ug/100cm^2; and
- Indoor Air Samples – 5 samples are to be collected from the Tower A high rise to assess indoor air levels of PCBs over time.

Annual monitoring activities were initiated in 2015. Results of the monitoring from 2015 through 2021 were consistent with the baseline monitoring results and communicated to EPA in the annual monitoring reports submitted in September of each year.

1.4.1 Plan Modifications

Based on the results of the long term monitoring from 2015 through 2021, a modification was proposed to the long term monitoring program in the 2021 Long Term Monitoring Report. The proposed change was to modify the frequency of the sampling components of the monitoring program to bi-ennial indoor air sampling and wipe sampling of both the accessible interior non-porous surfaces and the encapsulated surfaces/window frames. The visual inspections would still be conducted annually.

EPA provided several comments to the 2021 Report and proposed modifications, of which responses were submitted to EPA on February 1, 2022. As part of a response to a comment regarding seasonal variations in indoor air quality, specifically in certain elevator lobbies, an additional round of indoor air samples was proposed to be conducted in February 2022 to supplement the existing data collected in May, July and August. These results indicated that total PCBs were detected at concentrations within the range of previous sampling results from these areas (albeit on the lower end of the range) and well below the project specific action level of 500 ng/m^3 (EPA's exposure levels for evaluating PCBs in indoor school air for students ages 19 plus and adults, as amended in July 2015).

The proposed modifications to the sampling frequencies in the MMIP were approved by EPA via email on February 1, 2022, and the changes were implemented with the 2022 monitoring activities.

2. 2023 MONITORING ACTIVITIES

The 2023 monitoring activities consisted of visual inspections, surface wipe sampling of non-porous surfaces adjacent to the windows, surface wipe sampling of encapsulated surfaces, and the collection of indoor air samples. The locations of the windows are presented on Figures 2-1 through 2-4.

2.1 Corrective Actions

As presented in the 2022 monitoring report, visual inspections conducted in 2022 identified missing caulking and aluminum tape from the elevator lobby windows on the 6th and 10th floors and from windows in Rooms 403F, 404, 406, 408. It was noted that a sun-blocking film which is adhered to the interior side of the glass throughout Tower A had been removed at many windows including those with the missing caulking and aluminum tape; however, at many locations where the film had been removed the caulking and tape had not been disturbed. At locations where the caulking and tape had been removed, no disturbance to the underlying glazing sealants was noted.

Following confirmation of the extent of the missing barrier materials, UMass EH&S conducted interviews with staff, maintenance, and custodial personnel in the Tower A building to determine when and for what purpose the materials had been removed. The interviews were not successful in identifying the individuals responsible for the removal of the materials or a time frame for when they may have been removed (the materials were not noted as missing during the June 2021 visual inspections).

All work on campus, including maintenance and renovations, is required to be submitted to the Work Order System. This submittal can either be done directly or through the Building Coordinator (BC) and the Customer Service Representative (CSR) for the work areas/buildings. The BC and CSR are trained on the hazards in their work areas and to enter any building modifications into the Work Order System. The Work Order system automatically triggers an all hazard review by EH&S which identifies the presence of hazardous building materials that may be disturbed. UMass EH&S reviewed the Work Order System entries for the Tower A building. No work order entry related to the windows had been submitted.

At each location with missing caulking and aluminum tape, the window and surrounding surfaces were cleaned and the glazing sealants covered with metal tape and caulking following the procedures described in Section 4.2 of the IMP. Due to supply chain issues associated with the aluminum tape, completion of the repair activities was not achieved until September 2023. Visual inspections were conducted on September 8, 2023 to confirm that the repairs had covered the underlying glazing (and that the newly applied caulking covered the newly applied aluminum tape).

Four post-installation wipe samples were then collected from the surface of the newly installed encapsulated surfaces (caulking and window frames) and 4 wipe samples were collected from the surrounding non-porous surfaces/ledges.

The locations of the wipe samples are presented on Figures 2-1 through 2-4. A summary of the results is presented on Table 2-1 and as follows:

- Encapsulated Surfaces – analytical results reported PCBs as non-detect in one sample (< 0.20 ug/100cm^2) and at concentrations of 0.32, 0.62, and 1.0 ug/100cm^2 in the other three samples. These results are consistent with the baseline monitoring results after the initial installation of

interim measures and the results of routine monitoring conducted. The results also meet the project action level of ≤ 1 ug/100cm^2 for encapsulated surfaces.

- Non-Porous Surfaces/Window Ledges – analytical results reported PCBs as non-detect (< 0.20 ug/100cm^2) in two samples and present at concentrations of 0.21 and 0.73 ug/100cm^2. These results are consistent with the baseline monitoring results after the initial installation of interim measures (PCBs reported in 23 of 54 samples at an average of 0.56 ug/100cm^2) and below the project action level of ≤ 10 ug/100cm^2 for non-porous surfaces.

Based on the results of the visual inspection and surface wipe sampling, the repair activities were completed consistent with the requirements of the IMP. These areas will be incorporated into routine long term monitoring with the 2024 event.

2.2 Visual Inspections

Visual inspections of the interior encapsulated surfaces were conducted at the exterior elastomeric coatings of the Type L windows of the Low-Rise building and the Tower A high rise windows. The inspections consisted of an assessment as described in Section 1.4.

No signs of disturbance or deterioration were observed during the visual inspections.

2.3 Non-Routine Maintenance Activities

Based on discussions with UMass personnel, windows from Rooms 1506 through 1512 and Rooms 1606 through 1611 were replaced as part of comprehensive gut renovations on the 15th and 16th floors.in Tower A. Notification for the removal was provided to EPA in a letter dated October 12, 2022.

No other non-routine maintenance activities that disturbed the encapsulated materials were observed or conducted since the last Monitoring Report submittal (except for the repair activities described above).

2.4 Accessible Interior Non-Porous Spaces

Surface wipe samples were collected from eight representative locations on the accessible interior non-porous window sills adjacent to the Tower A windows as described in the MMIP. The locations of the wipe samples are depicted on Figures 2-1 through 2-4.

At each location, the wipe sample was collected in accordance with the standard wipe test method as described in 40 CFR 761.123. At each sample location, a 2-inch square gauze pad, saturated with hexane, was wiped across a 100 square centimeter template area. All samples were transported to the laboratory under standard Chain of Custody procedures, extracted using USEPA Method 3540C (Soxhlet extraction), and analyzed for PCBs using USEPA Method 8082.

Analytical results indicated that PCBs were either non-detect (3 samples with reporting limits of < 0.20 ug/100cm^2) or present at concentrations below the action level of 10 ug/cm^2 (7 samples with reported concentrations ranging from 0.22 ug/100cm^2 to 2.6 ug/100cm^2). Analytical results from wipes samples of these surfaces collected as part of long term monitoring continue to be below the project action level. The complete analytical laboratory report is provided in Appendix A. A summary of the analytical results is presented on Table 2-2.

2.5 Encapsulated Interior Surfaces

Surface wipe samples were collected from eight representative locations on the encapsulated surfaces and frames within the Tower A High Rise as described in the MMIP. The locations of the wipe samples were co-located with those collected from accessible non-porous surfaces and are depicted on Figures 2-1 through 2-4.

Wipe samples were collected in accordance with the standard wipe test method as described in 40 CFR 761.123 modified due to the narrow width of the sample area (total width of caulking and frame is approximately ¾-inch). At each sample location, a 2-inch square gauze pad, saturated with hexane, was wiped across a 22-inch long section of the caulking/window frame (to achieve a 100 cm^2 area). Samples were submitted for laboratory analysis as described above.

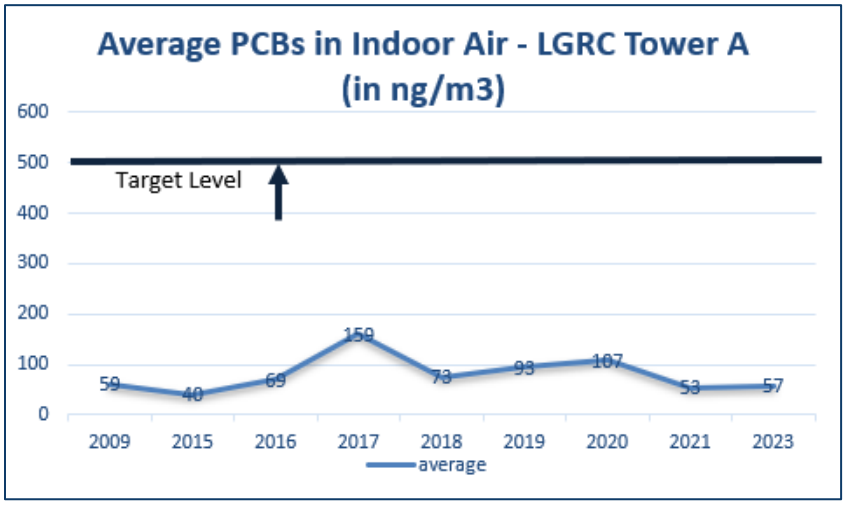
Analytical results from six of the eight samples reported PCBs as either non-detect (reporting limit of < 0.20 µg/100 cm^2) or at concentrations below the action level of <1 ug/100cm^2 (3 samples with PCBs reported at concentrations of 0.29, 0.36, and 0.60 ug/100cm^2). Analytical results from two samples reported PCBs at concentrations > 1 ug/100cm^2 with PCBs reported at concentrations of 2.71 and 8.0 ug/100cm^2 in samples collected from the 11th and 13th floors, respectively. Overall, the results are consistent with both the baseline wipe data collected following implementation of the interim actions (see Section 1.2.2 above) and previous monitoring events which have periodically reported PCBs > 1 ug/100cm^2. However, the reported result from the wipe sample collected from the window in the 13th floor elevator lobby (8 ug/100cm^2) is higher than previous results. While the overall data set continues to show effective encapsulation of the glazing sealant materials, follow-up wipe sampling is proposed for 2024 on the 13th floor elevator lobby windows to determine if the reported concentrations are indicative of a differing condition (see Section 3). The complete analytical laboratory report is provided in Appendix A. A summary of the analytical results is presented on Table 2-3.

2.6 Indoor Air

Five indoor air samples were collected from representative locations throughout the LGRC Tower A. In addition, one ambient/outdoor air sample was collected from outside Tower A and one duplicate sample was collected from the 4th floor. The indoor air samples were distributed in accordance with the MMIP with individual spaces selected based on the use of the space (e.g., offices, laboratories, common areas) throughout the building.

Air samples were 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. At each of the sample locations, a low volume PUF cartridge was connected to a personal air pump with flexible tubing and the cartridge was positioned between three and five feet above the floor using a telescoping tubing stand. Samples were collected at an approximate flow rate of 2.5 L/min for six hours. The flow rates were set by the equipment rental supply company prior to delivery and verified and adjusted as needed in the field using a digital flow rate calibrator. Atmospheric information (ambient temperatures and barometric pressures) was obtained from a portable commercially available weather monitoring station. Pumps and flow rates were monitored periodically throughout the sample collection period. At the end of the required sample interval, the pump was shut off and the cartridge placed in aluminum foil, labeled, and placed on ice for delivery to the analytical laboratory.

Analytical results indicated that total PCBs were detected at concentrations ranging from 27 ng/m^3 to 86 ng/m^3 with an average detected concentration of 57.4 ng/m^3. Analytical results were non-detect for PCBs in the outdoor/ambient sample. As shown on the graphical depiction below, these indoor air results are consistent with results from the previous sampling events conducted in Tower A in 2015 through 2021 and remain below the project action level of 500 ng/m^3 (EPA's exposure levels for evaluating PCBs in indoor school air for students ages 19 plus and adults, as amended on July 2015).



The complete analytical laboratory report and the associated data validation summary are provided in Appendix A and a summary of the analytical results is provided on Table 2-4.

3. SUMMARY AND CONCLUSIONS

Results of the 2023 long term monitoring event were as follows:

- Re-installation of barrier materials on windows on the 4th, 6th, and 10th floors were completed and visual inspections and post-application verification wipe samples were collected to confirm the glazing sealants were encapsulated in accordance with the IMP.
- Verification wipe samples collected from the adjacent non-porous sills were below the project action level, consistent with previous monitoring events.
- Verification wipe samples collected from the encapsulated surfaces were consistent with the baseline data and previous monitoring events with the exception of the wipe collected from the 13th floor elevator lobby window where follow-up wipe sampling will be conducted in 2024.
- Analytical results from indoor air samples reported PCBs at an average concentration of 57.4 ng/m^3 which was consistent with previous monitoring events and well below the action level of 500 ng/m^3.

3.1 Corrective Actions

No corrective actions are required based on the 2023 monitoring event.

3.2 Modifications to the Long Term Monitoring and Maintenance Plan

Based on the results of the inspections and sampling activities conducted in 2022, no modifications to the MMIP are proposed. However, one wipe sample will be collected from the encapsulated surfaces of the 13th floor elevator lobby window during the 2024 sampling event to confirm the result was not indicative of changes to interior conditions/encapsulating surfaces.

3.3 Next Steps

In accordance with the approved modifications to the MMIP, the next monitoring event will be conducted in June 2024 and will include annual visual inspections of the encapsulated glazing sealants and exterior masonry surrounding the Type L windows and the collection of one wipe from the 13th floor elevator lobby windows.

In addition, based on the allowable time frame for full removal of glazing sealants under the CAFO (2027), UMass requests a meeting with EPA to discuss the status of materials remaining in Tower A, the planned renovations to these areas, and a potential extension to the time frame for removal. A summary of the current status of window replacements for all spaces governed by the CAFO is provided on Table 3-1.

TABLES

Table 2-1: Summary of Post-Encapsulation Wipe Sampling Results

Table 2-2: Summary of Long Term Monitoring Wipe Sampling Results – Non-Porous Surfaces

Table 2-3: Summary of Long Term Monitoring Wipe Sampling Results – Encapsulated Surfaces

Table 2-4: Summary of Long Term Monitoring Indoor Air Sampling Results

Table 3-1: Summary of Window Removal Status and Scheduled Renovations

Table 2-1
Summary of Post Encapsulation Wipe Sampling Results
UMass Amherst

Floor	Room Number	Surface	Sample ID	Sample Date	Total PCBs (µg/100cm^2)
4th	408 - Lab	Caulking	LGRC-4VWC-007	9/8/2023	1.0
		Ledge	LGRC-4VWS-008	9/8/2023	< 0.20
4th	403 - Vacant Office	Caulking	LGRC-4VWC-005	9/8/2023	0.32
		Ledge	LGRC-4VWS-006	9/8/2023	0.21
6th	Elevator Lobby	Caulking	LGRC-6VWC-003	9/8/2023	< 0.20
		Ledge	LGRC-6VWS-004	9/8/2023	< 0.20
10th	Elevator Lobby	Caulking	LGRC-10VWC-001	9/8/2023	0.62
		Ledge	LGRC-10VWS-002	9/8/2023	0.73

Notes:
Wipe samples collected in accordance with the standard wipe test method of 40 CFR 761.123 using a hexane saturated guaze. Samples from caulking collected over entire 1/2" width of frame over a lenght of 32". Samples of sill collected from a 4'' x 4'' square centered on the window sill to achieve a 100cm^2 sample area.
Samples submitted for extraction via USEPA method 3540C (Soxhlet Extraction) and analyzed for PCBs via USEPA method 8082A.

Table 2-2
Summary of Long Term Monitoring Wipe Sampling Results - Non-Porous Surfaces
UMass Amherst

Floor	Room Number	Sample ID	Sample Date	Total PCBs (µg/100cm^2)
1	Elevator Lobby	LGRC-VWM-23-016	6/21/2023	1.35
3	Elevator Lobby	LGRC-VWM-23-014	6/21/2023	< 0.2
5	508	LGRC-VWM-23-012	6/21/2023	2.6
7	Elevator Lobby	LGRC-VWM-23-010	6/21/2023	0.22
9	904	LGRC-VWM-23-008	6/21/2023	0.49
11	1108	LGRC-VWM-23-006	6/21/2023	< 0.20
13	Elevator Lobby	LGRC-VWM-23-004	6/21/2023	< 0.20
15	Elevator Lobby	LGRC-VWM-23-002	6/21/2023	0.46

Notes:
Wipe samples collected in accordance with the standard wipe test method of 40 CFR 761.123 modified due to the narrow width of the area.
Samples submitted for extraction via USEPA method 3540C (Soxhlet Extraction) and analyzed for PCBs via USEPA method 8082A.

Table 2-3
Summary of Long Term Monitoring Wipe Sampling Results - Encapsulated Surfaces
UMass Amherst

Floor	Room Number	Sample ID	Sample Date	Total PCBs (µg/100cm^2)
1	Elevator Lobby	LGRC-VWM-23-015	6/21/2023	< 0.20
3	Elevator Lobby	LGRC-VWM-23-013	6/21/2023	0.29
5	508	LGRC-VWM-23-011	6/21/2023	< 0.20
7	Elevator Lobby	LGRC-VWM-23-009	6/21/2023	0.36
9	904	LGRC-VWM-23-007	6/21/2023	0.60
11	1108	LGRC-VWM-23-005	6/21/2023	2.71
13	Elevator Lobby	LGRC-VWM-23-003	6/21/2023	8.0
15	Elevator Lobby	LGRC-VWM-23-001	6/21/2023	< 0.20

Notes:
Wipe samples collected in accordance with the standard wipe test method of 40 CFR 761.123 modified due to the narrow width of the area.
Samples submitted for extraction via USEPA method 3540C (Soxhlet Extraction) and analyzed for PCBs

Table 2-4
Summary of Long Term Monitoring Indoor Air Sampling Results
UMass Amherst

Location	Air Sample	PCB Concentration (ng/cartridge)	Flow Rate (L/Minute)	Duration (minutes)	PCB Concentration (ng/m^3)
Project Action Level: 500 ng/m^3					
June 18, 2015	Average Recorded Temperature: Morning - 73 °F and Afternoon 74 °F				
Tower A - 403B	LGRC-403B-IAS-LT-011	35	2.79	240	53.5
Tower A -599A	LGRC-599A-IAS-LT-012	33	2.70	240	52.2
Tower A -903	LGRC-903-IAS-LT-013	16	2.78	240	24.7
Tower A -1105	LGRC-1105-IAS-LT-014	11	2.67	240	18.7
Tower A - 1506	LGRC-1506-IAS-LT-015	29	2.68	240	49.1
Low Rise - A106	LGRC-A106-IAS-LT-010	27	2.71	240	42.5
Ambient Air	LGRC-OUT-IAS-LT-016	0	2.68	240	0.0
June 21, 2016	Average Recorded Temperature: Morning - 77 °F and Afternoon 75 °F				
Tower A - 399A	LGRC-399A-IAS-005	32	2.66	365	33.8
Tower A -407	LGRC-407-IAS-007	46	2.67	361	49.4
Tower A - 606	LGRC-606-IAS-003	88	2.65	373	91.8
Tower A -1003C	LGRC-1003C-IAS-006	98	2.63	361	106.7
Tower A - 1606	LGRC-1606-IAS-002	63	2.67	378	64.3
Low Rise - A106	LGRC-A106-IAS-001	64	2.68	396	62.2
Ambient Air	LGRC-AMB-IAS-004	0	2.52	361	0.0
June 19, 2017	Average Recorded Temperature: Morning - 76 °F and Afternoon 79 °F				
Tower A - 299T	LGRC-299A-IAS-001	160	2.64	360	175.2
Tower A -399A	LGRC-399A-IAS-002	340	2.62	360	374.1
Tower A - 507	LGRC-507-IAS-003	86	2.68	360	92.3
Tower A -1303	LGRC-1303-IAS-004	73	2.65	360	79.1
Tower A - 1507	LGRC-1507-IAS-005	70	2.68	360	75.0
Low Rise - A106	LGRC-A106-IAS-007	17	2.66	360	18.3 J/UJ
Ambient Air	LGRC-AMB-IAS-006	0	2.62	360	0.0
June 25, 2018	Average Recorded Temperature: Morning - 74 °F and Afternoon 73 °F				
Tower A - 299T	LGRC-299-IAS-004	94	2.65	374	95.4
Tower A - 408	LGRC-408-IAS-003	19	2.65	373	19.3 UJ
Tower A - 899A	LGRC-899-IAS-002	22	2.63	369	23.4 UJ
Tower A - 1205	LGRC-1205-IAS-005	49	2.64	372	51.2
Tower A - 1606	LGRC-1606-IAS-001	80	2.65	371	101.7 UJ
Low Rise - A106	LGRC-A106-IAS-006	94	2.63	398	91.2
Ambient Air	LGRC-AMB-IAS-007	0	2.67	365	0.0
June 26, 2019	Average Recorded Temperature: Morning - 76 °F and Afternoon 77 °F				
Tower A - 399A	LGRC-399-IAS-01	315	3.61	360	250.9
Tower A - 503	LGRC-503-IAS-03	98	3.64	360	77.6
Tower A - 799A	LGRC-799A-IAS-02	31	3.63	360	24.6
Tower A - 901	LGRC-901-IAS-04	33	3.62	362	26.4
Tower A - 1404	LGRC-1404-IAS-05	111	3.63	362	87.5
Tower A - 1404	LGRC-1404-IAS-06	122	3.56	362	98.2
Ambient Air	LGRC-Ambient-07	< 3	3.64	361	< 3
May 26, 2020	Average Recorded Temperature: Morning - 75 °F and Afternoon 78 °F				
Tower A - 199Y	LGRC-199Y-IAS-001	121	2.48	360	139.1
Tower A - 299T	LGRC-299T-IAS-002	100	2.47	360	116.1
Tower A - 506	LGRC-506-IAS-003	105	2.58	360	117.5
Tower A - 1106	LGRC-1106-IAS-004	68	2.53	373	74.6
Tower A - 1106	LGRC-1106-IASD-004	63	2.46	370	71.2
Tower A - 1512	LGRC-1512-IAS-005	112	2.55	361	126.0
Ambient Air	LGRC-Ambient-006	< 6	2.55	362	< 7
June 25, 2021	Average Recorded Temperature: Morning - 66 °F and Afternoon 71 °F				
Tower A - 199Y	LGRC-199Y-IAS-002	5.4	2.52	360	5.8
Tower A - 299T	LGRC-299T-IAS-003	70	2.61	360	72.2
Tower A - 399A	LGRC-399A-IAS-004	87	2.53	360	92.3
Tower A - 901	LGRC-901-IAS-005	46	2.53	362	49.1
Tower A - 1307	LGRC-1307-IAS-006	41	2.51	362	44.0
Ambient Air	LGRC-Ambient-001	< 5	2.53	360	<5
February 28, 2022	Average Recorded Temperature: Morning - and Afternoon				
Tower A - 199Y	LGRC-IAS-199Y-001	7.1	2.74	470	5.3
Tower A - 299T	LGRC-IAS-299T-002	29.4	2.63	465	23.7
Tower A - 399A	LGRC-IAS-399A-003	52	2.63	470	41.7
June 21, 2023	Average Recorded Temperature: Morning - 66 °F and Afternoon 71 °F				
Tower A - 299T	LGRC-207L-IAS-23	64.0	2.55	360	70.0
Tower A - 404	LGRC-404-IAS-23	47	2.55	360	52.0
Tower A -899	LGRC-8EL-IAS-23	25	2.55	360	27.0
Tower A - 1009	LGRC-1009-IAS-23	47	2.55	360	52.0
Tower A - 1407	LGRC-1407-IAS-23	79	2.55	360	86.0
Ambient Air	LGRC-Ambient-IAS-23	0	2.55	360	0.0

Notes:
Project Specific Risk-based Action Level based on the EPA's exposure levels for evaluating PCBs in indoor school air for students ages 19 plus and adults (July 2015).
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.
ng/m^3 = nanograms per cubic meter

Table 3-1
Summary of Window Removal Status and Scheduled Renovations
UMass Amherst

Floor	Windows Summary		Comment
	Windows Removed	Windows Remaining with PCB - containing sealant	
Low Rise and Bridge Connector			
Low-Rise	All windows removed in 2014 or 2018	None	
Library	All windows removed in 2014	None	
Bridge Connector	All windows removed in 2014	None	
Tower A - Student or Faculty Rooms/Labs			
1	Not Applicable		Windows on 1st floor are storefront windows which do not have PCB-containing glazing sealants
2	Not Applicable		Spaces on 2nd floor do not have windows
3	Rooms 320C-L in 2012	None	
4	None	Rooms 402A, 403B-F, 404, 406, 407, 408	No schedule developed to date; re-application of interim measures in Rooms 403F, 406, and 408 conducted in 2023
5	Rooms 501, 502, 503, 504 in 2015	Rooms 505B, 506, 507, 508, 509, 510,	No schedule developed to date
6	None	Rooms 601, 602A, 604, 605, 606, 608, 609, 610	No schedule developed to date
7	720A-K in 2012	None	
8	820B-K in 2012	None	
9	None	Rooms 901, 902, 903, 903A, 904, 906, 911	No schedule developed to date
10	None	Rooms 1002, 1003, 1003C, 1004, 1006A, 1008, 1009, 1010	No schedule developed to date
11	None	Rooms 1103B, 1104, 1105, 1106, 1108	No schedule developed to date
12	None	Rooms 1205, 1207, 1208, 1208A, 1209	No schedule developed to date
13	None	Rooms 1303, 1304, 1305, 1306, 1307, 1308, 1309, 1310, 1311, 1312A	Vacant, No schedule developed to date
14	None	Rooms 1403, 1404, 1405, 1407, 1409, 1410, 1411, 1412	Vacant, No schedule developed to date
15	Rooms 1506, 1507, 1508, 1509, 1510, 1512	None	Replaceement completed in 2022/2023
16	Rooms 1606, 1607, 1608, 1609, 1610, 1611	None	Replaceement completed in 2022/2023

Table 3-1
Summary of Window Removal Status and Scheduled Renovations
UMass Amherst

Floor	Windows Summary		Comment
	Windows Removed	Windows Remaining with PCB - containing sealant	
Tower A - Transitory Spaces or non-occupied rooms			
All floors - Elevator Lobbies	None	All floors	Large continuous cross floor windows; No schedule developed to date; reapplication of interim measures to windows on the 6th and 10th floors comducted in 2023
Stairwell window - Floors 3-16	None	All floors	Large continuous cross floor windows; No schedule developed to date
Restrooms (Floors 2, 3, 4, and 5)	None	Floors 2,3,4, and 5	No schedule developed to date
Janitorial closet, mechanical /utility room (Floors 6, 8, 9, 10, 11, 12, 13, 14, 15, and 16)	None	Floors 6,8,9,10,11,12,13,14,15, and 16	No schedule developed to date

FIGURES

Figure 1-1: Site Location Map

Figure 2-1: Areas of Encapsulated Materials – Tower A 1st – 4th Floors

Figure 2-2: Areas of Encapsulated Materials – Tower A 5th – 8th Floors

Figure 2-3: Areas of Encapsulated Materials – Tower A 9th – 12th Floors

Figure 2-4: Areas of Encapsulated Materials – Tower A 13th – 16th Floors

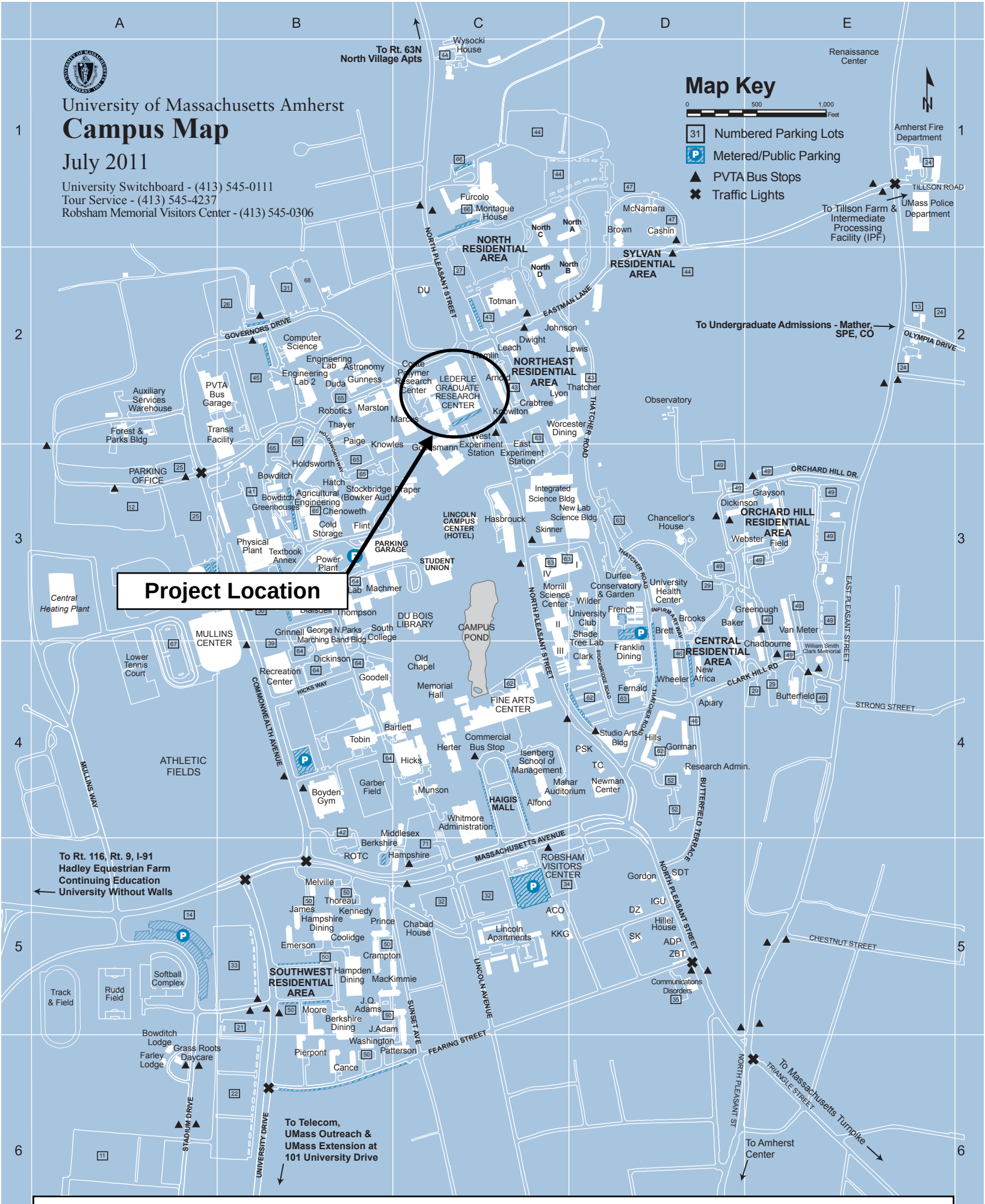
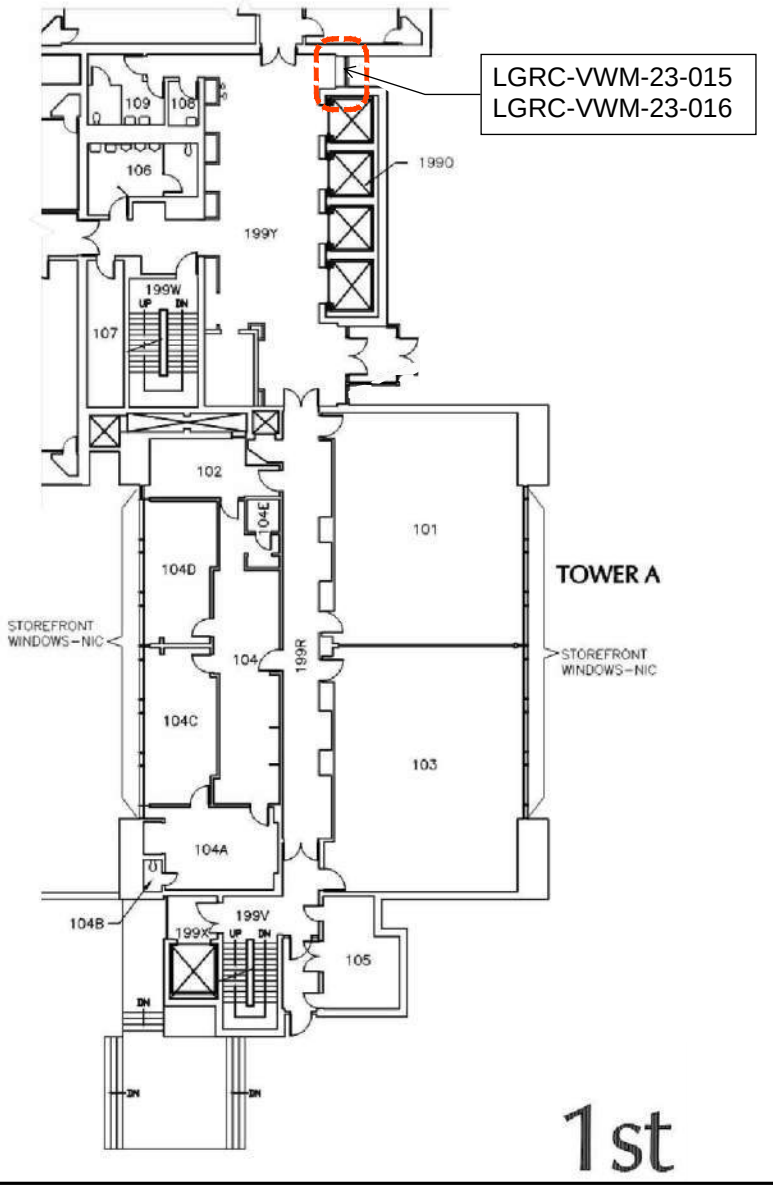
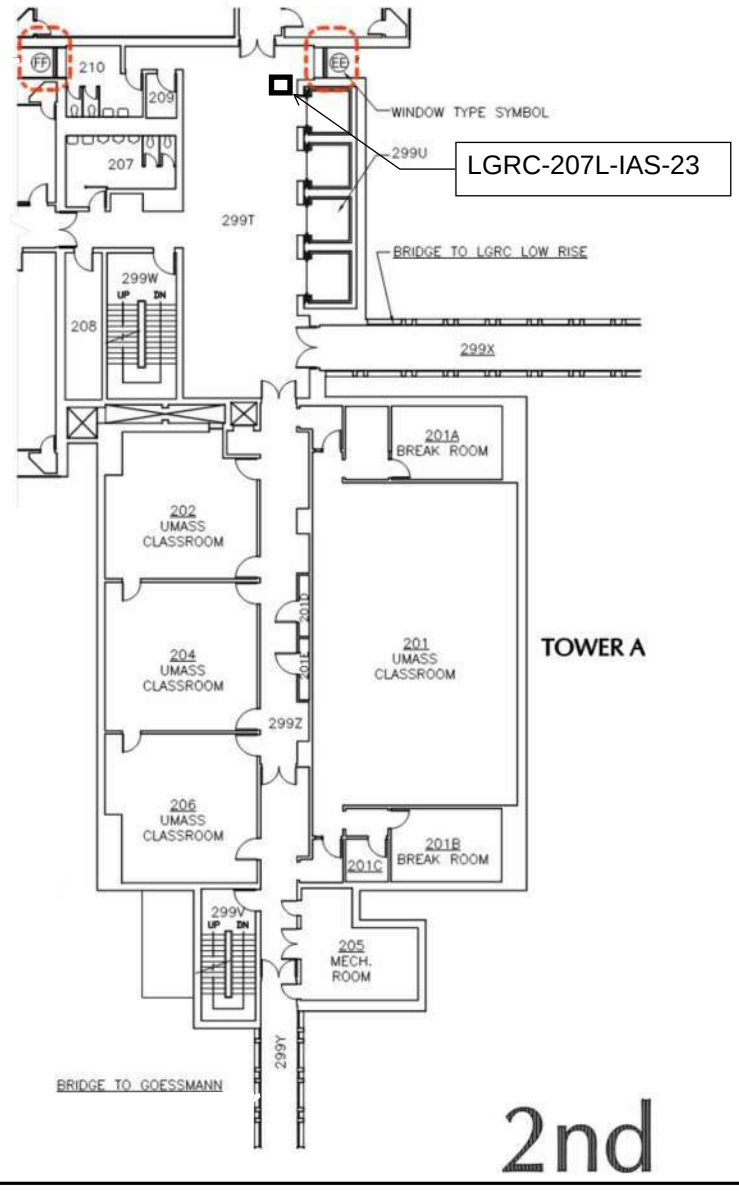


Figure 1-1 Site Location Map



1st



2nd

LEGEND

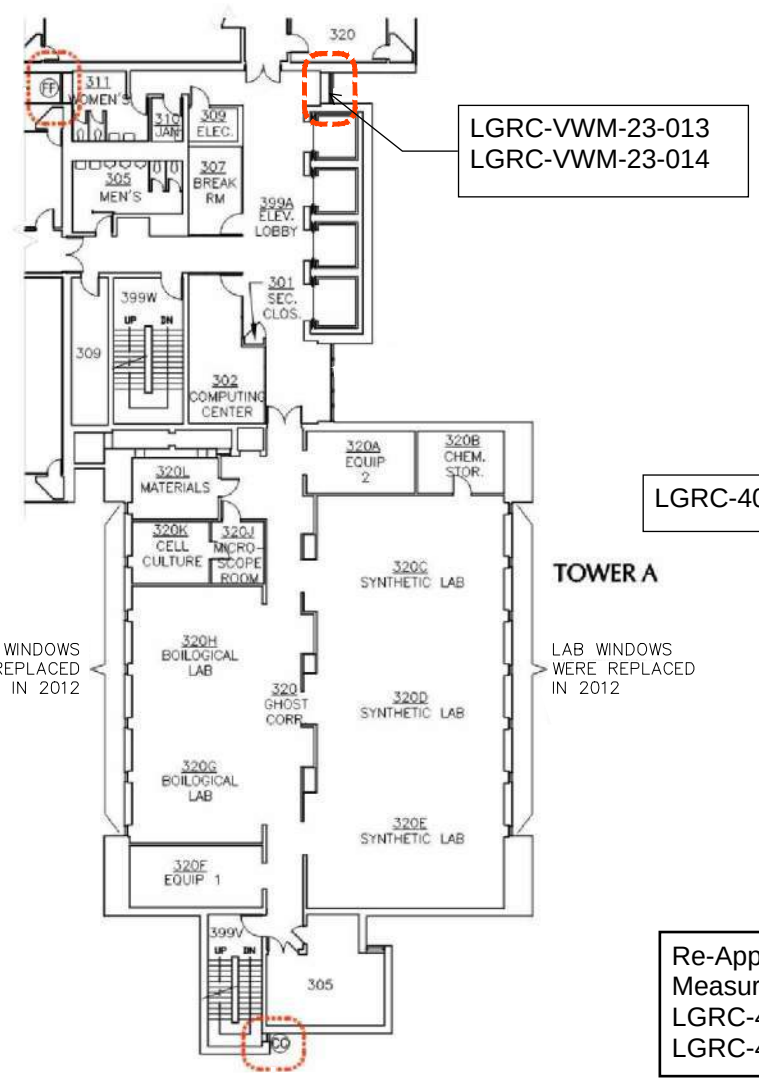
LOCATION OF WINDOWS/GLAZING SEALANTS INCLUDED IN THE INTERIM MEASURES AND SUBJECT TO LONG TERM MONITORING AND MAINTENANCE

LGRC-207L-IAS-23 → INDOOR AIR SAMPLE LOCATION AND IDENTIFIER

LGRC-VWM-23-015
LGRC-VWM-23-016 → WIPE SAMPLE LOCATION AND IDENTIFIER

NOTE:

1. ORIGINAL DESIGN DRAWINGS BY GOLDMAN REINDORF ARCHITECTS INC.



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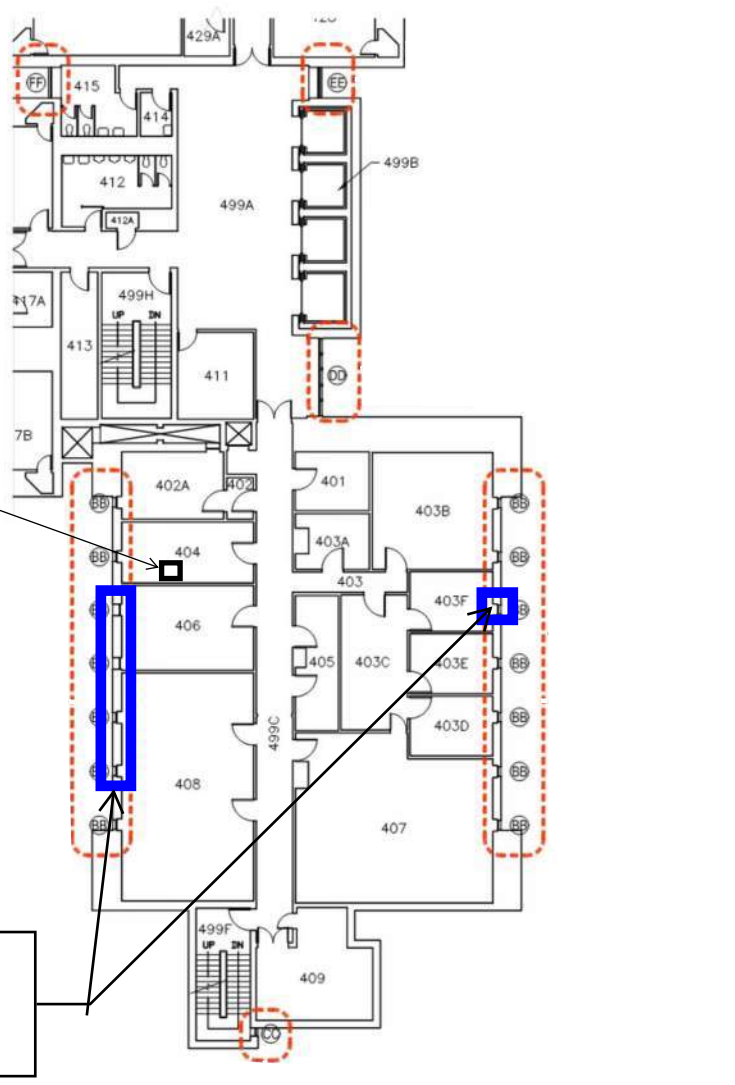

4th

FIGURE 2-1

SCALE:NOT TO SCALE

DATESEPTEMBER 2023

JOB NO: 225695.08

UMASS AMHERST
LEDERLE GRADUATE RESEARCH CENTER

MMIP

AREAS OF ENCAPSULATED MATERIALS
TOWER A 1st–4th FLOORS

DESIGNED BY: GF	CHECKED BY: JAH
DRAWN BY: PF	MMIP–FIGURE 2–1.DWG

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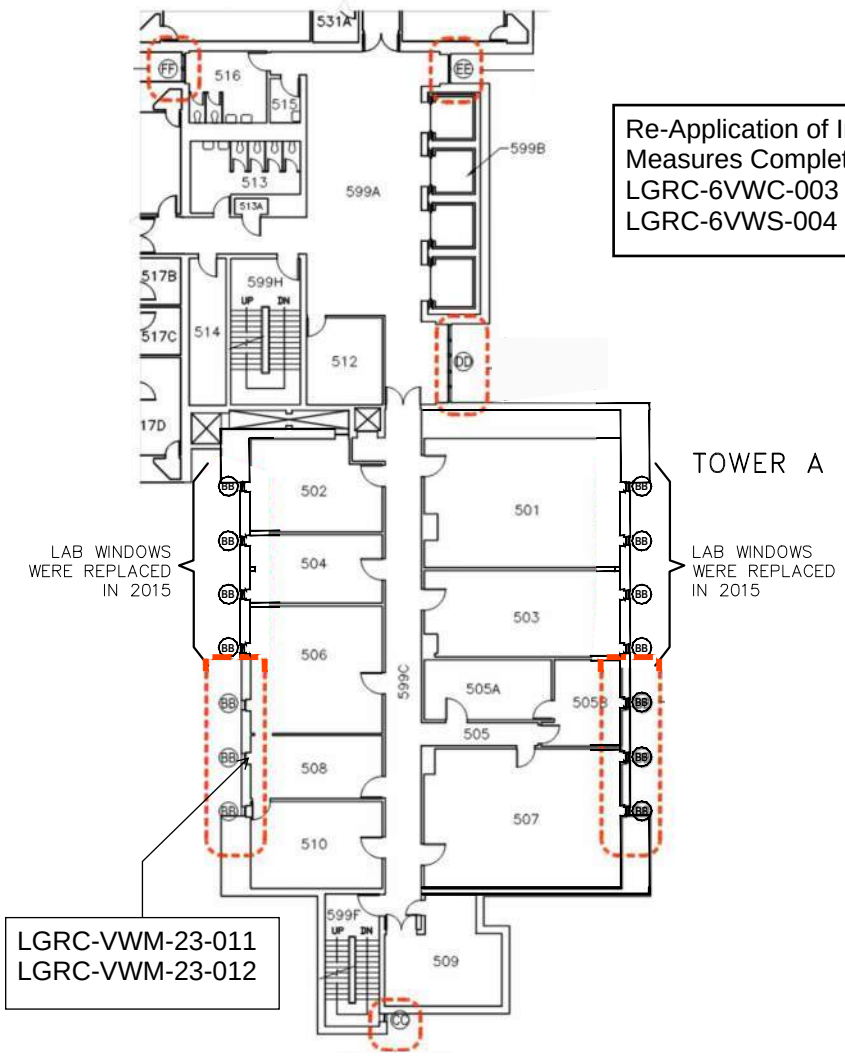
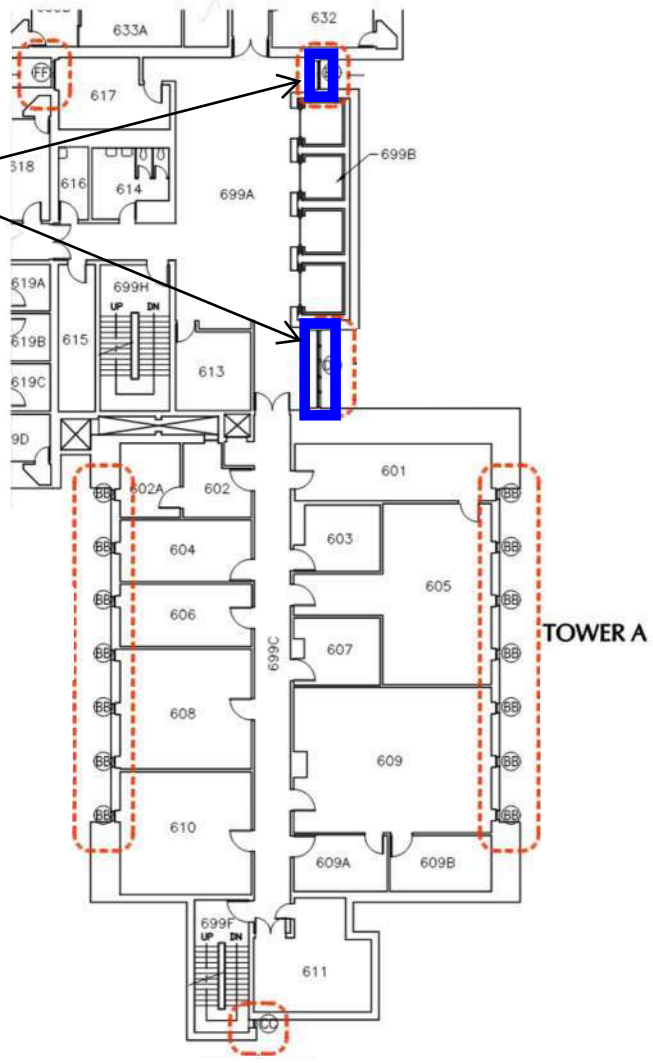


5th

Re-Application of Interim Measures Completed
LGRC-6VWC-003
LGRC-6VWS-004



6th

LEGEND

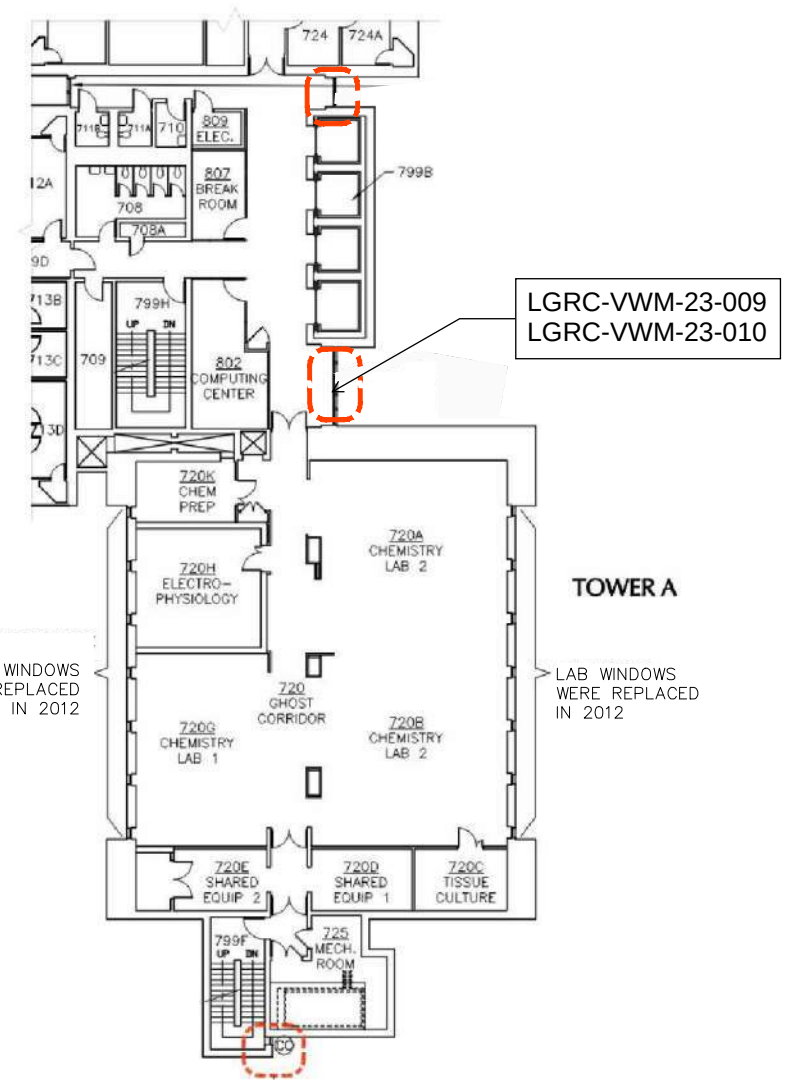
LOCATION OF WINDOWS/GLAZING SEALANTS INCLUDED IN THE INTERIM MEASURES AND SUBJECT TO LONG TERM MONITORING AND MAINTENANCE

LGRC-207L-IAS-23 → INDOOR AIR SAMPLE LOCATION AND IDENTIFIER

LGRC-VWM-23-015
LGRC-VWM-23-016 → WIPE SAMPLE LOCATION AND IDENTIFIER

NOTE:

1. ORIGINAL DESIGN DRAWINGS BY GOLDMAN REINDORF ARCHITECTS INC.



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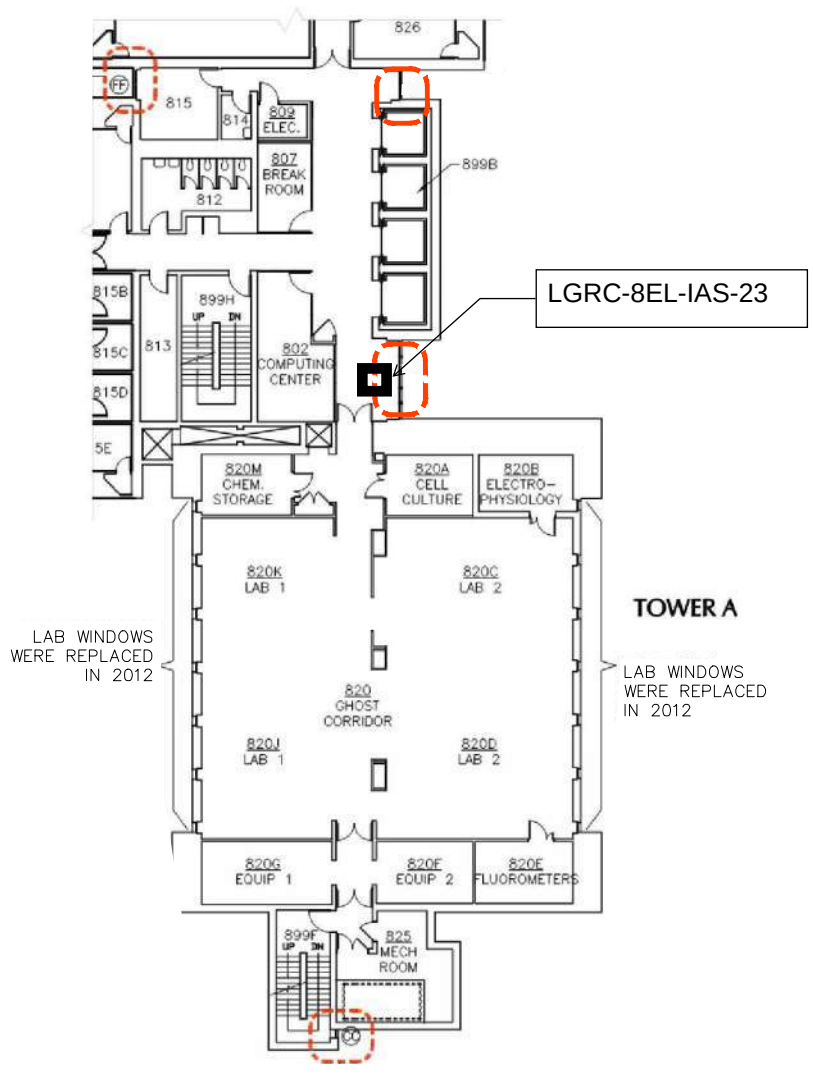

8th

FIGURE 2-2

JOB NO: 225695.08
DATE SEPTEMBER 2023
SCALE: NOT TO SCALE

UMASS AMHERST
LEDERLE GRADUATE RESEARCH CENTER

MMIP

AREAS OF ENCAPSULATED MATERIALS
TOWER A 5th–8th FLOORS

DESIGNED BY:	GF	CHECKED BY:	JAH
DRAWN BY:	PF	MMIP–FIGURE 2–2–B.DWG	

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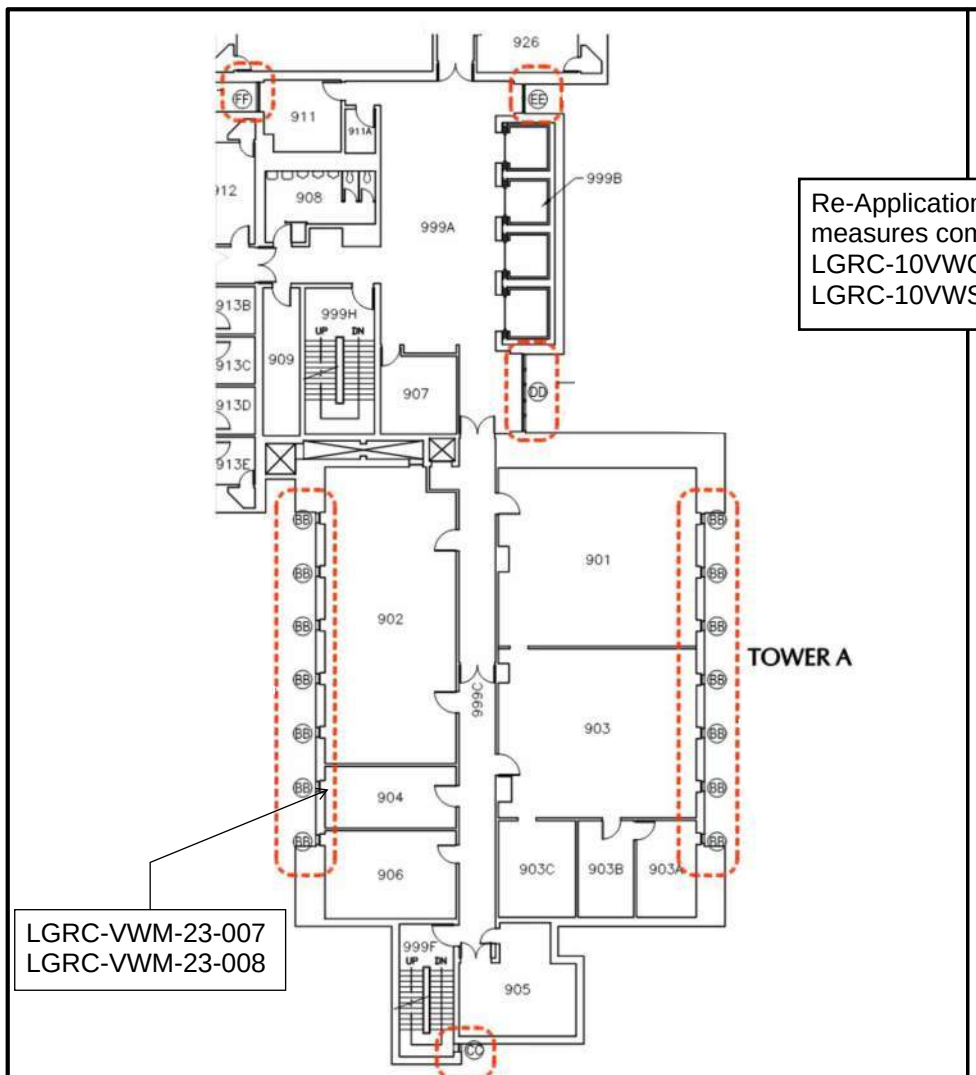
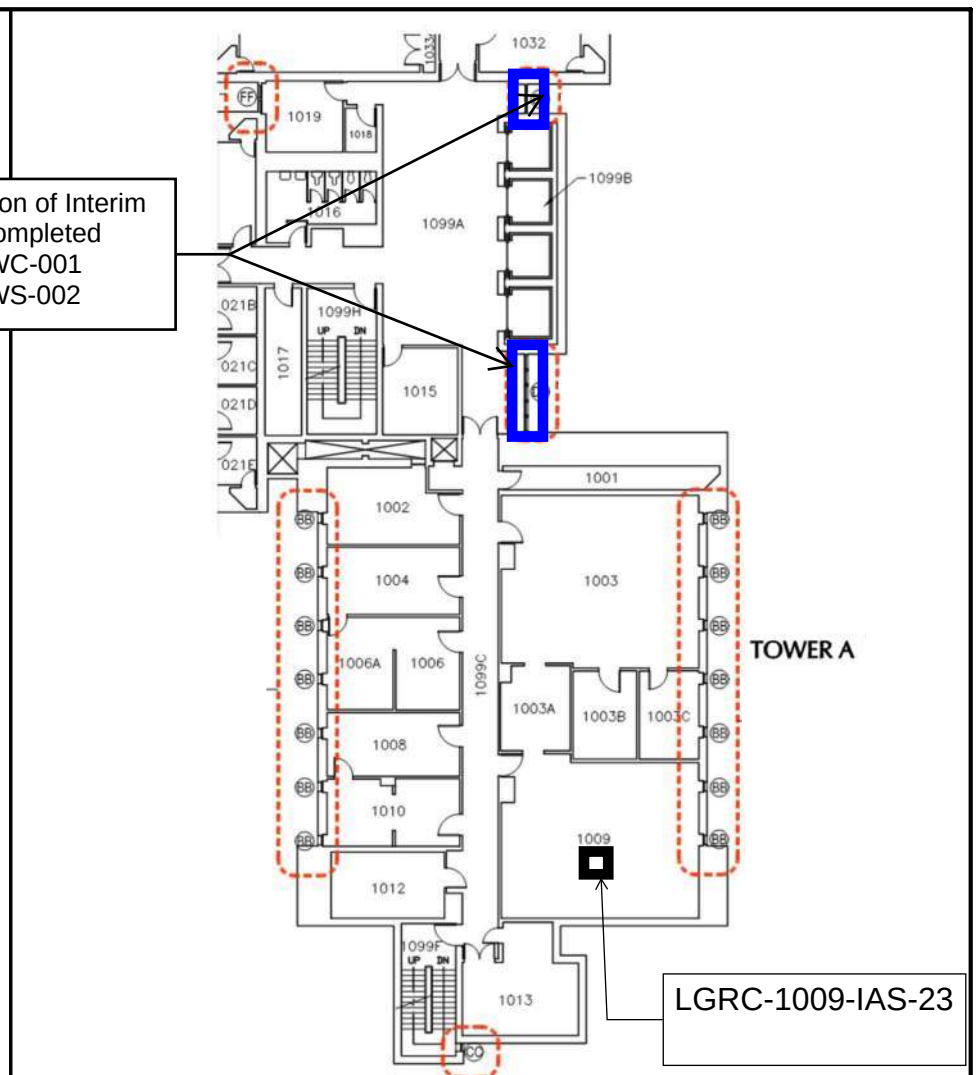


9th



10th

LEGEND

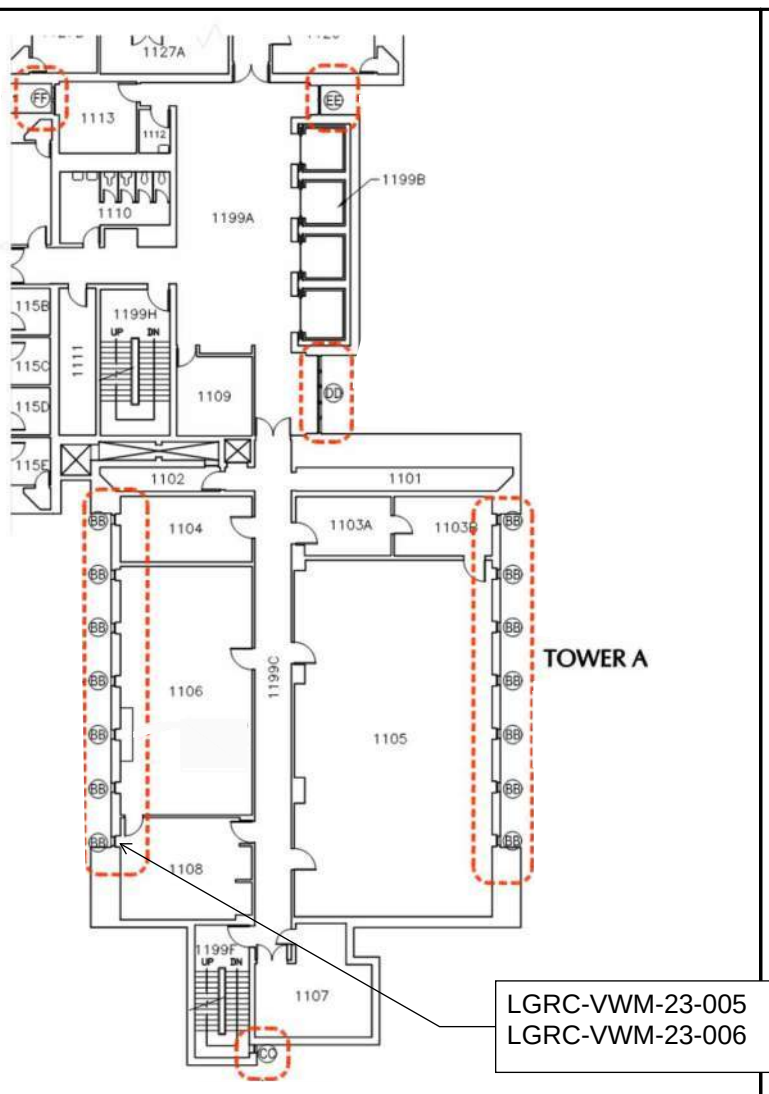
LOCATION OF WINDOWS/GLAZING SEALANTS INCLUDED IN THE INTERIM MEASURES AND SUBJECT TO LONG TERM MONITORING AND MAINTENANCE

LGRC-207L-IAS-23 → INDOOR AIR SAMPLE LOCATION AND IDENTIFIER

LGRC-VWM-23-015
LGRC-VWM-23-016 → WIPE SAMPLE LOCATION AND IDENTIFIER

NOTE:

1. ORIGINAL DESIGN DRAWINGS BY GOLDMAN REINDORF ARCHITECTS INC.



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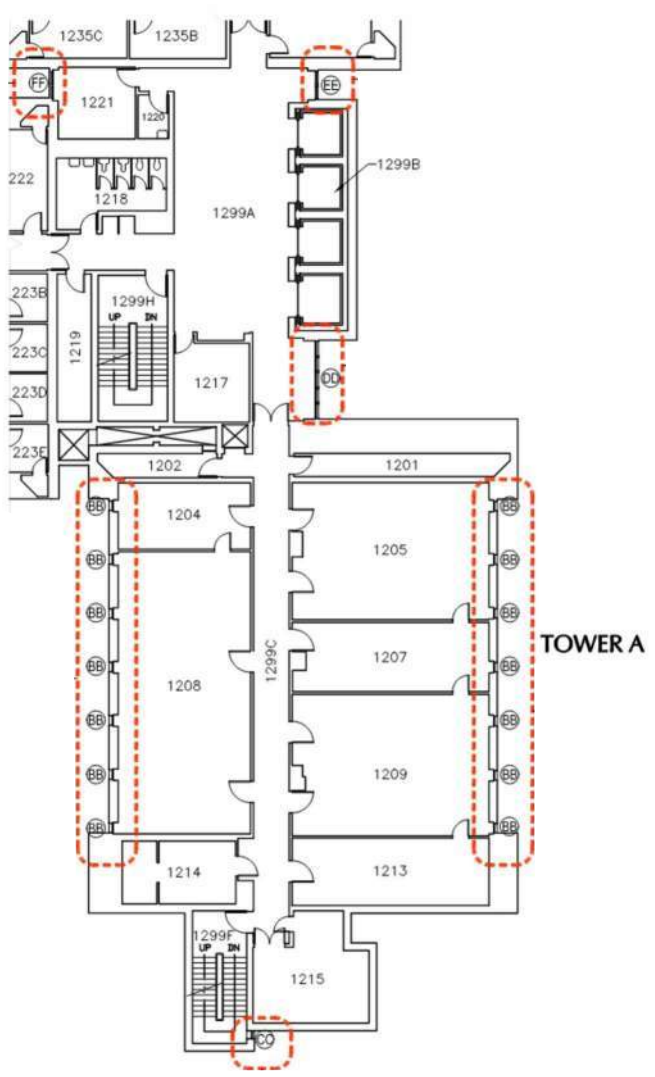

12th

FIGURE 2-3

JOB NO: 225695.08
DATE SEPTEMBER 2023
SCALE: NOT TO SCALE

UMASS AMHERST
LEDERLE GRADUATE RESEARCH CENTER

MMIP

AREAS OF ENCAPSULATED MATERIALS
TOWER A 9th–12th FLOORS

DESIGNED BY:	GF	CHECKED BY:	JAH
DRAWN BY:	PF	MMIP–FIGURE 2–3.DWG	

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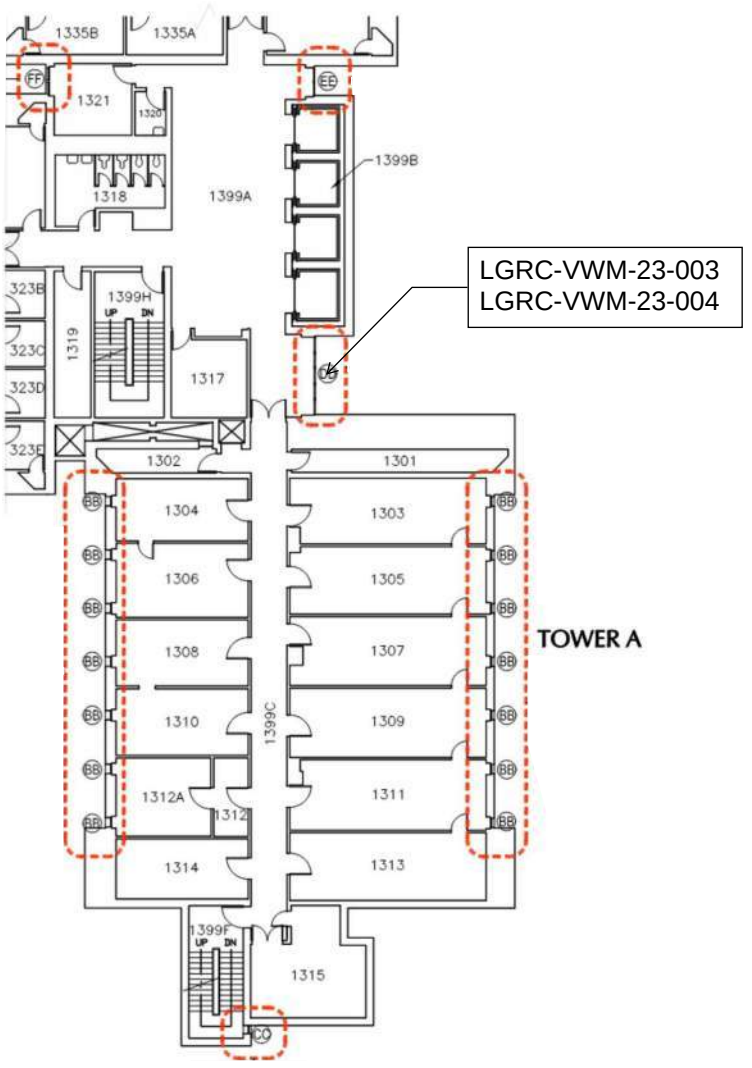
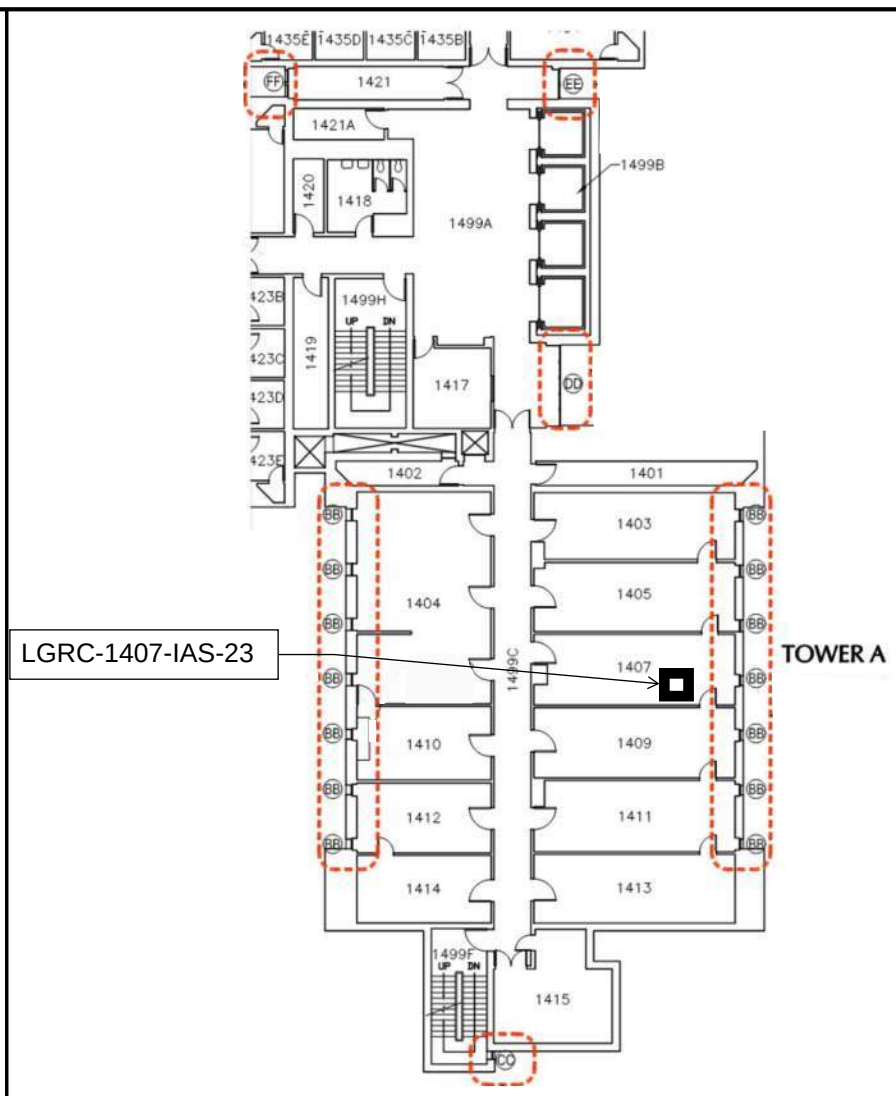


13th



14th

LEGEND

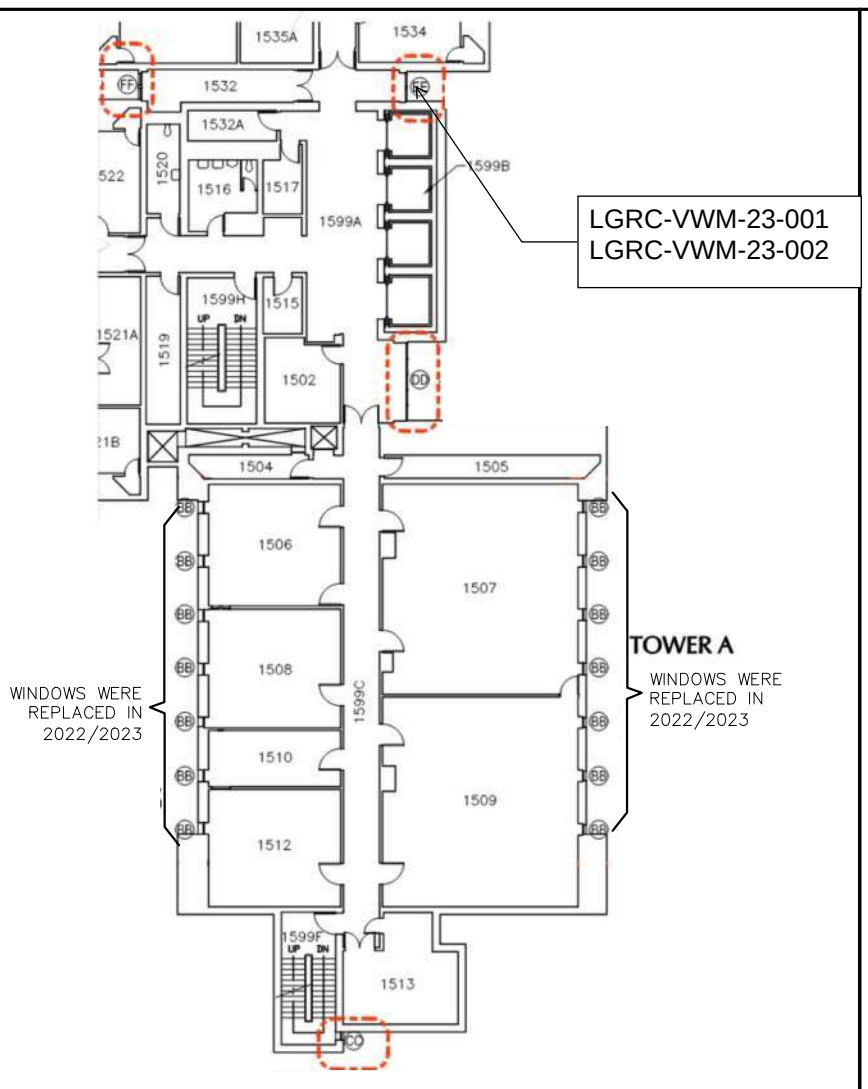
LOCATION OF WINDOWS/GLAZING SEALANTS INCLUDED IN THE INTERIM MEASURES AND SUBJECT TO LONG TERM MONITORING AND MAINTENANCE

LGRC-207L-IAS-23 → INDOOR AIR SAMPLE LOCATION AND IDENTIFIER

LGRC-VWM-23-015
LGRC-VWM-23-016 → WIPE SAMPLE LOCATION AND IDENTIFIER

NOTE:

ORIGINAL DESIGN DRAWINGS BY GOLDMAN REINDORF ARCHITECTS INC.



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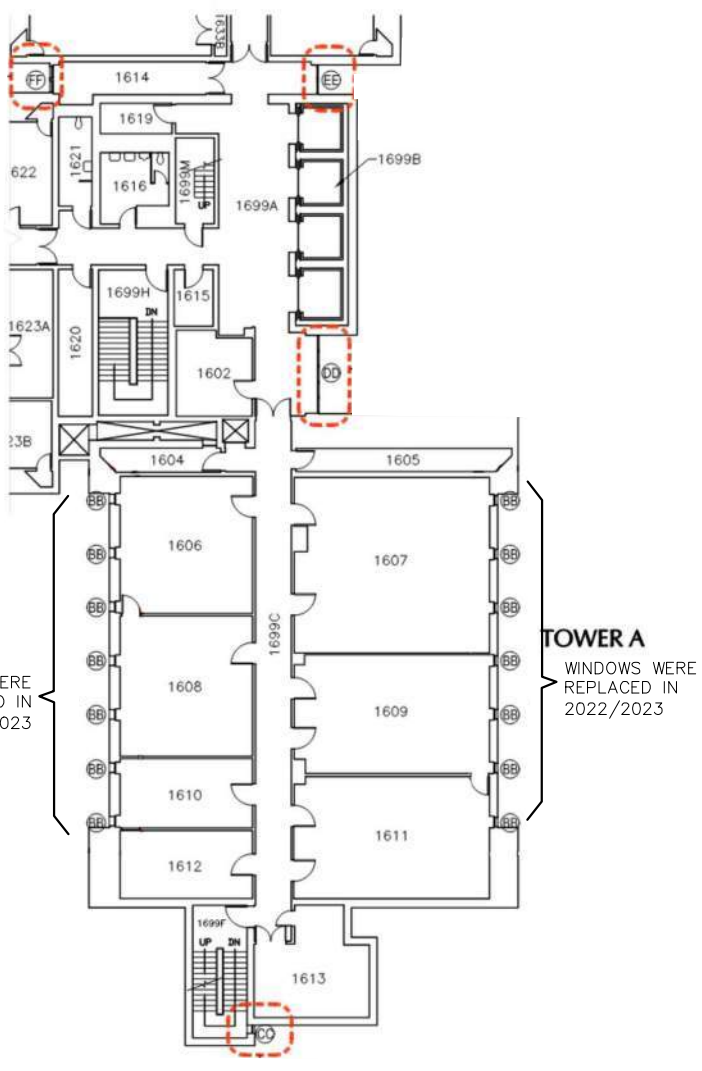

16th

FIGURE 2-4

JOB NO: 235695.08
DATE SEPTEMBER 2023
SCALE: NOT TO SCALE

UMASS AMHERST
LEDERLE GRADUATE RESEARCH CENTER

MMIP

AREAS OF ENCAPSULATED MATERIALS
TOWER A 13th–16th FLOORS

DESIGNED BY: GF	CHECKED BY: JAH
DRAWN BY: PF	MMIP–FIGURE 2–4_2–5.DWG

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APPENDIX A: ANALYTICAL LABORATORY REPORTS

con-test®
A Pace Analytical® Laboratory

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

September 19, 2023

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

Project Location: UMass LGRC
Client Job Number:
Project Number: 225695.08
Laboratory Work Order Number: 23I0910

Enclosed are results of analyses for samples as received by the laboratory on September 8, 2023. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Meghan E. Kelley
Project Manager

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

REPORT DATE: 9/19/2023

PURCHASE ORDER NUMBER:

PROJECT NUMBER: 225695.08

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 23I0910

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

PROJECT LOCATION: UMass LGRC

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
LGRC-10-VWS-002	23I0910-01	Wipe		SW-846 8082A	
LGRC-10VWC-001	23I0910-02	Wipe		SW-846 8082A	
LGRC-6VWS-004	23I0910-03	Wipe		SW-846 8082A	
LGRC-6VWC-003	23I0910-04	Wipe		SW-846 8082A	
LGRC-4VWC-005	23I0910-05	Wipe		SW-846 8082A	
LGRC-4VWS-006	23I0910-06	Wipe		SW-846 8082A	
LGRC-4VWC-007	23I0910-07	Wipe		SW-846 8082A	
LGRC-4VWS-008	23I0910-08	Wipe		SW-846 8082A	

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.

The results of analyses reported only relate to samples submitted to Con-Test, a Pace Analytical Laboratory, for testing.
I certify that the analyses listed above, unless specifically listed as subcontracted, if any, were performed under my direction according to the approved methodologies listed in this document, and that based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

Lisa A. Worthington
Technical Representative

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

Project Location: UMass LGRC | Sample Description: | Work Order: 23I0910

Date Received: 9/8/2023

Field Sample #: LGRC-10-VWS-002 | Sampled: 9/8/2023 07:30

Sample ID: 23I0910-01

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	9/14/23	9/18/23 23:51	SFM
Aroclor-1221 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	9/14/23	9/18/23 23:51	SFM
Aroclor-1232 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	9/14/23	9/18/23 23:51	SFM
Aroclor-1242 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	9/14/23	9/18/23 23:51	SFM
Aroclor-1248 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	9/14/23	9/18/23 23:51	SFM
Aroclor-1254 [1]	0.43	0.20	µg/Wipe	1		SW-846 8082A	9/14/23	9/18/23 23:51	SFM
Aroclor-1260 [2]	0.30	0.20	µg/Wipe	1		SW-846 8082A	9/14/23	9/18/23 23:51	SFM
Aroclor-1262 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	9/14/23	9/18/23 23:51	SFM
Aroclor-1268 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	9/14/23	9/18/23 23:51	SFM

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	98.2	30-150		9/18/23 23:51
Decachlorobiphenyl [2]	108	30-150		9/18/23 23:51
Tetrachloro-m-xylene [1]	90.7	30-150		9/18/23 23:51
Tetrachloro-m-xylene [2]	106	30-150		9/18/23 23:51

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Project Location: UMass LGRC | Sample Description: | Work Order: 23I0910

Date Received: 9/8/2023

Field Sample #: LGRC-10VWC-001 | Sampled: 9/8/2023 07:32

Sample ID: 23I0910-02

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	9/14/23	9/19/23 1:10	SFM
Aroclor-1221 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	9/14/23	9/19/23 1:10	SFM
Aroclor-1232 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	9/14/23	9/19/23 1:10	SFM
Aroclor-1242 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	9/14/23	9/19/23 1:10	SFM
Aroclor-1248 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	9/14/23	9/19/23 1:10	SFM
Aroclor-1254 [2]	0.62	0.20	µg/Wipe	1		SW-846 8082A	9/14/23	9/19/23 1:10	SFM
Aroclor-1260 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	9/14/23	9/19/23 1:10	SFM
Aroclor-1262 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	9/14/23	9/19/23 1:10	SFM
Aroclor-1268 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	9/14/23	9/19/23 1:10	SFM

Surrogates	% Recovery	Recovery Limits	Flag/Qual		
Decachlorobiphenyl [1]	100	30-150		9/19/23	1:10
Decachlorobiphenyl [2]	110	30-150		9/19/23	1:10
Tetrachloro-m-xylene [1]	94.5	30-150		9/19/23	1:10
Tetrachloro-m-xylene [2]	111	30-150		9/19/23	1:10

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Project Location: UMass LGRC | Sample Description: | Work Order: 23I0910

Date Received: 9/8/2023

Field Sample #: LGRC-6VWS-004 | Sampled: 9/8/2023 07:35

Sample ID: 23I0910-03

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	9/14/23	9/19/23 1:27	SFM
Aroclor-1221 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	9/14/23	9/19/23 1:27	SFM
Aroclor-1232 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	9/14/23	9/19/23 1:27	SFM
Aroclor-1242 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	9/14/23	9/19/23 1:27	SFM
Aroclor-1248 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	9/14/23	9/19/23 1:27	SFM
Aroclor-1254 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	9/14/23	9/19/23 1:27	SFM
Aroclor-1260 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	9/14/23	9/19/23 1:27	SFM
Aroclor-1262 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	9/14/23	9/19/23 1:27	SFM
Aroclor-1268 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	9/14/23	9/19/23 1:27	SFM

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	99.1	30-150		9/19/23 1:27
Decachlorobiphenyl [2]	109	30-150		9/19/23 1:27
Tetrachloro-m-xylene [1]	91.9	30-150		9/19/23 1:27
Tetrachloro-m-xylene [2]	108	30-150		9/19/23 1:27

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Project Location: UMass LGRC | Sample Description: | Work Order: 23I0910

Date Received: 9/8/2023

Field Sample #: LGRC-6VWC-003 | Sampled: 9/8/2023 07:38

Sample ID: 23I0910-04

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	9/14/23	9/19/23 1:44	SFM
Aroclor-1221 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	9/14/23	9/19/23 1:44	SFM
Aroclor-1232 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	9/14/23	9/19/23 1:44	SFM
Aroclor-1242 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	9/14/23	9/19/23 1:44	SFM
Aroclor-1248 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	9/14/23	9/19/23 1:44	SFM
Aroclor-1254 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	9/14/23	9/19/23 1:44	SFM
Aroclor-1260 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	9/14/23	9/19/23 1:44	SFM
Aroclor-1262 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	9/14/23	9/19/23 1:44	SFM
Aroclor-1268 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	9/14/23	9/19/23 1:44	SFM

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	96.9	30-150		9/19/23 1:44
Decachlorobiphenyl [2]	106	30-150		9/19/23 1:44
Tetrachloro-m-xylene [1]	94.3	30-150		9/19/23 1:44
Tetrachloro-m-xylene [2]	111	30-150		9/19/23 1:44

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Project Location: UMass LGRC | Sample Description: | Work Order: 23I0910

Date Received: 9/8/2023

Field Sample #: LGRC-4VWC-005 | Sampled: 9/8/2023 08:00

Sample ID: 23I0910-05

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	9/14/23	9/19/23 2:01	SFM
Aroclor-1221 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	9/14/23	9/19/23 2:01	SFM
Aroclor-1232 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	9/14/23	9/19/23 2:01	SFM
Aroclor-1242 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	9/14/23	9/19/23 2:01	SFM
Aroclor-1248 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	9/14/23	9/19/23 2:01	SFM
Aroclor-1254 [1]	0.32	0.20	µg/Wipe	1		SW-846 8082A	9/14/23	9/19/23 2:01	SFM
Aroclor-1260 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	9/14/23	9/19/23 2:01	SFM
Aroclor-1262 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	9/14/23	9/19/23 2:01	SFM
Aroclor-1268 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	9/14/23	9/19/23 2:01	SFM

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	99.2	30-150		9/19/23 2:01
Decachlorobiphenyl [2]	109	30-150		9/19/23 2:01
Tetrachloro-m-xylene [1]	98.3	30-150		9/19/23 2:01
Tetrachloro-m-xylene [2]	116	30-150		9/19/23 2:01

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Project Location: UMass LGRC | Sample Description: | Work Order: 23I0910

Date Received: 9/8/2023

Field Sample #: LGRC-4VWS-006 | Sampled: 9/8/2023 08:03

Sample ID: 23I0910-06

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	9/14/23	9/19/23 2:18	SFM
Aroclor-1221 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	9/14/23	9/19/23 2:18	SFM
Aroclor-1232 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	9/14/23	9/19/23 2:18	SFM
Aroclor-1242 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	9/14/23	9/19/23 2:18	SFM
Aroclor-1248 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	9/14/23	9/19/23 2:18	SFM
Aroclor-1254 [1]	0.21	0.20	µg/Wipe	1		SW-846 8082A	9/14/23	9/19/23 2:18	SFM
Aroclor-1260 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	9/14/23	9/19/23 2:18	SFM
Aroclor-1262 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	9/14/23	9/19/23 2:18	SFM
Aroclor-1268 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	9/14/23	9/19/23 2:18	SFM

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	101	30-150		9/19/23 2:18
Decachlorobiphenyl [2]	111	30-150		9/19/23 2:18
Tetrachloro-m-xylene [1]	95.2	30-150		9/19/23 2:18
Tetrachloro-m-xylene [2]	112	30-150		9/19/23 2:18

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Project Location: UMass LGRC | Sample Description: | Work Order: 23I0910

Date Received: 9/8/2023

Field Sample #: LGRC-4VWC-007 | Sampled: 9/8/2023 08:15

Sample ID: 23I0910-07

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	9/14/23	9/19/23 2:35	SFM
Aroclor-1221 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	9/14/23	9/19/23 2:35	SFM
Aroclor-1232 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	9/14/23	9/19/23 2:35	SFM
Aroclor-1242 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	9/14/23	9/19/23 2:35	SFM
Aroclor-1248 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	9/14/23	9/19/23 2:35	SFM
Aroclor-1254 [2]	1.0	0.20	µg/Wipe	1		SW-846 8082A	9/14/23	9/19/23 2:35	SFM
Aroclor-1260 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	9/14/23	9/19/23 2:35	SFM
Aroclor-1262 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	9/14/23	9/19/23 2:35	SFM
Aroclor-1268 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	9/14/23	9/19/23 2:35	SFM

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	110	30-150		9/19/23 2:35
Decachlorobiphenyl [2]	121	30-150		9/19/23 2:35
Tetrachloro-m-xylene [1]	111	30-150		9/19/23 2:35
Tetrachloro-m-xylene [2]	131	30-150		9/19/23 2:35

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Project Location: UMass LGRC | Sample Description: | Work Order: 23I0910

Date Received: 9/8/2023

Field Sample #: LGRC-4VWS-008 | Sampled: 9/8/2023 08:17

Sample ID: 23I0910-08

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	9/14/23	9/19/23 2:52	SFM
Aroclor-1221 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	9/14/23	9/19/23 2:52	SFM
Aroclor-1232 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	9/14/23	9/19/23 2:52	SFM
Aroclor-1242 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	9/14/23	9/19/23 2:52	SFM
Aroclor-1248 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	9/14/23	9/19/23 2:52	SFM
Aroclor-1254 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	9/14/23	9/19/23 2:52	SFM
Aroclor-1260 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	9/14/23	9/19/23 2:52	SFM
Aroclor-1262 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	9/14/23	9/19/23 2:52	SFM
Aroclor-1268 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	9/14/23	9/19/23 2:52	SFM

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	101	30-150		9/19/23 2:52
Decachlorobiphenyl [2]	114	30-150		9/19/23 2:52
Tetrachloro-m-xylene [1]	96.9	30-150		9/19/23 2:52
Tetrachloro-m-xylene [2]	114	30-150		9/19/23 2:52

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Sample Extraction Data

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

Lab Number [Field ID]	Batch	Initial [Wipe]	Final [mL]	Date
23I0910-01 [LGRC-10-VWS-002]	B351957	1.00	10.0	09/14/23
23I0910-02 [LGRC-10VWC-001]	B351957	1.00	10.0	09/14/23
23I0910-03 [LGRC-6VWS-004]	B351957	1.00	10.0	09/14/23
23I0910-04 [LGRC-6VWC-003]	B351957	1.00	10.0	09/14/23
23I0910-05 [LGRC-4VWC-005]	B351957	1.00	10.0	09/14/23
23I0910-06 [LGRC-4VWS-006]	B351957	1.00	10.0	09/14/23
23I0910-07 [LGRC-4VWC-007]	B351957	1.00	10.0	09/14/23
23I0910-08 [LGRC-4VWS-008]	B351957	1.00	10.0	09/14/23

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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 B351957 - SW-846 3540C										
Blank (B351957-BLK1)				Prepared: 09/14/23 Analyzed: 09/18/23						
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	*2.06*		µg/Wipe	2.00		103	30-150			
Surrogate: Decachlorobiphenyl [2C]	*2.26*		µg/Wipe	2.00		113	30-150			
Surrogate: Tetrachloro-m-xylene	*1.87*		µg/Wipe	2.00		93.6	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*2.18*		µg/Wipe	2.00		109	30-150			
LCS (B351957-BS1)				Prepared: 09/14/23 Analyzed: 09/18/23						
Aroclor-1016	0.47	0.20	µg/Wipe	0.500		93.3	40-140			
Aroclor-1016 [2C]	0.49	0.20	µg/Wipe	0.500		97.1	40-140			
Aroclor-1260	0.45	0.20	µg/Wipe	0.500		90.0	40-140			
Aroclor-1260 [2C]	0.47	0.20	µg/Wipe	0.500		94.5	40-140			
Surrogate: Decachlorobiphenyl	*2.00*		µg/Wipe	2.00		99.9	30-150			
Surrogate: Decachlorobiphenyl [2C]	*2.19*		µg/Wipe	2.00		110	30-150			
Surrogate: Tetrachloro-m-xylene	*1.82*		µg/Wipe	2.00		91.1	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*2.11*		µg/Wipe	2.00		105	30-150			
LCS Dup (B351957-BSD1)				Prepared: 09/14/23 Analyzed: 09/18/23						
Aroclor-1016	0.48	0.20	µg/Wipe	0.500		96.4	40-140	3.25	30	
Aroclor-1016 [2C]	0.49	0.20	µg/Wipe	0.500		98.0	40-140	0.880	30	
Aroclor-1260	0.47	0.20	µg/Wipe	0.500		93.1	40-140	3.45	30	
Aroclor-1260 [2C]	0.47	0.20	µg/Wipe	0.500		93.0	40-140	1.63	30	
Surrogate: Decachlorobiphenyl	*2.06*		µg/Wipe	2.00		103	30-150			
Surrogate: Decachlorobiphenyl [2C]	*2.24*		µg/Wipe	2.00		112	30-150			
Surrogate: Tetrachloro-m-xylene	*1.92*		µg/Wipe	2.00		95.8	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*2.22*		µg/Wipe	2.00		111	30-150			

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

LGRC-10-VWS-002

Lab Sample ID: 23I0910-01 Date(s) Analyzed: 09/18/2023 09/18/2023

Instrument ID (1): ECD 9 Instrument ID (2): ECD 9

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

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%RPD
			FROM	TO		
Aroclor-1254	1	0.000	0.000	0.000	0.43	
	2	0.000	0.000	0.000	0.34	23.4
Aroclor-1260	1	0.000	0.000	0.000	0.25	
	2	0.000	0.000	0.000	0.30	18.2

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

LGRC-10VWC-001

Lab Sample ID: 23I0910-02

Date(s) Analyzed: 09/19/2023 09/19/2023

Instrument ID (1): ECD 9

Instrument ID (2): ECD 9

GC Column (1): ID: (mm)

GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%RPD
			FROM	TO		
Aroclor-1254	1	0.000	0.000	0.000	0.59	
	2	0.000	0.000	0.000	0.62	5.0

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

LGRC-4VWC-005

Lab Sample ID: 23I0910-05 Date(s) Analyzed: 09/19/2023 09/19/2023

Instrument ID (1): ECD 9 Instrument ID (2): ECD 9

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

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

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

LGRC-4VWC-007

Lab Sample ID: 23I0910-07 Date(s) Analyzed: 09/19/2023 09/19/2023

Instrument ID (1): ECD 9 Instrument ID (2): ECD 9

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

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%RPD
			FROM	TO		
Aroclor-1254	1	0.000	0.000	0.000	1.0	
	2	0.000	0.000	0.000	1.0	0.0

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

LCS

Lab Sample ID: B351957-BS1 Date(s) Analyzed: 09/18/2023 09/18/2023

Instrument ID (1): ECD 9 Instrument ID (2): ECD 9

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

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%RPD
			FROM	TO		
Aroclor-1016	1	0.000	0.000	0.000	0.47	
	2	0.000	0.000	0.000	0.49	4.2
Aroclor-1260	1	0.000	0.000	0.000	0.45	
	2	0.000	0.000	0.000	0.47	4.4

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

LCS Dup

Lab Sample ID: B351957-BSD1 Date(s) Analyzed: 09/18/2023 09/18/2023

Instrument ID (1): ECD 9 Instrument ID (2): ECD 9

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

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%RPD
			FROM	TO		
Aroclor-1016	1	0.000	0.000	0.000	0.48	
	2	0.000	0.000	0.000	0.49	2.1
Aroclor-1260	1	0.000	0.000	0.000	0.47	
	2	0.000	0.000	0.000	0.47	0.0

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FLAG/QUALIFIER SUMMARY

*	QC result is outside of established limits.
†	Wide recovery limits established for difficult compound.
‡	Wide RPD limits established for difficult compound.
#	Data exceeded client recommended or regulatory level
ND	Not Detected
RL	Reporting Limit is at the level of quantitation (LOQ)
DL	Detection Limit is the lower limit of detection determined by the MDL study
MCL	Maximum Contaminant Level

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

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

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CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications

No certified Analyses included in this Report

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

Code	Description	Number	Expires

Pace Analytical®

CHAIN-OF-CUSTODY Analytical Request Document

Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace Terms and Conditions found at: https://info.pacelabs.com/hubfs/pas-standard-terms.pdf
Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevant fields

LAB USE ONLY- Affix Workorder/Login Label Here or List Pace Workorder Number or MTJL Log-in Number Here 23I0910 MEK

ALL BOLD OUTLINED AREAS are for LAB USE ONLY

Company: Woodard & Curran
Address: 40 Shattuck Road Andover, MA
Report To: George Franklin
Copy To:
Customer Project Name/Number: 22S69S.0B

Billing Information: George Franklin
Email To: George Franklin gfranklin@woodardcurran.com
Site Collection Info/Address: UMass LGRC
State: County/City: Time Zone Collected: [ ]PT [ ]MT [ ]CT [XET

Phone: 978 482 7867
Email:gfranklin@woodardcurran.com
Collected By (print): GF
Collected By (signature):
Sample Disposal: [x] Dispose as appropriate [ ] Return [ ] Archive: _____ [ ] Hold: _____

Site/Facility ID #: LGRC
Purchase Order # : std W&C rates
Quote #:
Turnaround Date Required: 9/15/23
Rush: (Expedite Charges Apply) [ ] Same Day [ ] Next Day [ ] 2 Day [ ] 3 Day [ ] 4 Day [x] 5 Day

Compliance Monitoring? [ ] Yes [X] No
DW PWS ID #:
DW Location Code:
Immediately Packed on Ice: [ ] Yes [ ] No
Field Filtered (if applicable): [ ] Yes [ ] No
Analysis: _____

Container Preservative Type **: 9

** Preservative Types: (1) nitric acid, (2) sulfuric acid, (3) hydrochloric acid, (4) sodium hydroxide, (5) zinc acetate, (6) methanol, (7) sodium bisulfate, (8) sodium thiosulfate, (9) hexane, (A) ascorbic acid, (B) ammonium sulfate, (C) ammonium hydroxide, (D) TSP, (U) Unpreserved, (O) Other _____hexnae_____

Lab Project Manager:

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (SL), Oil (OL), Wipe (WP), Air (AR), Tissue (TS), Bioassay (B), Vapor (V), Other (OT)

	Customer Sample ID	Matrix *	Comp / Grab	Collected (or Composite Start) Date	Collected (or Composite Start) Time	Composite End Date	Composite End Time	Res Cl	# of Ctns	Container Type: Plastic (P) or Glass (G)	Analyses: Total PCBs (8082/3540C)
1	LGRC-10-VWS-002	Wipe	G	9/8/2023	730					G	x
2	LGRC-10VWC-001	Wipe	G	9/8/2023	732					G	x
3	LGRC-6VWS-004	Wipe	G	9/8/2023	735					G	x
4	LGRC-6VWC-003	Wipe	G	9/8/2023	738					G	x
5	LGRC-4VWC-005	Wipe	G	9/8/2023	800					G	x
6	LGRC-4VWS-006	Wipe	G	9/8/2023	803					G	x
7	LGRC-4VWC-007	Wipe	G	9/8/2023	815					G	x
8	LGRC-4VWS-008	Wipe	G	9/8/2023	817					G	x

Lab Profile/Line:

Lab Sample Receipt Checklist:

Custody Seals Present/Intact	Y N NA
Custody Signatures Present	Y N NA
Collector Signature Present	Y N NA
Bottles Intact	Y N NA
Correct Bottles	Y N NA
Sufficient Volume	Y N NA
Samples Received on Ice	Y N NA
VOA - Headspace Acceptable	Y N NA
USDA Regulated Soils	Y N NA
Samples in Holding Time	Y N NA
Residual Chlorine Present	Y N NA
Cl Strips: _____	
Sample pH Acceptable	Y N NA
pH Strips: _____	
Sulfide Present	Y N NA
Lead Acetate Strips: _____	

LAB USE ONLY:
Lab Sample # / Comments:

Customer Remarks / Special Conditions / Possible Hazards:

1047 SHORT HOLDS PRESENT (<72 hours) : Y N N/A

Packing Material Used:
Lab Tracking #:
Radchem sample(s) screened (<500 cpm): Y N NA
Samples received via: FEDEX UPS Client Courier Pace Courier

LAB Sample Temperature Info:
Temp Blank Received: Y N NA
Therm ID#: _____
Cooler 1 Temp Upon Receipt: __oC
Cooler 1 Therm Corr. Factor: __oC
Cooler 1 Corrected Temp: _____oC
Comments:

Relinquished by/Company: (Signature)	Date/Time: 9/8/23 1215	Received by/Company: (Signature)	Date/Time: 9/8/23 1215
Relinquished by/Company: (Signature)	Date/Time: 9/8/23 1616	Received by/Company: (Signature)	Date/Time: 9/18/23 KK 23
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:

MTJL LAB USE ONLY
Table #:
Acctnum:
Template:
Prelogin:
PM:
PB:

Trip Blank Received: Y N NA
HCL MeOH TSP Other

Non Conformance(s): YES / NO
Page: 1 of: 1

Table of Contents

Pace ANALYTICAL SERVICES	DC#_Title: ENV-FRM-ELON-0001 v07_Sample Receiving Checklist
	Effective Date: 07/13/2023

Log In Back-Sheet

Client Woodard and Curran

Project 225695.08

MCP/RCP Required N/A

Deliverable Package Requirement N/A

Location UMass LGRC

PWSID# (When Applicable) N/A

Arrival Method:

Courier ☒ Fed Ex ☐ Walk In ☐ Other ☐

Received By / Date / Time STM 9/6/23 1616

Back-Sheet By / Date / Time STM 9/6/23 1653

Temperature Method GUN # 5

Temp X < 6° C Actual Temperature 2.3

Rush Samples: Yes / (No) Notify

Short Hold: Yes / (No) Notify

Notes regarding Samples/COC outside of SOP:

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

	True	False
Received on Ice	☒	☐
Received in Cooler	☒	☐
Custody Seal: DATE TIME	☐	☒
COC Relinquished	☒	☐
COC/Samples Labels Agree	☒	☐
All Samples in Good Condition	☒	☐
Samples Received within Holding Time	☒	☐
Is there enough Volume	☒	☐
Proper Media/Container Used	☒	☒ STM
Splitting Samples Required	☐	☒
MS/MSD	☐	☒
Trip Blanks	☐	☒
Lab to Filters	☐	☒
COC Legible	☒	☐

COC Included: (Check all included)

Client ☒ Analysis ☒ Sampler Name ☐

Project ☒ IDs ☒ Collection Date/Time ☒

All Samples Proper pH: (N/A) ☐ ☐

Additional Container Notes

Note: West Virginia requires all samples to have their temperature taken. Note any outliers.

Qualtrax ID: 120836

Pace ANALYTICAL SERVICES	DC#_Title: ENV-FRM-ELON-0001 v07_Sample Receiving Checklist
	Effective Date: 07/13/2023

Qualtrax ID: 120836

Sample	Soils Jars (Circle Amb/Clear)				Ambers						Plastics												VOA Vials					Other / Fill in					
	16oz Amb/Clear	8oz Amb/Clear	4oz Amb/Clear	2oz Amb/Clear	1 Liter			250mL			100mL	1 Liter		500mL		250mL																	
					Unpreserved	HCL	Sulfuric	Sulfuric	Phosphoric	HCl	Unpreserved	Unpreserved	Sulfuric	Unpreserved	Sulfuric	Unpreserved	Trizma	Sulfuric	Nitric	NaOH	Ammonium Acetate	NaOH/Zinc	Unpreserved	HCl	MeOH	D.I. Water	Bisulfate	Col/Bact					
1			—																													
2			—																													
3			—																													
4			—																													
5			—																													
6			—																													
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June 28, 2023

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

Project Location: Amherst, MA
Client Job Number:
Project Number: 0225695.05
Laboratory Work Order Number: 23F3073

Enclosed are results of analyses for samples as received by the laboratory on June 22, 2023. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Meghan E. Kelley
Project Manager

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B344301 23

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

REPORT DATE: 6/28/2023

PURCHASE ORDER NUMBER:

PROJECT NUMBER: 0225695.05

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 23F3073

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

PROJECT LOCATION: Amherst, MA

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
LGRC-VWM-23-001	23F3073-01	Wipe		SW-846 8082A	
LGRC-VWB-23-002	23F3073-02	Wipe		SW-846 8082A	
LGRC-VWM-23-003	23F3073-03	Wipe		SW-846 8082A	
LGRC-VWB-23-004	23F3073-04	Wipe		SW-846 8082A	
LGRC-VWM-23-005	23F3073-05	Wipe		SW-846 8082A	
LGRC-VWB-23-006	23F3073-06	Wipe		SW-846 8082A	
LGRC-VWM-23-007	23F3073-07	Wipe		SW-846 8082A	
LGRC-VWB-23-008	23F3073-08	Wipe		SW-846 8082A	
LGRC-VWM-23-009	23F3073-09	Wipe		SW-846 8082A	
LGRC-VWB-23-010	23F3073-10	Wipe		SW-846 8082A	
LGRC-VWM-23-011	23F3073-11	Wipe		SW-846 8082A	
LGRC-VWB-23-012	23F3073-12	Wipe		SW-846 8082A	
LGRC-VWM-23-013	23F3073-13	Wipe		SW-846 8082A	
LGRC-VWB-23-014	23F3073-14	Wipe		SW-846 8082A	
LGRC-VWM-23-015	23F3073-15	Wipe		SW-846 8082A	
LGRC-VWB-23-016	23F3073-16	Wipe		SW-846 8082A	

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CASE NARRATIVE SUMMARY

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

SW-846 8082A

Qualifications:

S-23

Surrogate recovery outside of control limits in BS/MS spiked sample, all reported analytes are within control criteria.

Analyte & Samples(s) Qualified:

Decachlorobiphenyl
B344301-BS1

Decachlorobiphenyl [2C]
B344301-BS1

The results of analyses reported only relate to samples submitted to Con-Test, a Pace Analytical Laboratory, for testing.
I certify that the analyses listed above, unless specifically listed as subcontracted, if any, were performed under my direction according to the approved methodologies listed in this document, and that based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

Lisa A. Worthington
Technical Representative

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

Project Location: Amherst, MA | Sample Description: | Work Order: 23F3073

Date Received: 6/22/2023

Field Sample #: LGRC-VWM-23-001 | Sampled: 6/21/2023 10:30

Sample ID: 23F3073-01

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	6/26/23	6/27/23 15:29	SFM
Aroclor-1221 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	6/26/23	6/27/23 15:29	SFM
Aroclor-1232 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	6/26/23	6/27/23 15:29	SFM
Aroclor-1242 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	6/26/23	6/27/23 15:29	SFM
Aroclor-1248 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	6/26/23	6/27/23 15:29	SFM
Aroclor-1254 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	6/26/23	6/27/23 15:29	SFM
Aroclor-1260 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	6/26/23	6/27/23 15:29	SFM
Aroclor-1262 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	6/26/23	6/27/23 15:29	SFM
Aroclor-1268 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	6/26/23	6/27/23 15:29	SFM

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	84.1	30-150		6/27/23 15:29
Decachlorobiphenyl [2]	83.8	30-150		6/27/23 15:29
Tetrachloro-m-xylene [1]	88.7	30-150		6/27/23 15:29
Tetrachloro-m-xylene [2]	78.9	30-150		6/27/23 15:29

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

Project Location: Amherst, MA | Sample Description: | Work Order: 23F3073

Date Received: 6/22/2023

Field Sample #: LGRC-VWB-23-002 | Sampled: 6/21/2023 10:35

Sample ID: 23F3073-02

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	6/26/23	6/27/23 15:47	SFM
Aroclor-1221 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	6/26/23	6/27/23 15:47	SFM
Aroclor-1232 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	6/26/23	6/27/23 15:47	SFM
Aroclor-1242 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	6/26/23	6/27/23 15:47	SFM
Aroclor-1248 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	6/26/23	6/27/23 15:47	SFM
Aroclor-1254 [1]	0.23	0.20	µg/Wipe	1		SW-846 8082A	6/26/23	6/27/23 15:47	SFM
Aroclor-1260 [2]	0.21	0.20	µg/Wipe	1		SW-846 8082A	6/26/23	6/27/23 15:47	SFM
Aroclor-1262 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	6/26/23	6/27/23 15:47	SFM
Aroclor-1268 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	6/26/23	6/27/23 15:47	SFM

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	89.8	30-150		6/27/23 15:47
Decachlorobiphenyl [2]	88.1	30-150		6/27/23 15:47
Tetrachloro-m-xylene [1]	93.6	30-150		6/27/23 15:47
Tetrachloro-m-xylene [2]	83.1	30-150		6/27/23 15:47

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

Project Location: Amherst, MA | Sample Description: | Work Order: 23F3073

Date Received: 6/22/2023

Field Sample #: LGRC-VWM-23-003 | Sampled: 6/21/2023 10:40

Sample ID: 23F3073-03

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	1.0	µg/Wipe	5		SW-846 8082A	6/26/23	6/28/23 7:25	SFM
Aroclor-1221 [1]	ND	1.0	µg/Wipe	5		SW-846 8082A	6/26/23	6/28/23 7:25	SFM
Aroclor-1232 [1]	ND	1.0	µg/Wipe	5		SW-846 8082A	6/26/23	6/28/23 7:25	SFM
Aroclor-1242 [1]	ND	1.0	µg/Wipe	5		SW-846 8082A	6/26/23	6/28/23 7:25	SFM
Aroclor-1248 [1]	ND	1.0	µg/Wipe	5		SW-846 8082A	6/26/23	6/28/23 7:25	SFM
Aroclor-1254 [1]	8.0	1.0	µg/Wipe	5		SW-846 8082A	6/26/23	6/28/23 7:25	SFM
Aroclor-1260 [1]	ND	1.0	µg/Wipe	5		SW-846 8082A	6/26/23	6/28/23 7:25	SFM
Aroclor-1262 [1]	ND	1.0	µg/Wipe	5		SW-846 8082A	6/26/23	6/28/23 7:25	SFM
Aroclor-1268 [1]	ND	1.0	µg/Wipe	5		SW-846 8082A	6/26/23	6/28/23 7:25	SFM

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	77.2	30-150		6/28/23 7:25
Decachlorobiphenyl [2]	65.8	30-150		6/28/23 7:25
Tetrachloro-m-xylene [1]	77.4	30-150		6/28/23 7:25
Tetrachloro-m-xylene [2]	67.0	30-150		6/28/23 7:25

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Project Location: Amherst, MA | Sample Description: | Work Order: 23F3073

Date Received: 6/22/2023

Field Sample #: LGRC-VWB-23-004 | Sampled: 6/21/2023 10:45

Sample ID: 23F3073-04

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	6/26/23	6/27/23 16:22	SFM
Aroclor-1221 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	6/26/23	6/27/23 16:22	SFM
Aroclor-1232 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	6/26/23	6/27/23 16:22	SFM
Aroclor-1242 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	6/26/23	6/27/23 16:22	SFM
Aroclor-1248 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	6/26/23	6/27/23 16:22	SFM
Aroclor-1254 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	6/26/23	6/27/23 16:22	SFM
Aroclor-1260 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	6/26/23	6/27/23 16:22	SFM
Aroclor-1262 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	6/26/23	6/27/23 16:22	SFM
Aroclor-1268 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	6/26/23	6/27/23 16:22	SFM

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	89.4	30-150		6/27/23 16:22
Decachlorobiphenyl [2]	87.5	30-150		6/27/23 16:22
Tetrachloro-m-xylene [1]	93.6	30-150		6/27/23 16:22
Tetrachloro-m-xylene [2]	84.8	30-150		6/27/23 16:22

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Project Location: Amherst, MA | Sample Description: | Work Order: 23F3073

Date Received: 6/22/2023

Field Sample #: LGRC-VWM-23-005 | Sampled: 6/21/2023 10:50

Sample ID: 23F3073-05

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	6/26/23	6/27/23 16:40	SFM
Aroclor-1221 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	6/26/23	6/27/23 16:40	SFM
Aroclor-1232 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	6/26/23	6/27/23 16:40	SFM
Aroclor-1248 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	6/26/23	6/27/23 16:40	SFM
Aroclor-1254 [1]	2.4	0.20	µg/Wipe	1		SW-846 8082A	6/26/23	6/27/23 16:40	SFM
Aroclor-1260 [2]	0.31	0.20	µg/Wipe	1		SW-846 8082A	6/26/23	6/27/23 16:40	SFM
Aroclor-1262 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	6/26/23	6/27/23 16:40	SFM
Aroclor-1268 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	6/26/23	6/27/23 16:40	SFM

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	93.1	30-150		6/27/23 16:40
Decachlorobiphenyl [2]	91.3	30-150		6/27/23 16:40
Tetrachloro-m-xylene [1]	92.5	30-150		6/27/23 16:40
Tetrachloro-m-xylene [2]	84.8	30-150		6/27/23 16:40

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Project Location: Amherst, MA | Sample Description: | Work Order: 23F3073

Date Received: 6/22/2023

Field Sample #: LGRC-VWB-23-006 | Sampled: 6/21/2023 10:55

Sample ID: 23F3073-06

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	6/26/23	6/27/23 16:57	SFM
Aroclor-1221 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	6/26/23	6/27/23 16:57	SFM
Aroclor-1232 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	6/26/23	6/27/23 16:57	SFM
Aroclor-1242 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	6/26/23	6/27/23 16:57	SFM
Aroclor-1248 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	6/26/23	6/27/23 16:57	SFM
Aroclor-1254 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	6/26/23	6/27/23 16:57	SFM
Aroclor-1260 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	6/26/23	6/27/23 16:57	SFM
Aroclor-1262 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	6/26/23	6/27/23 16:57	SFM
Aroclor-1268 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	6/26/23	6/27/23 16:57	SFM

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	93.4	30-150		6/27/23 16:57
Decachlorobiphenyl [2]	93.8	30-150		6/27/23 16:57
Tetrachloro-m-xylene [1]	92.2	30-150		6/27/23 16:57
Tetrachloro-m-xylene [2]	84.7	30-150		6/27/23 16:57

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Project Location: Amherst, MA | Sample Description: | Work Order: 23F3073

Date Received: 6/22/2023

Field Sample #: LGRC-VWM-23-007 | Sampled: 6/21/2023 11:00

Sample ID: 23F3073-07

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	6/26/23	6/27/23 17:15	SFM
Aroclor-1221 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	6/26/23	6/27/23 17:15	SFM
Aroclor-1232 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	6/26/23	6/27/23 17:15	SFM
Aroclor-1242 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	6/26/23	6/27/23 17:15	SFM
Aroclor-1248 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	6/26/23	6/27/23 17:15	SFM
Aroclor-1254 [1]	0.60	0.20	µg/Wipe	1		SW-846 8082A	6/26/23	6/27/23 17:15	SFM
Aroclor-1260 [2]	ND	0.20	µg/Wipe	1		SW-846 8082A	6/26/23	6/27/23 17:15	SFM
Aroclor-1262 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	6/26/23	6/27/23 17:15	SFM
Aroclor-1268 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	6/26/23	6/27/23 17:15	SFM

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	91.4	30-150		6/27/23 17:15
Decachlorobiphenyl [2]	90.6	30-150		6/27/23 17:15
Tetrachloro-m-xylene [1]	88.5	30-150		6/27/23 17:15
Tetrachloro-m-xylene [2]	80.0	30-150		6/27/23 17:15

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Project Location: Amherst, MA | Sample Description: | Work Order: 23F3073

Date Received: 6/22/2023

Field Sample #: LGRC-VWB-23-008 | Sampled: 6/21/2023 11:05

Sample ID: 23F3073-08

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	6/26/23	6/27/23 18:38	SFM
Aroclor-1221 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	6/26/23	6/27/23 18:38	SFM
Aroclor-1232 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	6/26/23	6/27/23 18:38	SFM
Aroclor-1242 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	6/26/23	6/27/23 18:38	SFM
Aroclor-1248 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	6/26/23	6/27/23 18:38	SFM
Aroclor-1254 [1]	0.22	0.20	µg/Wipe	1		SW-846 8082A	6/26/23	6/27/23 18:38	SFM
Aroclor-1260 [1]	0.27	0.20	µg/Wipe	1		SW-846 8082A	6/26/23	6/27/23 18:38	SFM
Aroclor-1262 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	6/26/23	6/27/23 18:38	SFM
Aroclor-1268 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	6/26/23	6/27/23 18:38	SFM

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	94.0	30-150		6/27/23 18:38
Decachlorobiphenyl [2]	93.1	30-150		6/27/23 18:38
Tetrachloro-m-xylene [1]	90.3	30-150		6/27/23 18:38
Tetrachloro-m-xylene [2]	83.3	30-150		6/27/23 18:38

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Project Location: Amherst, MA | Sample Description: | Work Order: 23F3073

Date Received: 6/22/2023

Field Sample #: LGRC-VWM-23-009 | Sampled: 6/21/2023 11:10

Sample ID: 23F3073-09

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	6/26/23	6/27/23 18:55	SFM
Aroclor-1221 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	6/26/23	6/27/23 18:55	SFM
Aroclor-1232 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	6/26/23	6/27/23 18:55	SFM
Aroclor-1242 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	6/26/23	6/27/23 18:55	SFM
Aroclor-1248 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	6/26/23	6/27/23 18:55	SFM
Aroclor-1254 [1]	0.36	0.20	µg/Wipe	1		SW-846 8082A	6/26/23	6/27/23 18:55	SFM
Aroclor-1260 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	6/26/23	6/27/23 18:55	SFM
Aroclor-1262 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	6/26/23	6/27/23 18:55	SFM
Aroclor-1268 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	6/26/23	6/27/23 18:55	SFM

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	93.4	30-150		6/27/23 18:55
Decachlorobiphenyl [2]	91.8	30-150		6/27/23 18:55
Tetrachloro-m-xylene [1]	90.1	30-150		6/27/23 18:55
Tetrachloro-m-xylene [2]	82.4	30-150		6/27/23 18:55

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Project Location: Amherst, MA | Sample Description: | Work Order: 23F3073

Date Received: 6/22/2023

Field Sample #: LGRC-VWB-23-010 | Sampled: 6/21/2023 11:15

Sample ID: 23F3073-10

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	6/26/23	6/27/23 19:13	SFM
Aroclor-1221 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	6/26/23	6/27/23 19:13	SFM
Aroclor-1232 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	6/26/23	6/27/23 19:13	SFM
Aroclor-1242 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	6/26/23	6/27/23 19:13	SFM
Aroclor-1248 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	6/26/23	6/27/23 19:13	SFM
Aroclor-1254 [2]	0.22	0.20	µg/Wipe	1		SW-846 8082A	6/26/23	6/27/23 19:13	SFM
Aroclor-1260 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	6/26/23	6/27/23 19:13	SFM
Aroclor-1262 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	6/26/23	6/27/23 19:13	SFM
Aroclor-1268 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	6/26/23	6/27/23 19:13	SFM

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	91.7	30-150		6/27/23 19:13
Decachlorobiphenyl [2]	91.1	30-150		6/27/23 19:13
Tetrachloro-m-xylene [1]	89.7	30-150		6/27/23 19:13
Tetrachloro-m-xylene [2]	80.5	30-150		6/27/23 19:13

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Project Location: Amherst, MA | Sample Description: | Work Order: 23F3073

Date Received: 6/22/2023

Field Sample #: LGRC-VWM-23-011 | Sampled: 6/21/2023 11:20

Sample ID: 23F3073-11

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	6/26/23	6/27/23 19:30	SFM
Aroclor-1221 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	6/26/23	6/27/23 19:30	SFM
Aroclor-1232 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	6/26/23	6/27/23 19:30	SFM
Aroclor-1242 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	6/26/23	6/27/23 19:30	SFM
Aroclor-1248 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	6/26/23	6/27/23 19:30	SFM
Aroclor-1254 [2]	ND	0.20	µg/Wipe	1		SW-846 8082A	6/26/23	6/27/23 19:30	SFM
Aroclor-1260 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	6/26/23	6/27/23 19:30	SFM
Aroclor-1262 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	6/26/23	6/27/23 19:30	SFM
Aroclor-1268 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	6/26/23	6/27/23 19:30	SFM

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	96.0	30-150		6/27/23 19:30
Decachlorobiphenyl [2]	91.5	30-150		6/27/23 19:30
Tetrachloro-m-xylene [1]	87.8	30-150		6/27/23 19:30
Tetrachloro-m-xylene [2]	79.4	30-150		6/27/23 19:30

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Project Location: Amherst, MA | Sample Description: | Work Order: 23F3073

Date Received: 6/22/2023

Field Sample #: LGRC-VWB-23-012 | Sampled: 6/21/2023 11:25

Sample ID: 23F3073-12

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	6/26/23	6/27/23 19:48	SFM
Aroclor-1221 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	6/26/23	6/27/23 19:48	SFM
Aroclor-1232 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	6/26/23	6/27/23 19:48	SFM
Aroclor-1242 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	6/26/23	6/27/23 19:48	SFM
Aroclor-1248 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	6/26/23	6/27/23 19:48	SFM
Aroclor-1254 [1]	1.3	0.20	µg/Wipe	1		SW-846 8082A	6/26/23	6/27/23 19:48	SFM
Aroclor-1260 [1]	1.3	0.20	µg/Wipe	1		SW-846 8082A	6/26/23	6/27/23 19:48	SFM
Aroclor-1262 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	6/26/23	6/27/23 19:48	SFM
Aroclor-1268 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	6/26/23	6/27/23 19:48	SFM

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	98.7	30-150		6/27/23 19:48
Decachlorobiphenyl [2]	95.0	30-150		6/27/23 19:48
Tetrachloro-m-xylene [1]	95.1	30-150		6/27/23 19:48
Tetrachloro-m-xylene [2]	85.5	30-150		6/27/23 19:48

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Project Location: Amherst, MA | Sample Description: | Work Order: 23F3073

Date Received: 6/22/2023

Field Sample #: LGRC-VWM-23-013 | Sampled: 6/21/2023 11:30

Sample ID: 23F3073-13

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	6/26/23	6/27/23 20:05	SFM
Aroclor-1221 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	6/26/23	6/27/23 20:05	SFM
Aroclor-1232 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	6/26/23	6/27/23 20:05	SFM
Aroclor-1242 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	6/26/23	6/27/23 20:05	SFM
Aroclor-1248 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	6/26/23	6/27/23 20:05	SFM
Aroclor-1254 [1]	0.29	0.20	µg/Wipe	1		SW-846 8082A	6/26/23	6/27/23 20:05	SFM
Aroclor-1260 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	6/26/23	6/27/23 20:05	SFM
Aroclor-1262 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	6/26/23	6/27/23 20:05	SFM
Aroclor-1268 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	6/26/23	6/27/23 20:05	SFM

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	96.4	30-150		6/27/23 20:05
Decachlorobiphenyl [2]	91.2	30-150		6/27/23 20:05
Tetrachloro-m-xylene [1]	96.6	30-150		6/27/23 20:05
Tetrachloro-m-xylene [2]	86.9	30-150		6/27/23 20:05

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Project Location: Amherst, MA | Sample Description: | Work Order: 23F3073

Date Received: 6/22/2023

Field Sample #: LGRC-VWB-23-014 | Sampled: 6/21/2023 11:35

Sample ID: 23F3073-14

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	6/26/23	6/27/23 20:23	SFM
Aroclor-1221 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	6/26/23	6/27/23 20:23	SFM
Aroclor-1232 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	6/26/23	6/27/23 20:23	SFM
Aroclor-1242 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	6/26/23	6/27/23 20:23	SFM
Aroclor-1248 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	6/26/23	6/27/23 20:23	SFM
Aroclor-1254 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	6/26/23	6/27/23 20:23	SFM
Aroclor-1260 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	6/26/23	6/27/23 20:23	SFM
Aroclor-1262 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	6/26/23	6/27/23 20:23	SFM
Aroclor-1268 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	6/26/23	6/27/23 20:23	SFM

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	96.3	30-150		6/27/23 20:23
Decachlorobiphenyl [2]	93.0	30-150		6/27/23 20:23
Tetrachloro-m-xylene [1]	88.4	30-150		6/27/23 20:23
Tetrachloro-m-xylene [2]	79.9	30-150		6/27/23 20:23

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Project Location: Amherst, MA | Sample Description: | Work Order: 23F3073

Date Received: 6/22/2023

Field Sample #: LGRC-VWM-23-015 | Sampled: 6/21/2023 11:40

Sample ID: 23F3073-15

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	6/26/23	6/27/23 20:41	SFM
Aroclor-1221 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	6/26/23	6/27/23 20:41	SFM
Aroclor-1232 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	6/26/23	6/27/23 20:41	SFM
Aroclor-1242 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	6/26/23	6/27/23 20:41	SFM
Aroclor-1248 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	6/26/23	6/27/23 20:41	SFM
Aroclor-1254 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	6/26/23	6/27/23 20:41	SFM
Aroclor-1260 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	6/26/23	6/27/23 20:41	SFM
Aroclor-1262 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	6/26/23	6/27/23 20:41	SFM
Aroclor-1268 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	6/26/23	6/27/23 20:41	SFM

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	92.5	30-150		6/27/23 20:41
Decachlorobiphenyl [2]	91.2	30-150		6/27/23 20:41
Tetrachloro-m-xylene [1]	85.9	30-150		6/27/23 20:41
Tetrachloro-m-xylene [2]	77.7	30-150		6/27/23 20:41

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Project Location: Amherst, MA | Sample Description: | Work Order: 23F3073

Date Received: 6/22/2023

Field Sample #: LGRC-VWB-23-016 | Sampled: 6/21/2023 11:45

Sample ID: 23F3073-16

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	6/26/23	6/27/23 20:58	SFM
Aroclor-1221 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	6/26/23	6/27/23 20:58	SFM
Aroclor-1232 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	6/26/23	6/27/23 20:58	SFM
Aroclor-1242 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	6/26/23	6/27/23 20:58	SFM
Aroclor-1248 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	6/26/23	6/27/23 20:58	SFM
Aroclor-1254 [1]	0.58	0.20	µg/Wipe	1		SW-846 8082A	6/26/23	6/27/23 20:58	SFM
Aroclor-1260 [1]	0.77	0.20	µg/Wipe	1		SW-846 8082A	6/26/23	6/27/23 20:58	SFM
Aroclor-1262 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	6/26/23	6/27/23 20:58	SFM
Aroclor-1268 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	6/26/23	6/27/23 20:58	SFM

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	94.4	30-150		6/27/23 20:58
Decachlorobiphenyl [2]	93.8	30-150		6/27/23 20:58
Tetrachloro-m-xylene [1]	88.6	30-150		6/27/23 20:58
Tetrachloro-m-xylene [2]	78.2	30-150		6/27/23 20:58

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Sample Extraction Data

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

Lab Number [Field ID]	Batch	Initial [Wipe]	Final [mL]	Date
23F3073-01 [LGRC-VWM-23-001]	B344301	1.00	10.0	06/26/23
23F3073-02 [LGRC-VWB-23-002]	B344301	1.00	10.0	06/26/23
23F3073-03 [LGRC-VWM-23-003]	B344301	1.00	10.0	06/26/23
23F3073-04 [LGRC-VWB-23-004]	B344301	1.00	10.0	06/26/23
23F3073-05 [LGRC-VWM-23-005]	B344301	1.00	10.0	06/26/23
23F3073-06 [LGRC-VWB-23-006]	B344301	1.00	10.0	06/26/23
23F3073-07 [LGRC-VWM-23-007]	B344301	1.00	10.0	06/26/23
23F3073-08 [LGRC-VWB-23-008]	B344301	1.00	10.0	06/26/23
23F3073-09 [LGRC-VWM-23-009]	B344301	1.00	10.0	06/26/23
23F3073-10 [LGRC-VWB-23-010]	B344301	1.00	10.0	06/26/23
23F3073-11 [LGRC-VWM-23-011]	B344301	1.00	10.0	06/26/23
23F3073-12 [LGRC-VWB-23-012]	B344301	1.00	10.0	06/26/23
23F3073-13 [LGRC-VWM-23-013]	B344301	1.00	10.0	06/26/23
23F3073-14 [LGRC-VWB-23-014]	B344301	1.00	10.0	06/26/23
23F3073-15 [LGRC-VWM-23-015]	B344301	1.00	10.0	06/26/23
23F3073-16 [LGRC-VWB-23-016]	B344301	1.00	10.0	06/26/23

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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 B344301 - SW-846 3540C											
Blank (B344301-BLK1)				Prepared: 06/26/23 Analyzed: 06/27/23							
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	*1.61*		µg/Wipe	2.00		80.6		30-150			
Surrogate: Decachlorobiphenyl [2C]	*1.56*		µg/Wipe	2.00		78.0		30-150			
Surrogate: Tetrachloro-m-xylene	*1.87*		µg/Wipe	2.00		93.4		30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*1.56*		µg/Wipe	2.00		78.0		30-150			
LCS (B344301-BS1)				Prepared: 06/26/23 Analyzed: 06/27/23							
Aroclor-1016	0.43	0.20	µg/Wipe	0.500		86.3		40-140			
Aroclor-1016 [2C]	0.41	0.20	µg/Wipe	0.500		81.0		40-140			
Aroclor-1260	0.34	0.20	µg/Wipe	0.500		68.5		40-140			
Aroclor-1260 [2C]	0.34	0.20	µg/Wipe	0.500		67.4		40-140			
Surrogate: Decachlorobiphenyl	*0.374*		µg/Wipe	2.00		**18.7**	*	30-150			S-23
Surrogate: Decachlorobiphenyl [2C]	*0.385*		µg/Wipe	2.00		**19.2**	*	30-150			S-23
Surrogate: Tetrachloro-m-xylene	*1.68*		µg/Wipe	2.00		84.1		30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*1.45*		µg/Wipe	2.00		72.4		30-150			
LCS Dup (B344301-BSD1)				Prepared: 06/26/23 Analyzed: 06/27/23							
Aroclor-1016	0.46	0.20	µg/Wipe	0.500		91.7		40-140	6.11	30	
Aroclor-1016 [2C]	0.43	0.20	µg/Wipe	0.500		86.4		40-140	6.42	30	
Aroclor-1260	0.42	0.20	µg/Wipe	0.500		83.6		40-140	19.9	30	
Aroclor-1260 [2C]	0.38	0.20	µg/Wipe	0.500		76.6		40-140	12.8	30	
Surrogate: Decachlorobiphenyl	*1.70*		µg/Wipe	2.00		85.0		30-150			
Surrogate: Decachlorobiphenyl [2C]	*1.72*		µg/Wipe	2.00		86.1		30-150			
Surrogate: Tetrachloro-m-xylene	*1.83*		µg/Wipe	2.00		91.3		30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*1.62*		µg/Wipe	2.00		81.2		30-150			

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

LGRC-VWB-23-002

Lab Sample ID: 23F3073-02 Date(s) Analyzed: 06/27/2023 06/27/2023

Instrument ID (1): ECD1 Instrument ID (2): ECD1

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

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%RPD
			FROM	TO		
Aroclor-1254	1	0.000	0.000	0.000	0.23	
	2	0.000	0.000	0.000	0.20	14.0

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

LGRC-VWM-23-003

Lab Sample ID: 23F3073-03 Date(s) Analyzed: 06/28/2023 06/28/2023

Instrument ID (1): ECD1 Instrument ID (2): ECD1

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

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%RPD
			FROM	TO		
Aroclor-1254	1	0.000	0.000	0.000	8.0	
	2	0.000	0.000	0.000	6.0	28.6

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

LGRC-VWM-23-005

Lab Sample ID: 23F3073-05 Date(s) Analyzed: 06/27/2023 06/27/2023

Instrument ID (1): ECD1 Instrument ID (2): ECD1

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

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%RPD
			FROM	TO		
Aroclor-1254	1	0.000	0.000	0.000	2.4	
	2	0.000	0.000	0.000	2.2	8.7
Aroclor-1260	1	0.000	0.000	0.000	0.28	
	2	0.000	0.000	0.000	0.31	10.2

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

LGRC-VWM-23-007

Lab Sample ID: 23F3073-07

Date(s) Analyzed: 06/27/2023 06/27/2023

Instrument ID (1): ECD1

Instrument ID (2): ECD1

GC Column (1): ID: (mm)

GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%RPD
			FROM	TO		
Aroclor-1254	1	0.000	0.000	0.000	0.60	
	2	0.000	0.000	0.000	0.56	6.9

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

LGRC-VWB-23-008

Lab Sample ID: 23F3073-08 Date(s) Analyzed: 06/27/2023 06/27/2023

Instrument ID (1): ECD1 Instrument ID (2): ECD1

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

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%RPD
			FROM	TO		
Aroclor-1254	1	0.000	0.000	0.000	0.22	
	2	0.000	0.000	0.000	0.21	9.1
Aroclor-1260	1	0.000	0.000	0.000	0.27	
	2	0.000	0.000	0.000	0.26	3.8

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

LGRC-VWM-23-009

Lab Sample ID: 23F3073-09 Date(s) Analyzed: 06/27/2023 06/27/2023

Instrument ID (1): ECD1 Instrument ID (2): ECD1

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

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%RPD
			FROM	TO		
Aroclor-1254	1	0.000	0.000	0.000	0.36	
	2	0.000	0.000	0.000	0.32	11.8

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

LGRC-VWB-23-010

Lab Sample ID: 23F3073-10 Date(s) Analyzed: 06/27/2023 06/27/2023

Instrument ID (1): ECD1 Instrument ID (2): ECD1

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

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%RPD
			FROM	TO		
Aroclor-1254	1	0.000	0.000	0.000	0.20	
	2	0.000	0.000	0.000	0.22	9.5

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

LGRC-VWB-23-012

Lab Sample ID: 23F3073-12 Date(s) Analyzed: 06/27/2023 06/27/2023

Instrument ID (1): ECD1 Instrument ID (2): ECD1

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

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%RPD
			FROM	TO		
Aroclor-1254	1	0.000	0.000	0.000	1.3	
	2	0.000	0.000	0.000	1.2	15.4
Aroclor-1260	1	0.000	0.000	0.000	1.3	
	2	0.000	0.000	0.000	1.1	16.7

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

LGRC-VWM-23-013

Lab Sample ID: 23F3073-13 Date(s) Analyzed: 06/27/2023 06/27/2023

Instrument ID (1): ECD1 Instrument ID (2): ECD1

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

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%RPD
			FROM	TO		
Aroclor-1254	1	0.000	0.000	0.000	0.29	
	2	0.000	0.000	0.000	0.28	6.9

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

LGRC-VWB-23-016

Lab Sample ID: 23F3073-16 Date(s) Analyzed: 06/27/2023 06/27/2023

Instrument ID (1): ECD1 Instrument ID (2): ECD1

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

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%RPD
			FROM	TO		
Aroclor-1254	1	0.000	0.000	0.000	0.58	
	2	0.000	0.000	0.000	0.47	21.0
Aroclor-1260	1	0.000	0.000	0.000	0.77	
	2	0.000	0.000	0.000	0.75	2.6

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

LCS

Lab Sample ID: B344301-BS1 Date(s) Analyzed: 06/27/2023 06/27/2023

Instrument ID (1): ECD1 Instrument ID (2): ECD1

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

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%RPD
			FROM	TO		
Aroclor-1016	1	0.000	0.000	0.000	0.43	
	2	0.000	0.000	0.000	0.41	4.8
Aroclor-1260	1	0.000	0.000	0.000	0.34	
	2	0.000	0.000	0.000	0.34	0.0

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

SW-846 8082A

LCS Dup

Lab Sample ID: B344301-BSD1 Date(s) Analyzed: 06/27/2023 06/27/2023

Instrument ID (1): ECD1 Instrument ID (2): ECD1

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

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%RPD
			FROM	TO		
Aroclor-1016	1	0.000	0.000	0.000	0.46	
	2	0.000	0.000	0.000	0.43	6.7
Aroclor-1260	1	0.000	0.000	0.000	0.42	
	2	0.000	0.000	0.000	0.38	10.0

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FLAG/QUALIFIER SUMMARY

*	QC result is outside of established limits.
†	Wide recovery limits established for difficult compound.
‡	Wide RPD limits established for difficult compound.
#	Data exceeded client recommended or regulatory level
ND	Not Detected
RL	Reporting Limit is at the level of quantitation (LOQ)
DL	Detection Limit is the lower limit of detection determined by the MDL study
MCL	Maximum Contaminant Level
	Percent recoveries and relative percent differences (RPDs) are determined by the software using values in the calculation which have not been rounded.
	No results have been blank subtracted unless specified in the case narrative section.
S-23	Surrogate recovery outside of control limits in BS/MS spiked sample, all reported analytes are within control criteria.

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CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
SW-846 8082A in Product/Solid	
Aroclor-1016	CT,NH,NY,ME,NC,VA,PA
Aroclor-1016 [2C]	CT,NH,NY,ME,NC,VA,PA
Aroclor-1221	CT,NH,NY,ME,NC,VA,PA
Aroclor-1221 [2C]	CT,NH,NY,ME,NC,VA,PA
Aroclor-1232	CT,NH,NY,ME,NC,VA,PA
Aroclor-1232 [2C]	CT,NH,NY,ME,NC,VA,PA
Aroclor-1242	CT,NH,NY,ME,NC,VA,PA
Aroclor-1242 [2C]	CT,NH,NY,ME,NC,VA,PA
Aroclor-1248	CT,NH,NY,ME,NC,VA,PA
Aroclor-1248 [2C]	CT,NH,NY,ME,NC,VA,PA
Aroclor-1254	CT,NH,NY,ME,NC,VA,PA
Aroclor-1254 [2C]	CT,NH,NY,ME,NC,VA,PA
Aroclor-1260	CT,NH,NY,ME,NC,VA,PA
Aroclor-1260 [2C]	CT,NH,NY,ME,NC,VA,PA
Aroclor-1262	NY,NC,VA,PA
Aroclor-1262 [2C]	NY,NC,VA,PA
Aroclor-1268	NY,NC,VA,PA
Aroclor-1268 [2C]	NY,NC,VA,PA

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

Code	Description	Number	Expires
CT	Connecticut Department of Public Health	PH-0821	12/31/2024
NY	New York State Department of Health	10899 NELAP	04/1/2024
NH	New Hampshire Environmental Lab	2516 NELAP	02/5/2024
NC	North Carolina Div. of Water Quality	652	12/31/2023
ME	State of Maine	MA00100	06/9/2025
VA	Commonwealth of Virginia	460217	12/14/2023
PA	Commonwealth of Pennsylvania DEP	68-05812	06/30/2024

23F3073
MEK

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http://www.pacelabs.com

CHAIN OF CUSTODY RECORD

39 Spruce Street
East Longmeadow, MA 01028

Doc # 381 Rev 5_07/13/2021

Access COC's and Support Requests

Company Name:	Woodard & Curran
Address:	40 Shattuck Rd Andover MA
Phone:	978-482-7867
Project Name:	UMass LGRC
Project Location:	Amherst MA
Project Number:	02235625.05
Project Manager:	George Franklin
Pace Quote Name/Number:	Std. W&C
Invoice Recipient:	GF
Sampled By:	Julia Barrientos

Requested Turnaround Time
7-Day ☐ 10-Day ☐
PFAS 10-Day (std) ☐ Due Date: STD.

Rush-Approval Required
1-Day ☐ 3-Day ☐
2-Day ☐ 4-Day ☐

Data Delivery
Format: PDF ☒ EXCEL ☐
Other:
CLP Like Data Pkg Required: ☐
Email To: gfranklin@woodardcurran.com
Fax To #:

Dissolved Metals Samples
○ Field Filtered
○ Lab to Filter

Orthophosphate Samples
○ Field Filtered
○ Lab to Filter

PCB ONLY
SOXHLET ☒
NON SOXHLET ☐

ANALYSIS REQUESTED

Pace Work Order#	Client Sample ID / Description	Beginning Date/Time	Ending Date/Time	COMP/GRAB	[1]Matrix Code	Conc Code	VIALS	GLASS	PLASTIC	BACTERIA	ENCORE	PCBs (8082/3540)
1	LGRC-VWM-25-001	6/2/23	10:30	Grab	O	U		X				X
2	LGRC-VWB-25-002		10:35									X
3	LGRC-VWM-25-003		10:40									X
4	LGRC-VWB-25-004		10:45									X
5	LGRC-VWM-25-005		10:50									X
6	LGRC-VWB-25-006		10:55									X
7	LGRC-VWM-25-007		11:00									X
8	LGRC-VWB-25-008		11:05									X
9	LGRC-VWM-25-009		11:10									X
10	LGRC-VWB-25-010	↓	11:15	↓	↓	↓		↓				X

[2] Preservation Code
Courier Use Only
Total Number Of:
VIALS
GLASS
PLASTIC
BACTERIA
ENCORE

Glassware in the fridge? Y / N
Glassware in freezer? Y / N
Prepackaged Cooler? Y / N
*Pace Analytical is not responsible for missing samples from prepacked coolers

Relinquished by: (signature)	Date/Time: 6/2/23 10:55
Received by: (signature)	Date/Time: 6-22-23 10:55
Relinquished by: (signature)	Date/Time: 6-22-23 17:30
Received by: (signature) 3.3	Date/Time: 6/23/23 1730
Relinquished by: (signature)	Date/Time:
Received by: (signature)	Date/Time:
Relinquished by: (signature)	Date/Time:
Received by: (signature)	Date/Time:

Client Comments: O = Wipe with hexane

Detection Limit Requirements
MA
CT
Other

Special Requirements
☐ MA MCP Required
MCP Certification Form Required
☐ CT RCP Required
RCP Certification Form Required
☐ MA State DW Required
PWSID #

Please 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

NELAC and AIHA-LAP, LLC Accredited

Project Entity
Government ☐ Municipality ☐ MWRA ☐ WRTA ☐
Federal ☐ 21 J ☐ School ☐
City ☐ Brownfield ☐ MBTA ☐

Other
☐ Chromatogram
☐ *AIHA-LAP,LLC*

[1] **Matrix Codes:**
GW = Ground Water
WW = Waste Water
DW = Drinking Water
A = Air
S = Soil
SL = Sludge
SOL = Solid
O = Other (please define)

[2] **Preservation Codes:**
I = Iced
H = HCL
M = Methanol
N = Nitric Acid
S = Sulfuric Acid
B = Sodium Bisulfate
X = Sodium Hydroxide
T = Sodium Thiosulfate
O = Other (please define)

Lab Comments:

Disclaimer: Pace Analytical is not responsible for any omitted information on the Chain of Custody. The Chain of Custody is a legal document that must be complete and accurate and is used to determine what analyses the laboratory will perform. Any missing information is not the laboratory's responsibility. Pace Analytical values your partnership on each project and will try to assist with missing information, but will not be held accountable.

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CHAIN OF CUSTODY RECORD

Doc # 381 Rev 5_07/13/2021

Page 2 of 2

Company Name:	Woodard & Curran
Address:	40 Shattuck Rd. Andover, MA
Phone:	978-482-7867
Project Name:	UMass LGRC
Project Location:	Amherst, MA
Project Number:	0227567.05
Project Manager:	George Franklin
Pace Quote Name/Number:	Std. WFC
Invoice Recipient:	GF
Sampled By:	Julia Barrett-Derra

Requested Turnaround Time
- 7-Day ☐
- PFAS 10-Day (std) ☐
- 10-Day ☐
- Due Date: Std.

Rush-Approval Required
- 1-Day ☐
- 2-Day ☐
- 3-Day ☐
- 4-Day ☐

Data Delivery
- Format: PDF ☒ EXCEL ☐
- Other:
- CLP Like Data Pkg Required: ☐
- Email To: gfranklin@woodardcurran.com
- Fax To #:

Dissolved Metals Samples
- ○ Field Filtered
- ○ Lab to Filter

Orthophosphate Samples
- ○ Field Filtered
- ○ Lab to Filter

PCB ONLY
- SOXHLET ☒
- NON SOXHLET ☐

ANALYSIS REQUESTED: PCBs (8082/3540)

Pace Work Order#	Client Sample ID / Description	Beginning Date/Time	Ending Date/Time	COMP/GRAB	[1]Matrix Code	Conc Code	VIALS	GLASS	PLASTIC	BACTERIA	ENCORE	PCBs (8082/3540)
11	LGRC-VWM-23-011	6/21/23	11:20	Grab	O	U		X				X
12	LGRC-VWB-23-012	↓	11:25	↓	↓	↓		↓				X
13	LGRC-VWM-23-013	↓	11:30	↓	↓	↓		↓				X
14	LGRC-VWB-23-014	↓	11:35	↓	↓	↓		↓				X
15	LGRC-VWM-23-015	↓	11:40	↓	↓	↓		↓				X
16	LGRC-VWB-23-016	↓	11:45	↓	↓	↓		↓				X

[2] Preservation Code

Courier Use Only
Total Number Of:
VIALS____
GLASS____
PLASTIC____
BACTERIA____
ENCORE____

Glassware in the fridge? Y / N
Glassware in freezer? Y / N
Prepackaged Cooler? Y / N
*Pace Analytical is not responsible for missing samples from prepacked coolers

[1] **Matrix Codes:**
GW = Ground Water
WW = Waste Water
DW = Drinking Water
A = Air
S = Soil
SL = Sludge
SOL = Solid
O = Other (please define)

[2] **Preservation Codes:**
I = Iced
H = HCL
M = Methanol
N = Nitric Acid
S = Sulfuric Acid
B = Sodium Bisulfate
X = Sodium Hydroxide
T = Sodium Thiosulfate
O = Other (please define)

Signature	Date/Time
Relinquished by: (signature) [signature]	6/22/23 10:55
Received by: (signature) [signature]	6-22-23 10:55
Relinquished by: (signature) [signature]	6-22-23 17:30
Received by: (signature) [signature] 33	6/22/23 1730
Relinquished by: (signature)	Date/Time:
Received by: (signature)	Date/Time:
Relinquished by: (signature)	Date/Time:
Received by: (signature)	Date/Time:

Client Comments: O = wipe with hexane

Detection Limit Requirements
- MA
- CT
- Other:

Special Requirements
- ☐ MA MCP Required
- MCP Certification Form Required
- ☐ CT RCP Required
- RCP Certification Form Required
- ☐ MA State DW Required
- PWSID #

Please 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

NELAC and AIHA-LAP, LLC Accredited

Other
- ☐ Chromatogram
- ☐ AIHA-LAP,LLC

Project Entity
- Government ☐
- Federal ☐
- City ☐
- Municipality ☐
- 21 J ☐
- Brownfield ☐
- MWRA ☐
- School ☐
- MBTA ☐
- WRTA ☐

Lab Comments:

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ENV-FRM-ELON-0001 V05__Sample Receiving Checklist

Log In Back-Sheet

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

Pace
PEOPLE ADVANCING SCIENCE

Client Woodard & Curran
Project UMass LGRC
MCP/RCP Required N/A
Deliverable Package Requirement N/A
Location Amherst, MA
PWSID# (When Applicable) N/A
Arrival Method:
Courier ☑ Fed Ex ☐ Walk In ☐ Other ☐
Received By / Date / Time EGR / 6-22-23 / 1730
Back-Sheet By / Date / Time AAM / 6-23-23 / 0904
Temperature Method Temp. Gun #
Temp ☑ < 6° C Actual Temperature 3.3°C
Rush Samples: Yes / (No) Notify
Short Hold: Yes / (No) Notify

	True	False
Received on Ice	☑	☐
Received in Cooler	☑	☐
Custody Seal: DATE TIME	☐	☑
COC Relinquished	☑	☐
COC/Samples Labels Agree	☑	☐
All Samples in Good Condition	☑	☐
Samples Received within Holding Time	☑	☐
Is there enough Volume	☑	☐
Proper Media/Container Used	☑	☐
Splitting Samples Required	☐	☑
MS/MSD	☐	☑
Trip Blanks	☐	☑
Lab to Filters	☐	☑
COC Legible	☑	☐

COC Included: (Check all included)

Client	☑	Analysis	☑	Sampler Name	☑
Project	☑	IDs	☑	Collection Date/Time	☑

All Samples Proper pH: (N/A) ☐ ☐

Notes regarding Samples/COC outside of SOP:

Additional Container Notes

Sample	Soils Jars (Circle Amb/Clear)				Ambers							Plastics									VOA Vials						Other / Fill in				
					1 Liter			250mL			100mL	1 Liter		500mL		250mL																
	16oz Amb/Clear	8oz Amb/Clear	4oz Amb/Clear	2oz Amb/Clear	Unpreserved	HCL	Sulfuric	Sulfuric	Phosphoric	HCl	Unpreserved	Unpreserved	Sulfuric	Unpreserved	Sulfuric	Unpreserved	Trizma	Sulfuric	Nitric	NaOH	NaOH/Zinc	Unpreserved	HCl	MeOH	D.I. Water	Bisulfate	Col/Bact				
1																															
2																															
3																															
4																															
5																															
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19																															
20																															

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July 13, 2023

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

Project Location: Amherst, MA
Client Job Number:
Project Number: 0225695.05
Laboratory Work Order Number: 23F3065

Enclosed are results of analyses for samples as received by the laboratory on June 22, 2023. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Meghan E. Kelley
Project Manager

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

REPORT DATE: 7/13/2023

PURCHASE ORDER NUMBER:

PROJECT NUMBER: 0225695.05

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 23F3065

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

PROJECT LOCATION: Amherst, MA

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
LGRC-1009-IAS-23	23F3065-01	Indoor air		TO-10A/EPA 680 Modified	
LGRC-1407-IAS-23	23F3065-02	Indoor air		TO-10A/EPA 680 Modified	
LGRC-8EL-IAS-23	23F3065-03	Indoor air		TO-10A/EPA 680 Modified	
LGRC-404-IAS-23	23F3065-04	Indoor air		TO-10A/EPA 680 Modified	
LGRC-404-DUP-IAS-23	23F3065-05	Indoor air		TO-10A/EPA 680 Modified	
LGRC-207L-IAS-23	23F3065-06	Indoor air		TO-10A/EPA 680 Modified	
LGRC-Ambient Air-IAS-23	23F3065-07	Ambient Air		TO-10A/EPA 680 Modified	

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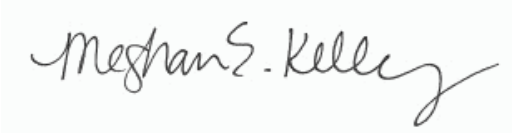
CASE NARRATIVE SUMMARY

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

The results of analyses reported only relate to samples submitted to Con-Test, a Pace Analytical Laboratory, for testing.
I certify that the analyses listed above, unless specifically listed as subcontracted, if any, were performed under my direction according to the approved methodologies listed in this document, and that based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.



Meghan E. Kelley
Reporting Specialist

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ANALYTICAL RESULTS

Project Location: Amherst, MA
Date Received: 6/22/2023
Field Sample #: LGRC-1009-IAS-23
Sample ID: 23F3065-01
Sample Matrix: Indoor air
Sampled: 6/21/2023 15:00

Sample Description/Location:
Sub Description/Location:

Flow Controller ID:
Sample Type:
Air Volume L: 909

Work Order: 23F3065

TO-10A/EPA 680 Modified

	Total µg			ug/m3			Date/Time	
Analyte	**Results**	**RL**	**Flag/Qual**	**Results**	**RL**	**Dilution**	**Analyzed**	**Analyst**
Monochlorobiphenyls	ND	0.0010		ND	0.0011	1	7/13/23 6:53	CJM
Dichlorobiphenyls	ND	0.0010		ND	0.0011	1	7/13/23 6:53	CJM
Trichlorobiphenyls	ND	0.0020		ND	0.0022	1	7/13/23 6:53	CJM
Tetrachlorobiphenyls	0.013	0.0020		0.015	0.0022	1	7/13/23 6:53	CJM
Pentachlorobiphenyls	0.026	0.0020		0.029	0.0022	1	7/13/23 6:53	CJM
Hexachlorobiphenyls	0.0081	0.0020		0.0089	0.0022	1	7/13/23 6:53	CJM
Heptachlorobiphenyls	ND	0.0030		ND	0.0033	1	7/13/23 6:53	CJM
Octachlorobiphenyls	ND	0.0030		ND	0.0033	1	7/13/23 6:53	CJM
Nonachlorobiphenyls	ND	0.0050		ND	0.0055	1	7/13/23 6:53	CJM
Decachlorobiphenyl	ND	0.0050		ND	0.0055	1	7/13/23 6:53	CJM
Total Polychlorinated biphenyls	0.048			0.052		1	7/13/23 6:53	CJM

Surrogates	% Recovery	% REC Limits	
Tetrachloro-m-xylene	91.3	50-125	7/13/23 6:53

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ANALYTICAL RESULTS

Project Location: Amherst, MA
Date Received: 6/22/2023
Field Sample #: LGRC-1407-IAS-23
Sample ID: 23F3065-02
Sample Matrix: Indoor air
Sampled: 6/21/2023 15:25

Sample Description/Location:
Sub Description/Location:

Flow Controller ID:
Sample Type:
Air Volume L: 918

Work Order: 23F3065

TO-10A/EPA 680 Modified

Analyte	Total µg Results	RL	Flag/Qual	ug/m3 Results	RL	Dilution	Date/Time Analyzed	Analyst
Monochlorobiphenyls	ND	0.0010		ND	0.0011	1	7/13/23 7:31	CJM
Dichlorobiphenyls	ND	0.0010		ND	0.0011	1	7/13/23 7:31	CJM
Trichlorobiphenyls	ND	0.0020		ND	0.0022	1	7/13/23 7:31	CJM
Tetrachlorobiphenyls	0.021	0.0020		0.023	0.0022	1	7/13/23 7:31	CJM
Pentachlorobiphenyls	0.042	0.0020		0.046	0.0022	1	7/13/23 7:31	CJM
Hexachlorobiphenyls	0.016	0.0020		0.017	0.0022	1	7/13/23 7:31	CJM
Heptachlorobiphenyls	ND	0.0030		ND	0.0033	1	7/13/23 7:31	CJM
Octachlorobiphenyls	ND	0.0030		ND	0.0033	1	7/13/23 7:31	CJM
Nonachlorobiphenyls	ND	0.0050		ND	0.0054	1	7/13/23 7:31	CJM
Decachlorobiphenyl	ND	0.0050		ND	0.0054	1	7/13/23 7:31	CJM
Total Polychlorinated biphenyls	0.079			0.086		1	7/13/23 7:31	CJM

Surrogates	% Recovery	% REC Limits	
Tetrachloro-m-xylene	95.6	50-125	7/13/23 7:31

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ANALYTICAL RESULTS

Project Location: Amherst, MA
Date Received: 6/22/2023
Field Sample #: LGRC-8EL-IAS-23
Sample ID: 23F3065-03
Sample Matrix: Indoor air
Sampled: 6/21/2023 15:35

Sample Description/Location:
Sub Description/Location:
Flow Controller ID:
Sample Type:
Air Volume L: 918

Work Order: 23F3065

TO-10A/EPA 680 Modified

Analyte	Total µg Results	RL	Flag/Qual	ug/m3 Results	RL	Dilution	Date/Time Analyzed	Analyst
Monochlorobiphenyls	ND	0.0010		ND	0.0011	1	7/13/23 8:08	CJM
Dichlorobiphenyls	ND	0.0010		ND	0.0011	1	7/13/23 8:08	CJM
Trichlorobiphenyls	ND	0.0020		ND	0.0022	1	7/13/23 8:08	CJM
Tetrachlorobiphenyls	0.011	0.0020		0.012	0.0022	1	7/13/23 8:08	CJM
Pentachlorobiphenyls	0.014	0.0020		0.015	0.0022	1	7/13/23 8:08	CJM
Hexachlorobiphenyls	ND	0.0020		ND	0.0022	1	7/13/23 8:08	CJM
Heptachlorobiphenyls	ND	0.0030		ND	0.0033	1	7/13/23 8:08	CJM
Octachlorobiphenyls	ND	0.0030		ND	0.0033	1	7/13/23 8:08	CJM
Nonachlorobiphenyls	ND	0.0050		ND	0.0054	1	7/13/23 8:08	CJM
Decachlorobiphenyl	ND	0.0050		ND	0.0054	1	7/13/23 8:08	CJM
Total Polychlorinated biphenyls	0.025			0.027		1	7/13/23 8:08	CJM

Surrogates	% Recovery	% REC Limits	
Tetrachloro-m-xylene	96.5	50-125	7/13/23 8:08

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ANALYTICAL RESULTS

Project Location: Amherst, MA
Date Received: 6/22/2023
Field Sample #: LGRC-404-IAS-23
Sample ID: 23F3065-04
Sample Matrix: Indoor air
Sampled: 6/21/2023 15:45

Sample Description/Location:
Sub Description/Location:

Flow Controller ID:
Sample Type:
Air Volume L: 918

Work Order: 23F3065

TO-10A/EPA 680 Modified

Analyte	Total µg Results	RL	Flag/Qual	ug/m3 Results	RL	Dilution	Date/Time Analyzed	Analyst
Monochlorobiphenyls	ND	0.0010		ND	0.0011	1	7/13/23 8:46	CJM
Dichlorobiphenyls	ND	0.0010		ND	0.0011	1	7/13/23 8:46	CJM
Trichlorobiphenyls	ND	0.0020		ND	0.0022	1	7/13/23 8:46	CJM
Tetrachlorobiphenyls	0.012	0.0020		0.013	0.0022	1	7/13/23 8:46	CJM
Pentachlorobiphenyls	0.025	0.0020		0.027	0.0022	1	7/13/23 8:46	CJM
Hexachlorobiphenyls	0.010	0.0020		0.011	0.0022	1	7/13/23 8:46	CJM
Heptachlorobiphenyls	ND	0.0030		ND	0.0033	1	7/13/23 8:46	CJM
Octachlorobiphenyls	ND	0.0030		ND	0.0033	1	7/13/23 8:46	CJM
Nonachlorobiphenyls	ND	0.0050		ND	0.0054	1	7/13/23 8:46	CJM
Decachlorobiphenyl	ND	0.0050		ND	0.0054	1	7/13/23 8:46	CJM
Total Polychlorinated biphenyls	0.048			0.052		1	7/13/23 8:46	CJM

Surrogates	% Recovery	% REC Limits	
Tetrachloro-m-xylene	99.8	50-125	7/13/23 8:46

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ANALYTICAL RESULTS

Project Location: Amherst, MA
Date Received: 6/22/2023
Field Sample #: LGRC-404-DUP-IAS-23
Sample ID: 23F3065-05
Sample Matrix: Indoor air
Sampled: 6/21/2023 15:50

Sample Description/Location:
Sub Description/Location:

Flow Controller ID:
Sample Type:
Air Volume L: 918

Work Order: 23F3065

TO-10A/EPA 680 Modified

	Total µg			ug/m3			Date/Time	
Analyte	**Results**	**RL**	**Flag/Qual**	**Results**	**RL**	**Dilution**	**Analyzed**	**Analyst**
Monochlorobiphenyls	ND	0.0010		ND	0.0011	1	7/13/23 9:23	CJM
Dichlorobiphenyls	ND	0.0010		ND	0.0011	1	7/13/23 9:23	CJM
Trichlorobiphenyls	ND	0.0020		ND	0.0022	1	7/13/23 9:23	CJM
Tetrachlorobiphenyls	0.013	0.0020		0.014	0.0022	1	7/13/23 9:23	CJM
Pentachlorobiphenyls	0.021	0.0020		0.023	0.0022	1	7/13/23 9:23	CJM
Hexachlorobiphenyls	0.013	0.0020		0.015	0.0022	1	7/13/23 9:23	CJM
Heptachlorobiphenyls	ND	0.0030		ND	0.0033	1	7/13/23 9:23	CJM
Octachlorobiphenyls	ND	0.0030		ND	0.0033	1	7/13/23 9:23	CJM
Nonachlorobiphenyls	ND	0.0050		ND	0.0054	1	7/13/23 9:23	CJM
Decachlorobiphenyl	ND	0.0050		ND	0.0054	1	7/13/23 9:23	CJM
Total Polychlorinated biphenyls	0.048			0.052		1	7/13/23 9:23	CJM

Surrogates	% Recovery	% REC Limits	
Tetrachloro-m-xylene	95.8	50-125	7/13/23 9:23

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ANALYTICAL RESULTS

Project Location: Amherst, MA
Date Received: 6/22/2023
Field Sample #: LGRC-207L-IAS-23
Sample ID: 23F3065-06
Sample Matrix: Indoor air
Sampled: 6/21/2023 15:55

Sample Description/Location:
Sub Description/Location:
Flow Controller ID:
Sample Type:
Air Volume L: 918

Work Order: 23F3065

TO-10A/EPA 680 Modified

	Total µg			ug/m3			Date/Time	
Analyte	**Results**	**RL**	**Flag/Qual**	**Results**	**RL**	**Dilution**	**Analyzed**	**Analyst**
Monochlorobiphenyls	ND	0.0010		ND	0.0011	1	7/13/23 10:01	CJM
Dichlorobiphenyls	ND	0.0010		ND	0.0011	1	7/13/23 10:01	CJM
Trichlorobiphenyls	ND	0.0020		ND	0.0022	1	7/13/23 10:01	CJM
Tetrachlorobiphenyls	0.017	0.0020		0.019	0.0022	1	7/13/23 10:01	CJM
Pentachlorobiphenyls	0.034	0.0020		0.037	0.0022	1	7/13/23 10:01	CJM
Hexachlorobiphenyls	0.013	0.0020		0.014	0.0022	1	7/13/23 10:01	CJM
Heptachlorobiphenyls	ND	0.0030		ND	0.0033	1	7/13/23 10:01	CJM
Octachlorobiphenyls	ND	0.0030		ND	0.0033	1	7/13/23 10:01	CJM
Nonachlorobiphenyls	ND	0.0050		ND	0.0054	1	7/13/23 10:01	CJM
Decachlorobiphenyl	ND	0.0050		ND	0.0054	1	7/13/23 10:01	CJM
Total Polychlorinated biphenyls	0.064			0.070		1	7/13/23 10:01	CJM

Surrogates	% Recovery	% REC Limits	
Tetrachloro-m-xylene	101	50-125	7/13/23 10:01

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ANALYTICAL RESULTS

Project Location: Amherst, MA
Date Received: 6/22/2023
Field Sample #: LGRC-Ambient Air-IAS-23
Sample ID: 23F3065-07
Sample Matrix: Ambient Air
Sampled: 6/21/2023 16:00

Sample Description/Location:
Sub Description/Location:
Flow Controller ID:
Sample Type:
Air Volume L: 918

Work Order: 23F3065

TO-10A/EPA 680 Modified

	Total µg			ug/m3			Date/Time	
Analyte	**Results**	**RL**	**Flag/Qual**	**Results**	**RL**	**Dilution**	**Analyzed**	**Analyst**
Monochlorobiphenyls	ND	0.0010		ND	0.0011	1	7/13/23 10:38	CJM
Dichlorobiphenyls	ND	0.0010		ND	0.0011	1	7/13/23 10:38	CJM
Trichlorobiphenyls	ND	0.0020		ND	0.0022	1	7/13/23 10:38	CJM
Tetrachlorobiphenyls	ND	0.0020		ND	0.0022	1	7/13/23 10:38	CJM
Pentachlorobiphenyls	ND	0.0020		ND	0.0022	1	7/13/23 10:38	CJM
Hexachlorobiphenyls	ND	0.0020		ND	0.0022	1	7/13/23 10:38	CJM
Heptachlorobiphenyls	ND	0.0030		ND	0.0033	1	7/13/23 10:38	CJM
Octachlorobiphenyls	ND	0.0030		ND	0.0033	1	7/13/23 10:38	CJM
Nonachlorobiphenyls	ND	0.0050		ND	0.0054	1	7/13/23 10:38	CJM
Decachlorobiphenyl	ND	0.0050		ND	0.0054	1	7/13/23 10:38	CJM
Total Polychlorinated biphenyls	0.0			0		1	7/13/23 10:38	CJM

Surrogates	% Recovery	% REC Limits	
Tetrachloro-m-xylene	107	50-125	7/13/23 10:38

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Sample Extraction Data

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

Lab Number [Field ID]	Batch	Initial [Cartridge	Final [mL]	Date
23F3065-01 [LGRC-1009-IAS-23]	B344387	1.00	1.00	06/28/23
23F3065-02 [LGRC-1407-IAS-23]	B344387	1.00	1.00	06/28/23
23F3065-03 [LGRC-8EL-IAS-23]	B344387	1.00	1.00	06/28/23
23F3065-04 [LGRC-404-IAS-23]	B344387	1.00	1.00	06/28/23
23F3065-05 [LGRC-404-DUP-IAS-23]	B344387	1.00	1.00	06/28/23
23F3065-06 [LGRC-207L-IAS-23]	B344387	1.00	1.00	06/28/23
23F3065-07 [LGRC-Ambient Air-IAS-23]	B344387	1.00	1.00	06/28/23

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QUALITY CONTROL

PCB Homologues by GC/MS (Air) with Soxhlet Extraction - Quality Control

Analyte	Total µg Results	Total µg RL	ug/m3 Results	ug/m3 RL	Spike Level Total µg	Source Result	%REC	%REC Limits	RPD	RPD Limit	Flag/Qual
Batch B344387 - SW-846 3540C											
Blank (B344387-BLK1)					Prepared: 06/28/23 Analyzed: 07/13/23						
Monochlorobiphenyls	ND	0.0010									
Dichlorobiphenyls	ND	0.0010									
Trichlorobiphenyls	ND	0.0020									
Tetrachlorobiphenyls	ND	0.0020									
Pentachlorobiphenyls	ND	0.0020									
Hexachlorobiphenyls	ND	0.0020									
Heptachlorobiphenyls	ND	0.0030									
Octachlorobiphenyls	ND	0.0030									
Nonachlorobiphenyls	ND	0.0050									
Decachlorobiphenyl	ND	0.0050									
Total Polychlorinated biphenyls	0.0										
Surrogate: Tetrachloro-m-xylene	*0.197*				*0.200*		*98.7*	*50-125*			
LCS (B344387-BS1)					Prepared: 06/28/23 Analyzed: 07/13/23						
Monochlorobiphenyls	0.23	0.0010			0.200		116	40-140			
Dichlorobiphenyls	0.19	0.0010			0.200		94.6	40-140			
Trichlorobiphenyls	0.19	0.0020			0.200		95.4	40-140			
Tetrachlorobiphenyls	0.38	0.0020			0.400		94.8	40-140			
Pentachlorobiphenyls	0.42	0.0020			0.400		106	40-140			
Hexachlorobiphenyls	0.49	0.0020			0.400		122	40-140			
Heptachlorobiphenyls	0.75	0.0030			0.600		125	40-140			
Octachlorobiphenyls	0.71	0.0030			0.600		119	40-140			
Nonachlorobiphenyls	1.2	0.0050			1.00		117	40-140			
Decachlorobiphenyl	1.1	0.0050			1.00		113	40-140			
Surrogate: Tetrachloro-m-xylene	*0.201*				*0.200*		*100*	*50-125*			
LCS Dup (B344387-BSD1)					Prepared: 06/28/23 Analyzed: 07/13/23						
Monochlorobiphenyls	0.22	0.0010			0.200		108	40-140	6.57	50	
Dichlorobiphenyls	0.19	0.0010			0.200		93.6	40-140	1.08	50	
Trichlorobiphenyls	0.19	0.0020			0.200		93.5	40-140	2.00	50	
Tetrachlorobiphenyls	0.37	0.0020			0.400		92.0	40-140	3.04	50	
Pentachlorobiphenyls	0.41	0.0020			0.400		102	40-140	3.35	50	
Hexachlorobiphenyls	0.45	0.0020			0.400		113	40-140	7.90	50	
Heptachlorobiphenyls	0.70	0.0030			0.600		116	40-140	7.22	50	
Octachlorobiphenyls	0.67	0.0030			0.600		111	40-140	6.21	50	
Nonachlorobiphenyls	1.1	0.0050			1.00		111	40-140	4.51	50	
Decachlorobiphenyl	1.1	0.0050			1.00		111	40-140	1.38	50	
Surrogate: Tetrachloro-m-xylene	*0.201*				*0.200*		*101*	*50-125*			

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FLAG/QUALIFIER SUMMARY

*	QC result is outside of established limits.
†	Wide recovery limits established for difficult compound.
‡	Wide RPD limits established for difficult compound.
#	Data exceeded client recommended or regulatory level
ND	Not Detected
RL	Reporting Limit is at the level of quantitation (LOQ)
DL	Detection Limit is the lower limit of detection determined by the MDL study
MCL	Maximum Contaminant Level

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

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

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INTERNAL STANDARD AREA AND RT SUMMARY

TO-10A/EPA 680 Modified

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
LCS (B344387-BS1)			Lab File ID: F23S193033.D			Analyzed: 07/13/23 05:01			
Phenanthrene-d10	271591	20.446	275874	20.446	98	70 - 130	0.0000	+/-0.50	
Chrysene-d12	185353	28.247	191639	28.241	97	70 - 130	0.0060	+/-0.50	
LCS Dup (B344387-BSD1)			Lab File ID: F23S193034.D			Analyzed: 07/13/23 05:38			
Phenanthrene-d10	292686	20.446	275874	20.446	106	70 - 130	0.0000	+/-0.50	
Chrysene-d12	206054	28.239	191639	28.241	108	70 - 130	-0.0020	+/-0.50	
Blank (B344387-BLK1)			Lab File ID: F23S193035.D			Analyzed: 07/13/23 06:16			
Phenanthrene-d10	281107	20.446	275874	20.446	102	70 - 130	0.0000	+/-0.50	
Chrysene-d12	193941	28.248	191639	28.241	101	70 - 130	0.0070	+/-0.50	
LGRC-1009-IAS-23 (23F3065-01)			Lab File ID: F23S193036.D			Analyzed: 07/13/23 06:53			
Phenanthrene-d10	295003	20.446	275874	20.446	107	70 - 130	0.0000	+/-0.50	
Chrysene-d12	207138	28.241	191639	28.241	108	70 - 130	0.0000	+/-0.50	
LGRC-1407-IAS-23 (23F3065-02)			Lab File ID: F23S193037.D			Analyzed: 07/13/23 07:31			
Phenanthrene-d10	285148	20.446	275874	20.446	103	70 - 130	0.0000	+/-0.50	
Chrysene-d12	200669	28.241	191639	28.241	105	70 - 130	0.0000	+/-0.50	
LGRC-8EL-IAS-23 (23F3065-03)			Lab File ID: F23S193038.D			Analyzed: 07/13/23 08:08			
Phenanthrene-d10	294111	20.446	275874	20.446	107	70 - 130	0.0000	+/-0.50	
Chrysene-d12	205845	28.241	191639	28.241	107	70 - 130	0.0000	+/-0.50	
LGRC-404-IAS-23 (23F3065-04)			Lab File ID: F23S193039.D			Analyzed: 07/13/23 08:46			
Phenanthrene-d10	271143	20.446	275874	20.446	98	70 - 130	0.0000	+/-0.50	
Chrysene-d12	189082	28.241	191639	28.241	99	70 - 130	0.0000	+/-0.50	
LGRC-404-DUP-IAS-23 (23F3065-05)			Lab File ID: F23S193040.D			Analyzed: 07/13/23 09:23			
Phenanthrene-d10	302037	20.446	275874	20.446	109	70 - 130	0.0000	+/-0.50	
Chrysene-d12	216494	28.241	191639	28.241	113	70 - 130	0.0000	+/-0.50	
LGRC-207L-IAS-23 (23F3065-06)			Lab File ID: F23S193041.D			Analyzed: 07/13/23 10:01			
Phenanthrene-d10	286135	20.446	275874	20.446	104	70 - 130	0.0000	+/-0.50	
Chrysene-d12	200282	28.249	191639	28.241	105	70 - 130	0.0080	+/-0.50	
LGRC-Ambient Air-IAS-23 (23F3065-07)			Lab File ID: F23S193042.D			Analyzed: 07/13/23 10:38			
Phenanthrene-d10	294217	20.446	275874	20.446	107	70 - 130	0.0000	+/-0.50	
Chrysene-d12	211379	28.249	191639	28.241	110	70 - 130	0.0080	+/-0.50	

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CONTINUING CALIBRATION CHECK

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

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

* Values outside of QC limits

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

CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications

No certified Analyses included in this Report

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

Code	Description	Number	Expires

Pace Analytical®

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CHAIN OF CUSTODY RECORD (AIR)

DOC #378 REV3_11232021

39 Spruce Street
East Longmeadow, MA 01028

Page 1 of 1

Company Name:	Woodard & Curran
Address:	40 Shattuck Rd. Andover, MA
Phone:	978-482-7867
Project Name:	UMass LGRC
Project Location:	Amherst, MA
Project Number:	0225695.05
Project Manager:	George Franklin
Pace Quote Name/Number:	~~Std. WZC~~ 00138408
Invoice Recipient:	GF
Sampled By:	Julen Barrenetxea

Requested Turnaround Time
7-Day ☐ 10-Day ☑
Due Date: Std.

Rush-Approval Required
1-Day ☐ 3-Day ☐
2-Day ☐ 4-Day ☐

Data Delivery
Format: PDF ☒ EXCEL ☐
Other:
CLP Like Data Pkg Required: ☐
Email To: gfranklin@woodardcurran.com
Fax To #:

ANALYSIS REQUESTED: PCB Homolog; Initial Pressure; Final Pressure; Lab Receipt Pressure (" Hg)

Pace Work Order#	Client Sample ID / Description	Beginning Date/Time	Ending Date/Time	Total Minutes Sampled	Flow Rate (☐ m³/min ☒ L/min)	Matrix Code	Volume (☒ Liters ☐ m³)	PCB Homolog	Initial Pressure	Final Pressure	Lab Receipt Pressure	Summa Can ID	Flow Controller ID
1	LGRC-1009-IAS-23	6/21/23	9:00 15:00	360	2.525	IA		X				01	
2	LGRC-1407-IAS-23	↓	9:25 15:25	360	2.55	IA		X				02	
3	LGRC-8EL-IAS-23	↓	9:35 15:35	360	2.55	IA		X				03	
4	LGRC-404-IAS-23	↓	9:45 15:45	360	2.55	IA		X				04	
5	LGRC-404-Dup-IAS-23	↓	9:50 15:50	360	2.55	D		X				05	
6	LGRC-207L-IAS-23	↓	9:55 15:55	360	2.55	IA		X				06	
7	LGRC-Ambient-IAS-23	↓	12:00 18:00	360	2.55	AMB		X				07	

Please fill out completely, sign, date and retain the yellow copy for your records

Summa canisters and flow controllers must be returned within 15 days of receipt or rental fees will apply

For summa canister and flow controller information please refer to Con-Test's Air Media Agreement

Comments:

Please 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______

Signature	Date/Time
Relinquished by: (signature) [signature]	6/22/23 1055
Received by: (signature) [signature]	6-22-23 10:55
Relinquished by: (signature) [signature] 6-22-23	17:30
Received by: (signature) [signature] 59	6/22/23 1930
Relinquished by: (signature)	Date/Time:
Received by: (signature)	Date/Time:

Detection Limit Requirements
MA
CT
Other

Special Requirements
☐ MA MCP Required
MCP Certification Form Required
☐ CT RCP Required
RCP Certification Form Required
☐ Other

Pace Analytical®

NELAC and AIHA-LAP, LLC Accredited

Project Entity
☐ Government ☐ Municipality ☐ MWRA ☐ WRTA
☐ Federal ☐ 21 J ☐ School
☐ City ☐ Brownfield ☐ MBTA

Other
☐ Chromatogram
☐ AIHA-LAP,LLC

PCB ONLY
☐ Soxhlet
☐ Non Soxhlet

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East Longmeadow, MA. 01028
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Log In Back-Sheet

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

Pace
PEOPLE ADVANCING SCIENCE

Client Woodward & Curran
Project # 225695.05
MCP/RCP Required no
Deliverable Package Requirement none
Location Amherst, MA
PWSID# (When Applicable) n/a
Arrival Method Courier
Received By / Date / Time Mcm 6/22/23 1736
Back-Sheet By / Date / Time Mcm 6/22/23 1957
Temperature Method Gun # 5
Temp < 6° C ☑ Actual Temperature 5.9
Rush Samples: Yes / No No Notify
Short Hold: Yes / No No Notify

	True	False
Received on Ice	☐	☐
Received in Cooler	☐	☐
Custody Seal: DATE TIME	☐	☐
COC Relinquished	☐	☐
COC/Samples Labels Agree	☐	☐
All Samples in Good Condition	☐	☐
Samples Received within Holding Time	☐	☐
Is there enough Volume	☐	☐
Proper Media/Container Used	☐	☐
Individually Certified Cans	☐	☐
Trip Blanks	☐	☐
COC Legible	☐	☐

Notes regarding Samples/COC outside of SOP:

Lot Reference # 23041710

COC Included: (Check all included)

Client ☐ Analysis ☐ Sampler Name ☐
Project ☐ IDs ☐ Collection Date/Time ☐

Container	#	Size	Regulator	Duration	Accessories			
Summa Cans					Nut/Ferrule		IC Train	
Tedlar Bags					Tubing			
TO-17 Tubes					T-Connector		Shipping Charges	
Radiello					Syringe			
Pufs/ TO-11	7			6 hrs	Tedlar			

Can #'s															
1		8		16		24		Regs #'s		8		16		24	
2		9		17		25		1	061923A-1	9		25		25	
3		10		18		26		2	061923A-2	10		26		26	
4		11		19		27		3	061923A-3	11		27		27	
5		12		20		28		4	061923A-4	12		28		28	
6		13		21		29		5	061923A-5	13		29		29	
7		14		22		30		6	061923A-6	14		30		30	
		15		23		31		7	061923A-7	15		31		31	
Unused Media								**Pufs/TO-17's**							
1		8		16		24		1		8		16		24	
2		9		17		25		2		9		17		25	
3		10		18		26		3		10		18		26	
4		11		19		27		4		11		19		27	
5		12		20		28		5		12		20		28	
6		13		21		29		6		13		21		29	
7		14		22		30		7		14		22		30	
		15		23		31				15		23			

Woodard & Curran

woodardcurran.com