Appendix F
Hazardous Materials

Appendix F.3c
Hazardous Materials Investigation and Findings Reports
(February 2022)

LIMITED HAZARDOUS MATERIALS INVESTIGATION REPORT
NORTH/WEST BATTERY PARK CITY RESILIENCY PROJECT
NEW YORK, NEW YORK

MATRIXNEWORLD
Engineering Progress

Prepared for:
AECOM USA, Inc.
605 Third Avenue
New York, New York 10158

On Behalf of:
Battery Park City Authority
200 Liberty Street
New York, NY 10281

Prepared by:
Matrix New World Engineering, Land Surveying,
and Landscape Architecture, P.C.
26 Columbia Turnpike
Florham Park, New Jersey 07932

Matrix No. 20-1152

February 23, 2022

TABLE OF CONTENTS

TABLES

LIST OF FIGURES

APPENDICES

1.0 INTRODUCTION

Matrix New World Engineering, Land Surveying, and Landscape Architecture, PC (Matrix), was retained by AECOM USA, Inc. (AECOM) on behalf of the Battery Park City Authority (BPCA) to provide environmental consulting services and perform a limited hazardous materials investigation in connection with the proposed project, which will provide flood risk reduction for Battery Park City (BPC) and its residents.

1.1 BACKGROUND

Matrix has been tasked with the identification, characterization, and delineation of asbestos-containing material (ACM), lead-containing paint (LCP), lead-based paint (LBP), polychlorinated biphenyls (PCB) in caulking/sealant material(s), and other universal/regulated wastes which may trigger special handling, disposal, and/or recycling requirements to facilitate the work of the North/West Battery Park City Resiliency Project. This *Limited Hazardous Materials Investigation Report* documents the findings, recommendations, and anticipated regulatory requirements specific to the project specified.

The following sections discuss the investigation methodologies, findings, recommendations, and anticipated regulatory requirements associated with potential project environmental impacts.
The North/West Battery Park City Resiliency Project contemplates the creation of an integrated coastal flood risk management system from First Place, north along the Battery Park City Esplanade, across to the east side of West Street/Route 9A and terminate above Chambers Street at a high point on Greenwich Street. The general site location can be found on the Figure 1 - Regional Location Map.

These areas consist primarily of public areas and parks along the waterfront and adjacent to ancillary structures/components. Only those areas along the ground level, exterior were investigated as part of this project.

2.0 PREVIOUS SURVEY REPORT AND DESIGN DOCUMENT REVIEW

Prior to conducting the visual investigation at the site, Matrix requested access to available information related to the construction of the existing esplanade and information relating to ACM, LCP/LBP and other hazardous/regulated materials within the areas expected to be impacted by project construction. To date, no documents relating to ACM, LCP/LBP, PCBs, or other hazardous/regulated materials associated with the project limits have been reviewed by Matrix.

Matrix received various project documents relating to the proposed conceptual and preliminary flood barrier design options which was utilized by the Matrix field team during the assessment(s) in determining suspected hazardous materials to be assessed during the anticipated hazardous materials investigation. Specifically, the “North Battery Park City Resiliency” design report was used to define the basis of project impacts.

The Matrix field team also utilized the (1)“North Battery Park City Resiliency Design Report”, March 2021, (2)the “North Battery Park City Resiliency Project, Package 1”, conceptual Design Drawings, March 2021, (3)the “North Battery Park City Resiliency Project, Package 2”, March 2021, Preliminary Design Drawings, Draft, February 2021, and (4)the “Record Information Received from Utility Companies” report, February 2021 (produced and provided by AECOM) to determine the proposed limits of construction impacts. These documents were utilized in the determination of suspected hazardous building materials and potentially hazardous components which will require removal, relocation, or protection during project related construction. It is understood that the proposed alignment is preliminary in nature; any deviations (during design development) from the provided alignment plan will require additional review and potential revisions to this Limited Hazardous Materials Investigation Report. Areas which are supplemented to the provided scope will be investigated in agreement with the procedures and methodologies as described herein.

Additionally, Matrix submitted a “Hazardous Materials Sampling Plan for the Battery Park City Resiliency Project” dated January 7, 2022 (Sampling Plan). The Sampling Plan reviewed Matrix’s initial visual investigation as well as outlined the procedures Matrix used for this Report, as well as the materials expected to be sampled.

3.0 ASBESTOS INVESTIGATION AND SAMPLING PROGRAM

3.1 GENERAL SITE AND PROJECT DESCRIPTION

These areas consist primarily of public areas and parks along the waterfront and adjacent to ancillary structures/components. Only those areas along the ground level, exterior were investigated as a part of this project.

3.2 ASBESTOS CONTAINING MATERIAL INVESTIGATION

The limited hazardous materials investigation was performed on January 15, 2022, by Mr. Matthew Sheldon, a dual-certified New York City Department of Environmental Protection (NYCDEP) Certified Asbestos Investigator (CAI) (NYCDEP No. 148633) and New York State Department of Labor (NYSDOL)-Certified Asbestos Building Inspector (NYSDOL No. 14-12741) and Mr. Michael Bonafede, a NYSDOL Certified Asbestos Building Inspector (NYSDOL No. 19-01170).

The asbestos investigation and sampling program was performed in accordance with the requirements and standard procedures outlined in the Occupational Safety and Health Administration (OSHA) 29 CFR 1926.1101, the United States Environmental Protection Agency (USEPA) 40 CFR Part 763 Asbestos Hazard Emergency Response Act (AHERA), NYSDOL Industrial Code Rule (ICR) Part 56 Asbestos, and NYCDEP Title 15 - Chapter 1. The investigation included the inspection of all in-scope exterior areas in preparation of the subject project. As part of the investigation, Matrix also collected information on the physical condition and location of suspected ACM and other characteristics of the project area that may affect the likelihood of ACM being disturbed during renovation activities. A description of the investigation methodology is contained in Section 3.3, the results of this limited investigation are presented in Section 3.4, and the analytical results are discussed in Section 3.5. Site photographs are included in Appendix A. Copies of Matrix's company and personnel asbestos certifications are included in Appendix D.

3.3 SURVEY METHODOLOGY AND LIMITATIONS

The investigation process consisted of the following steps:

- Inspection of all accessible in-scope areas of the existing site scheduled for impact for friable and non-friable materials and/or products which are likely to contain asbestos.

- Delineation of homogeneous areas (HAs) and determination of the locations for the collection of bulk samples.
- Collection of information on the physical condition and location of ACM and other characteristics of the project area which may increase the likelihood that ACM may be disturbed and that asbestos fibers released and distributed.
- Preparation of a tabulated inventory of suspected ACM and bulk samples collected from various locations. The table includes the location, condition, assessment of friability, and analytical results from bulk samples. Samples were collected from HAs to determine the presence/absence of asbestos. The results of this investigation are discussed in Section 3.4 of this report.

Samples were submitted to Metro Analytical Laboratories (NVLAP Certification No. 500081-0) for analysis of asbestos content by polarized light microscopy (PLM) analysis, New York State Stratified Point Count 198.1 (friable). Samples of non-friable organically bound (NOB) materials that were negative for asbestos by PLM analysis (ELAP Method 198.6) were further analyzed by transmission electron microscopy (TEM) (ELAP Method 198.4). All samples collected were properly bagged and sealed, cataloged and chain of custody documentation completed. The analytical results are summarized on Table 1, and a copy of the analytical data report is included as Appendix B.

3.4 ASBESTOS INVESTIGATION FINDINGS

The findings of the asbestos investigation associated with the subject site are included in this section. The location, condition, assessment of friability, and material condition assessment are included on the asbestos field survey forms which are in included within Appendix C.

3.4.1 THERMAL SYSTEM INSULATION

Thermal System Insulation (TSI) is defined in 29 CFR 1910.1101 (OSHA, Occupational Exposures to Asbestos) s material “applied to pipes, fittings, boilers, breeching, tanks, ducts, or other structural components to prevent heat loss or gain.” TSI materials are characterized by their form or composition.

Pipe fitting insulation (i.e., pipe joints, elbows, valves, tees, etc.) may contain asbestos and is usually hand molded mud-applied to the fitting and may have a canvas wrapping over the material. The newer non-asbestos pipe fitting insulation is typically fiberglass covered with a PVC or paper jacket or rubber.

The number of samples to be collected from each friable HA is as follows:

- 3 samples from each HA;
- 1 sample from each HA of patched TSI if < 6 square feet;
- A sufficient number, as determined by a certified inspector, to determine whether the material is ACM for other TSI (elbows); and
- No samples of TSI that are determined, by the certified inspector, to be fiberglass, foam glass, rubber, and other non-suspect insulation.

No Samples of TSI were collected during Matrix's investigation.

3.4.2 SURFACING MATERIAL

29 CFR 1910.1101 defines surfacing material as "sprayed, troweled-on, or otherwise applied to surfaces (such as plaster on ceilings and walls or other materials on surfaces for acoustical, fireproofing, and other purposes)." The anticipated number of samples of each friable HA was determined in the field by the area of material, as follows:

- 3 samples from HAs up to 1,000 square feet;
- 5 samples for HAs of 1,000 to 5,000 square feet; and
- 7 samples for HAs greater than 5,000 square feet.

No samples of surfacing materials were collected during the subject investigation.

3.4.3 MISCELLANEOUS MATERIAL

40 CFR 763.83 defines miscellaneous material as building material on "structural components, structural members or fixtures, such as floor and ceiling tiles, and does not include surfacing material or thermal system insulation." A minimum of two (2) samples were collected from each miscellaneous HA (as required by AHERA).

The following miscellaneous materials were collected and submitted for laboratory analysis:

- Building Retention Wall Mortar (HA-01) – South Cove Park North of Museum of Jewish Heritage;
- Building Retention Wall Caulk (HA-02) – South Cove Park North of Museum of Jewish Heritage;
- Retention Wall Mortar (HA-04) – South Cove Park Between 2nd Place and 3rd Place;

- Building/Retention Wall Joint (HA-05) – South Cove Park Between 2nd Place and 3rd Place;
- Fibrous Expansion Joint (HA-06) – South Cove Park Between 2nd Place and 3rd Place;
- Caulk to Retention Wall (HA-07) – South Cove Park Between 2nd Place and 3rd Place;
- Caulk to Lower Retention Wall (HA-08) – South Cove Park Lower Wall by 3rd Place;
- Retention Wall Caulk (HA-09) – South Cove Park Esplanade;
- Caulk to Plaza (HA-10) – South Cove Park Esplanade Plaza;
- Retention Wall Caulk (HA-12) – South Cove Park Esplanade Plaza South of Marina;
- Caulk to Outfall Frame (HA-13) – Outfall #NCM-832;
- Mortar to Planter (HA-14) – By Outfall #NCM-832 and Liberty Street;
- Expansion Joint to Outfall Frame (HA-15) – Outfall #NCM-832 Towards West Street;
- Caulk to Bench (HA-17) – Battery Park Esplanade Adjacent to Liberty Street;
- Mortar to Stone Wall (HA-18) – Rockefeller Park;
- Mortar to Stone Wall Short Wall (HA-19) – Rockefeller Park Along River Terrace;
- Caulk to Stairs (HA-20) – Rockefeller Park Along River Terrace;
- Coping Stone Seam Caulk to Wal (HA-21) – Rockefeller Park;
- Mortar to Stairs (HA-22) – Rockefeller Park Adjacent to Vesey Street;
- Mortar to Curb (HA-23) – Rockefeller Park; and
- Caulk to Wall (HA-24) – Rockefeller Park.

3.5 ANALYTICAL RESULTS

This section discusses the analytical results of asbestos bulk samples collected as part of this limited investigation. The results are summarized on Table 1 and the laboratory data package is included as Appendix B.

3.5.1 THERMAL SYSTEM INSULATION

No suspect TSI materials were identified within the scope of work (SOW) limits of the project.

3.5.2 SURFACING MATERIAL

No suspect surfacing materials were identified within the SOW limits of the project.

3.5.3 MISCELLANEOUS MATERIAL

A total of forty-two (42) samples of miscellaneous materials were collected during the investigation. None of the suspect miscellaneous materials collected were found to be asbestos containing (>1% asbestos).

3.5.4 ASSUMED MATERIALS

Matrix's investigation included the assessment and characterization of materials which were accessible (or could be made accessible through limited destructive methods utilized on site) at the time of the subject investigation. It is possible that suspected ACM may exist in concealed spaces which were not observable or accessible at the time of the targeted investigation (wall chases, etc.). Therefore, any suspect materials, including but not limited to, concealed/below-grade vapor barriers/water-proofing membranes or electrified components which are encountered during the anticipated renovation activities must be assumed to contain asbestos and treated as ACM, until further sampling can be accomplished.

4.0 LEAD IN PAINT INVESTIGATION

4.1 INTRODUCTION

The LCP/LBP investigation was performed by Matrix on January 15, 2022, in parallel with the asbestos investigation efforts; and was targeted at the identification of painted components coated with LCP/LBP which will be engaged during proposed renovation and included an assessment of potential lead contamination associated with property spaces. The investigation was conducted by Mr. Michael Bonafede, a USEPA Certified Lead Risk Assessor (USEPA No. LBP-R-I202857-1). The LCP/LBP investigation consisted of a visual inspection of the project limits, as well as the potential performance of paint chip sampling to detect the presence of lead in painted surfaces. Analysis of the paint chips will be performed using USEPA Method SW846-7420, Flame Atomic Absorption, by a National Voluntary Laboratory Accredited Program (NVLAP) certified laboratory. The U.S. Consumer Product Safety Commission (CPSC) defines LCP as paint or other surface coating with a lead content in excess of 0.009% by weight (16 CFR 1303.2 (b)(2)). To achieve an acceptable method detection limit of 0.01% by weight, a paint chip sample of one square inch or greater for each sample will be submitted. The purpose of the sampling program will be to identify LCP/LBP with the potential to impact construction workers and/or the public during proposed construction activities. A description of the inspection methodology is contained in Section 4.2, and the results of the inspection are contained in Section 4.2.

4.2 LEAD IN PAINT INVESTIGATION METHODOLOGY AND LIMITATIONS

The LCP/LBP inspection performed consisted of the following steps:

- A visual walk through of the affected areas was conducted (noting the areas to be potentially tested). The collection of paint chip samples and testing of representative painted surfaces was scheduled to occur concurrent with the visual assessment.
- Testing locations were randomly selected in order to facilitate proper testing.
- For the purposes of this project, the investigation was performed in general accordance with the Department of Housing and Urban Development (HUD) Title X requirements (surface-by-surface).

During the inspection, no painted surfaces were identified within the proposed SOW. Therefore, no paint chip samples were collected, and no building components were tested. An additional summary of the findings and recommendations can be found in Section 7.2 of this report.

5.0 PCB CAULK SURVEY

5.1 INTRODUCTION

Matrix conducted a concurrent PCB caulk investigation to identify suspected PCB-containing caulking material present within the SOW limits that has the potential to be impacted during the proposed project. The PCB caulk investigation was performed by Matrix on January 15, 2022. PCBs were used in a wide range of industrial and commercial applications from 1929 to 1979 including hydraulic and dielectric fluids, lubricants, and additives to plastics, paints, and pesticides. Most recently, PCBs have been detected in caulking materials that were manufactured during that period. PCB manufacturing, processing, distribution, and disposal are currently regulated by the Toxic Substances Control Act (TSCA) and EPA regulation 40 CFR Part 761. Disposal of materials that are >50 ppm or mg/kg PCBs are EPA-regulated PCB Bulk Waste under TSCA.

5.2 PCB CAULK SURVEY AND METHODOLOGY AND LIMITATIONS

Matrix collected a composite sample from each HA of the thirteen (13) caulking materials identified during our inspection with potential to be impacted by the proposed scope of work. Samples from each HA of caulking material were analyzed by EMSL Analytical, Inc., an independent laboratory certified by NVLAP, and analyzed for PCB content using EPA Method 3540C 8082A. A Copy of the PCB analysis laboratory report is included in Appendix C. Suspected PCB-containing caulking material identified within the proposed impacted areas of the Site include the following:

<u>Caulking Materials</u>

- Building Retention Wall Caulk (PCB-HA-02) – South Cove Park North of Museum of Jewish Heritage;
- Building/Retention Wall Joint (PCB-HA-05) – South Cove Park Between 2nd Place and 3rd Place;
- Caulk to Retention Wall (PCB-HA-07) – South Cove Park Between 2nd Place and 3rd Place;
- Caulk to Lower Retention Wall (PCB-HA-08) – South Cove Park Lower Wall by 3rd Place;
- Caulk to Plaza (PCB-HA-10) – South Cove Park Esplanade Plaza;
- Caulk to Outfall Frame (PCB-HA-13) – Outfall #NCM-832;
- Expansion Joint to Outfall Frame (PCB-HA-15) – Outfall #NCM-832 Towards West Street;

- Caulk to Bench (PCB-HA-17) – Battery Park Esplanade Adjacent to Liberty Street;
- Caulk to Stairs (PCB-HA-20) – Rockefeller Park Along River Terrace;
- Coping Stone Seam Caulk to Wall (PCB-HA-21) – Rockefeller Park;
- Caulk to Wall (PCB-HA-24) – Rockefeller Park;
- Retention Wall Caulk (PCB-HA-09) – South Cove Park Esplanade; and
- Retention Wall Caulk (PCB-HA-12) – South Cove Park Esplanade Plaza South of Marina.

5.3 PCB CAULK INVESTIGATION FINDINGS

The findings of the PCB caulk investigation conducted at the Site on January 15, 2022, are described in this section. The analytical results for the caulking materials are summarized in the following table.

Matrix Sample No.	Material Description	Lab ID No.	PCB Concentration by Weight (mg/Kg)
PCB-HA-02	Building Retention Wall Caulk - South Cove Park North of Museum of Jewish Heritage	012200767-0001	<0.97 mg/Kg
PCB-HA-05	Building/Retention Wall Joint - South Cove Park Between 2nd Place and 3rd Place	012200767-0002	<0.85 mg/Kg
PCB-HA-07	Caulk to Retention Wall - South Cove Park Between 2nd Place and 3rd Place	012200767-0003	<0.87 mg/Kg
PCB-HA-08	Caulk to Lower Retention Wall - South Cove Park Lower Wall by 3rd Place	012200767-0004	<0.85 mg/Kg
PCB-HA-10	Caulk to Plaza - South Cove Park Esplanade Plaza	012200767-0005	<0.95 mg/Kg
PCB-HA-13	Caulk to Outfall Frame - Outfall #NCM-832	012200767-0006	<0.89 mg/Kg
PCB-HA-15	Expansion Joint to Outfall Frame - Outfall #NCM-832 Towards West Street	012200767-0007	<0.85 mg/Kg
PCB-HA-17	Caulk to Bench - Battery Park Esplanade Adjacent to Liberty Street	012200767-0008	<0.90 mg/Kg
PCB-HA-20	Caulk to Stairs - Rockefeller Park Along River Terrace	012200767-0009	<0.95 mg/Kg

Matrix Sample No.	Material Description	Lab ID No.	PCB Concentration by Weight (mg/Kg)
PCB-HA-21	Coping Stone Seam Caulk to Wall - Rockefeller Park	012200767-0010	<0.91 mg/Kg
PCB-HA-24	Caulk to Wall - Rockefeller Park	012200767-0011	<0.91 mg/Kg
PCB-HA-09	Retention Wall Caulk - South Cove Park Esplanade	012200767-0012	<0.89 mg/Kg
PCB-HA-12	Retention Wall Caulk - South Cove Park Esplanade Plaza South of Marina	012200767-0013	<0.89 mg/Kg
Notes: mg/Kg = milligrams per kilograms Bold indicates EPA-regulated PCB Bulk Waste under TSCA			

Based upon the PCB caulk analytical results, all of the samples collected are characterized as **non-EPA-regulated** PCB Bulk Waste based on the TSCA PCB-containing materials classification criteria. The composite PCB caulk sample locations can be found on Figures 5-7.

6.0 OTHER HAZARDOUS MATERIALS AND UNIVERSAL WASTES

6.1 INTRODUCTION

As part of the limited hazardous materials investigation, Matrix inspected accessible areas within the SOW limits for evidence of other potentially hazardous materials and universal wastes including (but not limited to) fluorescent light bulbs and fixtures, mercury containing material (MCM), PCB-containing lighting ballasts, dielectric oils, and stored hazardous materials that may require special handling and/or disposal to facilitate the work of this project. Materials and components which will require segregation, special handling, and/or material characterization were documented and tabulated by the Matrix team in an effort to provide an estimated level of hazardous/regulated waste management required.

6.2 INSPECTION FINDINGS

Although other hazardous materials were noted within the vicinity of the current SOW, none are expected to be impacted. An additional summary of the findings and recommendations associated with the universal/regulated waste investigation are discussed in Section 7.3.

7.0 FINDINGS AND CONCLUSIONS

The following sections summarize the findings and conclusions of the subject limited hazardous materials investigation conducted by Matrix for the project specified.

7.1 ACM FINDINGS AND CONCLUSIONS

During the limited investigation, no ACM was identified within the project limits. A summary of the suspect materials identified, sampled and the results are included in Table 1. Any additional suspect materials that may be encountered during proposed demolition activities must be assumed to contain asbestos and treated as ACM unless further sampling and lab analysis proves otherwise.

7.2 LEAD IN PAINT FINDINGS AND CONCLUSIONS

During the investigation, no painted surfaces were identified within the proposed SOW; however, it is possible that additional painted surfaces may be identified during construction. If painted surfaces are identified they should be assumed LCP/LBP and must be managed properly during construction procedures. During disturbance activities, much of these materials can be disposed of as construction debris through the New York State Department of Environmental Conservation (NYSDEC) C7 Exemption form (when paint is adhered to the substrate). Paint chip debris generated may not enter the general waste stream and must be containerized and characterized prior to disposal. Analysis of paint chips debris generated must undergo Toxic Characteristic Leaching Procedure (TCLP) analysis to fulfill waste profiling and manifesting requirements. Worker exposure, medical surveillance, personal protective equipment, and engineering controls must be in accordance with the OSHA Lead in Construction Standard (29 CFR 1926.62).

7.3 SUMMARY OF PCB CAULK FINDINGS

The PCB survey results are summarized in Section 5.3. A total of thirteen (13) PCB-containing caulking materials were identified at the Site during the survey. All thirteen (13) samples collected were less than the regulatory limit of 50 ppm or mg/kg according to the TSCA PCB-containing materials classification criteria. In accordance with EPA regulation 40 CRF Part 761, none of the suspect caulking materials identified within the SOW will need specialized handling or disposal.

7.4 OTHER HAZARDOUS MATERIALS & UNIVERSAL WASTE FINDINGS & CONCLUSIONS

Although other hazardous materials were noted within the vicinity of the current SOW, they are not anticipated to be impacted. If Universal and regulated wastes are determined to be impacted as part of this project, they must be segregated prior to the performance of work which may impact them and profiled/recycled in accordance with applicable federal, state, and local regulations. Universal wastes must be recycled in accordance with 40 CFR Part 273 and 6 NYCRR Part 360. Materials and components which cannot be identified through labeling, or document search must be characterized through laboratory analysis for profiling. All testing and profiling must be performed in accordance with the USEPA Resource Conservation and Recovery Act (RCRA) requirements.

TABLES

TABLE 1
SUMMARY OF ASBESTOS ANALYTICAL RESULTS BY PLM TEM TESTING
BATTERY PARK CITY RESILIENCY PROJECT
NORTH/WEST BATTERY PARK CITY, LOWER MANHATTAN, NY
MATRIX PROJECT NO. 20-1152

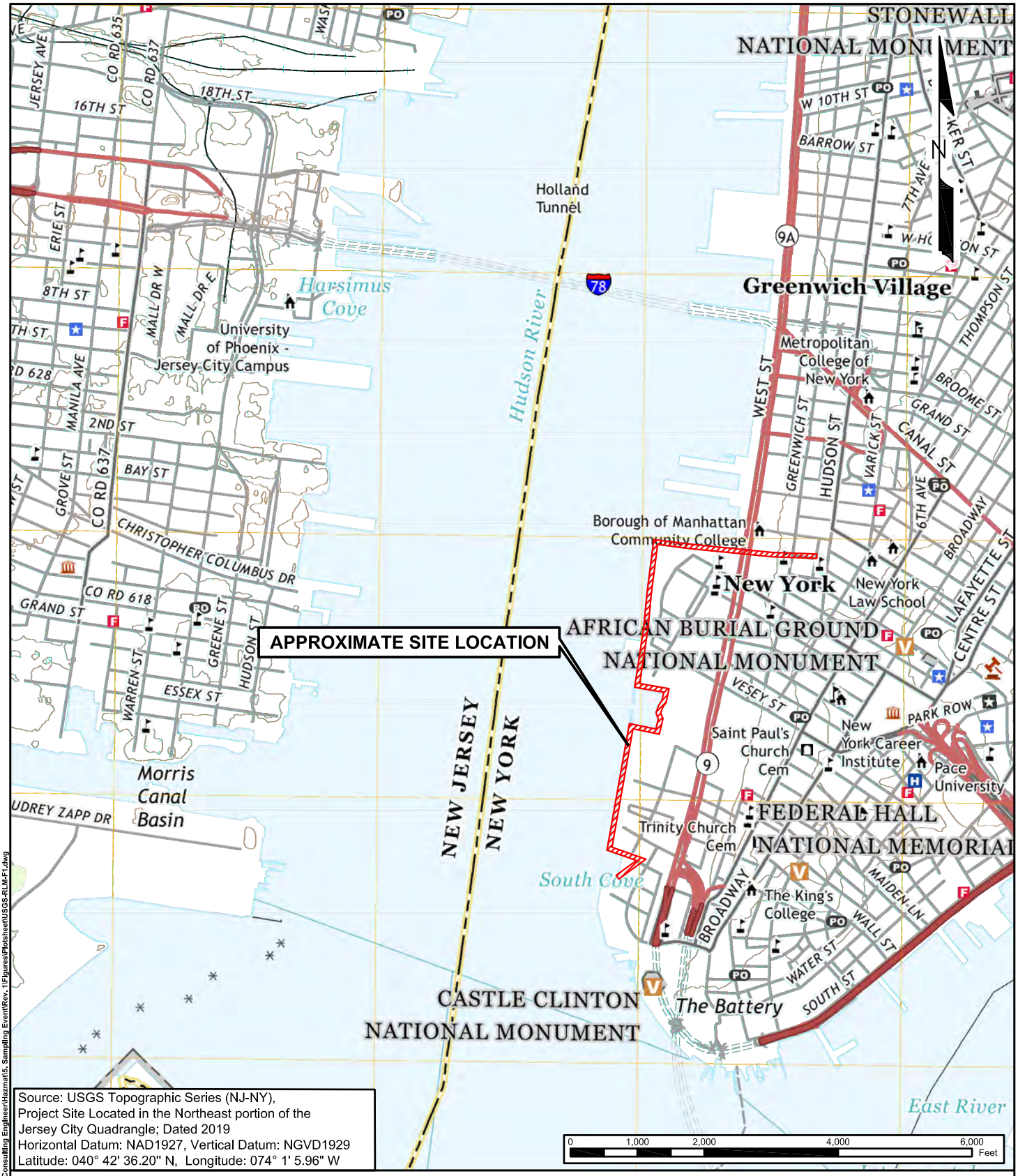
Homogeneous Area	MATRIX Sample No.	Lab No.	Material Description	Sample Location	PLM Results	PLM NOB Results	TEM NOB Results
01	01-01	B22010356-1	Building Retention Wall Mortar	South Cove Park North of Museum of Jewish Heritage	NAD	NA	NA
	01-02	B22010356-2			NAD	NA	NA
02	02-01	B22010356-3	Building Retention Wall Caulk	South Cove Park North of Museum of Jewish Heritage	NA	NAD	NAD
	02-02	B22010356-4			NA	NAD	NAD
Homogeneous Area 3 not submitted intentionally. This was identified in Matrix's Sampling Plan Dated January 7, 2022 but determined to be non-suspect Teflon tape upon further investigation.							
04	04-01	B22010356-5	Retention Wall Mortar	South Cove Park Between 2nd Place and 3rd Place	NAD	NA	NA
	04-02	B22010356-6			NAD	NA	NA
05	05-01	B22010356-7	Building/Retention Wall Joint	South Cove Park Between 2nd Place and 3rd Place	NA	NAD	NAD
	05-02	B22010356-8			NA	NAD	NAD
06	06-01	B22010356-9	Fibrous Expansion Joint	South Cove Park Between 2nd Place and 3rd Place	NAD	NA	NA
	06-02	B22010356-10			NAD	NA	NA
07	07-01	B22010356-11	Caulk to Retention Wall	South Cove Park Between 2nd Place and 3rd Place	NA	NAD	NAD
	07-02	B22010356-12			NA	NAD	NAD
08	08-01	B22010356-13	Caulk to Lower Retention Wall	South Cove Park Lower Wall by 3rd Place	NA	NAD	NAD
	08-02	B22010356-14			NA	NAD	NAD
09	09-01	B22010356-15	Retention Wall Caulk	South Cove Park Esplanade Adjacent to Thames Street	NA	NAD	NAD
	09-02	B22010356-16		South Cove Park Esplanade Adjacent to Rector Place	NA	NAD	NAD
10	10-01	B22010356-17	Caulk to Plaza	South Cove Park Esplanade Plaza by Rector Place	NA	NAD	NAD
	10-02	B22010356-18		South Cove Park Esplanade Plaza by Rector Place	NA	NAD	NAD
Homogeneous Area 11 not submitted intentionally. This was identified in Matrix's Sampling Plan Dated January 7, 2022 but determined to be non-suspect concrete (decorative stamp that looks like a joint).							
12	12-01	B22010356-19	Retention Wall Caulk	South Cove Park Esplanade Plaza South of Marina	NA	NAD	NAD
	12-02	B22010356-20			NA	NAD	NAD
13	13-01	B22010356-21	Caulk to Outfall Frame	Outfall #NCM-832	NA	NAD	NAD
	13-02	B22010356-22			NA	NAD	NAD
14	14-01	B22010356-23	Mortar to Planter	By Outfall #NCM-832 and Liberty Street	NAD	NA	NA
	14-02	B22010356-24			NAD	NA	NA
15	15-01	B22010356-25	Expansion Joint to Outfall Frame	Outfall #NCM-832 Towards West Street	NA	NAD	NAD
	15-02	B22010356-26			NA	NAD	NAD
Homogeneous Area 16 not submitted intentionally. This was identified in Matrix's Sampling Plan Dated January 7, 2022 but determined to be non-suspect concrete (decorative stamp that looks like a joint).							
17	17-01	B22010356-27	Caulk to Bench	Battery Park Esplanade Adjacent to Liberty Street	NA	NAD	NAD
	17-02	B22010356-28			NA	NAD	NAD
18	18-01	B22010356-29	Mortar to Stone Wall	Rockefeller Park Along River Terrace	NAD	NA	NA
	18-02	B22010356-30		Rockefeller Park by Murray Street	NAD	NA	NA
19	19-01	B22010356-31	Mortar to Stone Wall Short Wall	Rockefeller Park Along River Terrace	NAD	NA	NA
	19-02	B22010356-32			NAD	NA	NA
20	20-01	B22010356-33	Caulk to Stairs	Rockefeller Park Along River Terrace	NA	NAD	NAD
	20-02	B22010356-34			NA	NAD	NAD

TABLE 1
SUMMARY OF ASBESTOS ANALYTICAL RESULTS BY PLM TEM TESTING
BATTERY PARK CITY RESILIENCY PROJECT
NORTH/WEST BATTERY PARK CITY, LOWER MANHATTAN, NY
MATRIX PROJECT NO. 20-1152

Homogeneous Area	MATRIX Sample No.	Lab No.	Material Description	Sample Location	PLM Results	PLM NOB Results	TEM NOB Results
21	21-01	B22010356-35	Coping Stone Seam Caulk to Wall	Rockefeller Park Adjacent to Murray Street	NA	NAD	NAD
	21-02	B22010356-36		Rockefeller Park Adjacent to Warren Street	NA	NAD	NAD
22	22-01	B22010356-37	Mortar to Stairs	Rockefeller Park Adjacent to Vesey Street	NAD	NA	NA
	22-02	B22010356-38			NAD	NA	NA
23	23-01	B22010356-39	Mortar to Curb	Rockefeller Park Adjacent to Lilly Pond	NAD	NA	NA
	23-02	B22010356-40		Rockefeller Park Adjacent to South Meadow Park	NAD	NA	NA
24	24-01	B22010356-41	Caulk to Wall	Rockefeller Park Adjacent to Vesey Street	NA	NAD	NAD
	24-02	B22010356-42		Rockefeller Park Adjacent to North Esplanade	NA	NAD	NAD

NOTES:
NA = Sample Not Analyzed by This Method
ND = No Asbestos Detected
PLM = Polarized Light Microscopy
TEM = Transmission Electron Microscopy
Results shown in bold type indicate that the homogeneous area is Asbestos-Containing Material (ACM)
Please refer to Figures 2-7 for ACM sample locations

FIGURES



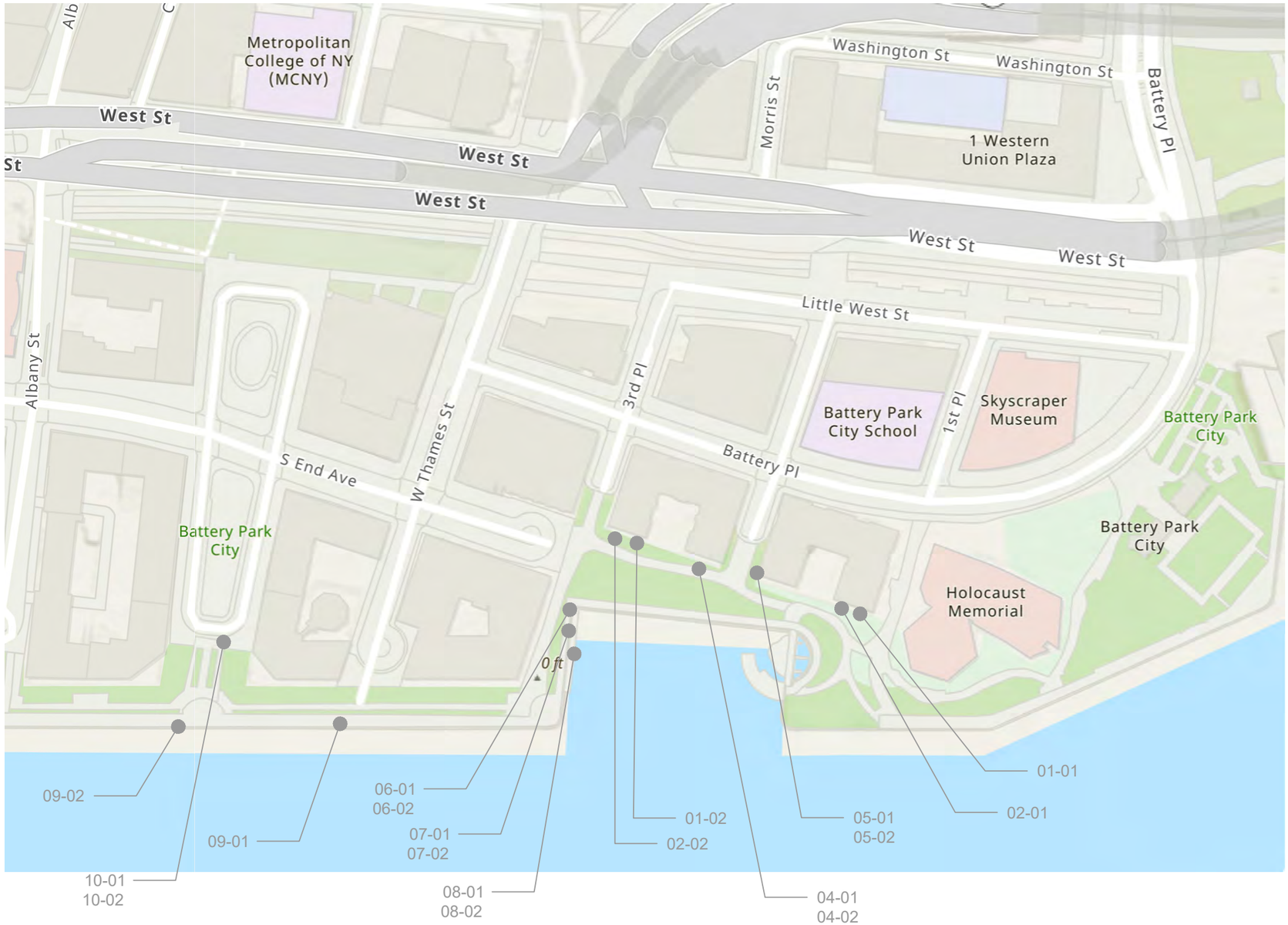
Source: USGS Topographic Series (NJ-NY),
Project Site Located in the Northeast portion of the
Jersey City Quadrangle; Dated 2019
Horizontal Datum: NAD1927, Vertical Datum: NGVD1929
Latitude: 040° 42' 36.20" N, Longitude: 074° 1' 5.96" W

REGIONAL LOCATION MAP

MATRIXNEWORLD
Engineering Progress
Matrix New World Engineering, Land Surveying
and Landscape Architecture, P.C.
26 Columbia Turnpike
Florham Park, New Jersey 07932
WBE / DBE / SBE
Tel: 973-240-1800
Fax: 973-240-1818
www.matrixneworld.com

BATTERY PARK CITY AUTHORITY
WEST BATTERY PARK CITY AND
NORTH/WEST BATTERY PARK CITY RESILIENCY PROJECT
LOWER MANHATTAN, NEW YORK

SCALE:	PROJECT NO.:	DATE:	FIGURE NO.:
1 : 24,000	20-1152	FEBRUARY 2022	1



LEGEND

- 00-00 BULK ASBESTOS SAMPLE LOCATION (POSITIVE)
- 00-00 BULK ASBESTOS SAMPLE LOCATION (NEGATIVE)

NO.	DESCRIPTION: REVISIONS	DATE:	BY:	APR:

DESIGNED BY: MB
CHECKED BY: MS
RELEASED BY: GG

MATRIXNEWORLD
Engineering Progress
Matrix New World Engineering, Land Surveying and Landscape Architecture, P.C.
26 Columbia Turnpike
Florham Park, New Jersey 07932
WBE / DBE / SBE
Tel: 973-240-1800
Fax: 973-240-1818
www.matrixneworld.com

STATE OF NEW YORK CERTIFICATE OF AUTHORIZATION No. 17-082661

ASBESTOS BULK SAMPLE LOCATION PLAN

BATTERY PARK CITY AUTHORITY
NORTH/WEST BATTERY PARK
RESILIENCY PROJECT
LOWER MANHATTAN, NEW YORK

PROJECT NUMBER: 20-1152
SCALE: NTS
DATE: 2/8/2022
FIGURE: 2

LEGEND

- 00-00 BULK ASBESTOS SAMPLE LOCATION (POSITIVE)
- 00-00 BULK ASBESTOS SAMPLE LOCATION (NEGATIVE)

NO.	DESCRIPTION	DATE	BY	APR

REVISIONS

DESIGNED BY: MB
CHECKED BY: MS
RELEASED BY: GG

MATRIXNEWORLD
Engineering Progress
Matrix New World Engineering, Land Surveying and Landscape Architecture, P.C.
26 Columbia Turnpike
Florham Park, New Jersey 07932
WBE / DBE / SBE
Tel: 973-240-1800
Fax: 973-240-1818
www.matrixneworld.com
STATE OF NEW YORK CERTIFICATE OF AUTHORIZATION No. 17-082661

ASBESTOS BULK SAMPLE LOCATION PLAN

BATTERY PARK CITY AUTHORITY
NORTH/WEST BATTERY PARK
RESILIENCY PROJECT
LOWER MANHATTAN, NEW YORK

PROJECT NUMBER: 20-1152
SCALE: NTS
DATE: 2/8/2022
FIGURE: 3

LEGEND

- 00-00 BULK ASBESTOS SAMPLE LOCATION (POSITIVE)
- 00-00 BULK ASBESTOS SAMPLE LOCATION (NEGATIVE)

NO.	DESCRIPTION: REVISIONS	DATE:	BY:	APR:

DESIGNED BY: MB
CHECKED BY: MS
RELEASED BY: GG

MATRIXNEWORLD
Engineering Progress
Matrix New World Engineering, Land Surveying and Landscape Architecture, P.C.
26 Columbia Turnpike
Florham Park, New Jersey 07932
WBE / DBE / SBE
Tel: 973-240-1800
Fax: 973-240-1818
www.matrixneworld.com
STATE OF NEW YORK CERTIFICATE OF AUTHORIZATION No. 17-082661

ASBESTOS BULK SAMPLE LOCATION PLAN

BATTERY PARK CITY AUTHORITY
NORTH/WEST BATTERY PARK
RESILIENCY PROJECT
LOWER MANHATTAN, NEW YORK

PROJECT NUMBER: 20-1152
SCALE: NTS
DATE: 2/8/2022
FIGURE: 4

LEGEND

00-00 PCB SAMPLE LOCATION - PCB FREE OR PCB REGULATED (NOT REGULATED BY TSCA OR THE USEPA)

NO.	DESCRIPTION: REVISIONS	DATE:	BY:	APR:

DESIGNED BY: MB
CHECKED BY: MS
RELEASED BY: GG

MATRIXNEWORLD
Engineering Progress
Matrix New World Engineering, Land Surveying and Landscape Architecture, P.C.
26 Columbia Turnpike
Florham Park, New Jersey 07932
WBE / DBE / SBE
Tel: 973-240-1800
Fax: 973-240-1818
www.matrixneworld.com
STATE OF NEW YORK CERTIFICATE OF AUTHORIZATION No. 17-082661

COMPOSITE PCB SAMPLE LOCATION PLAN

BATTERY PARK CITY AUTHORITY
NORTH/WEST BATTERY PARK
RESILIENCY PROJECT
LOWER MANHATTAN, NEW YORK

PROJECT NUMBER: 20-1152
SCALE: NTS
DATE: 2/8/2022
FIGURE: 5

LEGEND

00-00 PCB SAMPLE LOCATION - PCB FREE OR PCB REGULATED (NOT REGULATED BY TSCA OR THE USEPA)

NO.	DESCRIPTION: REVISIONS	DATE:	BY:	APR:

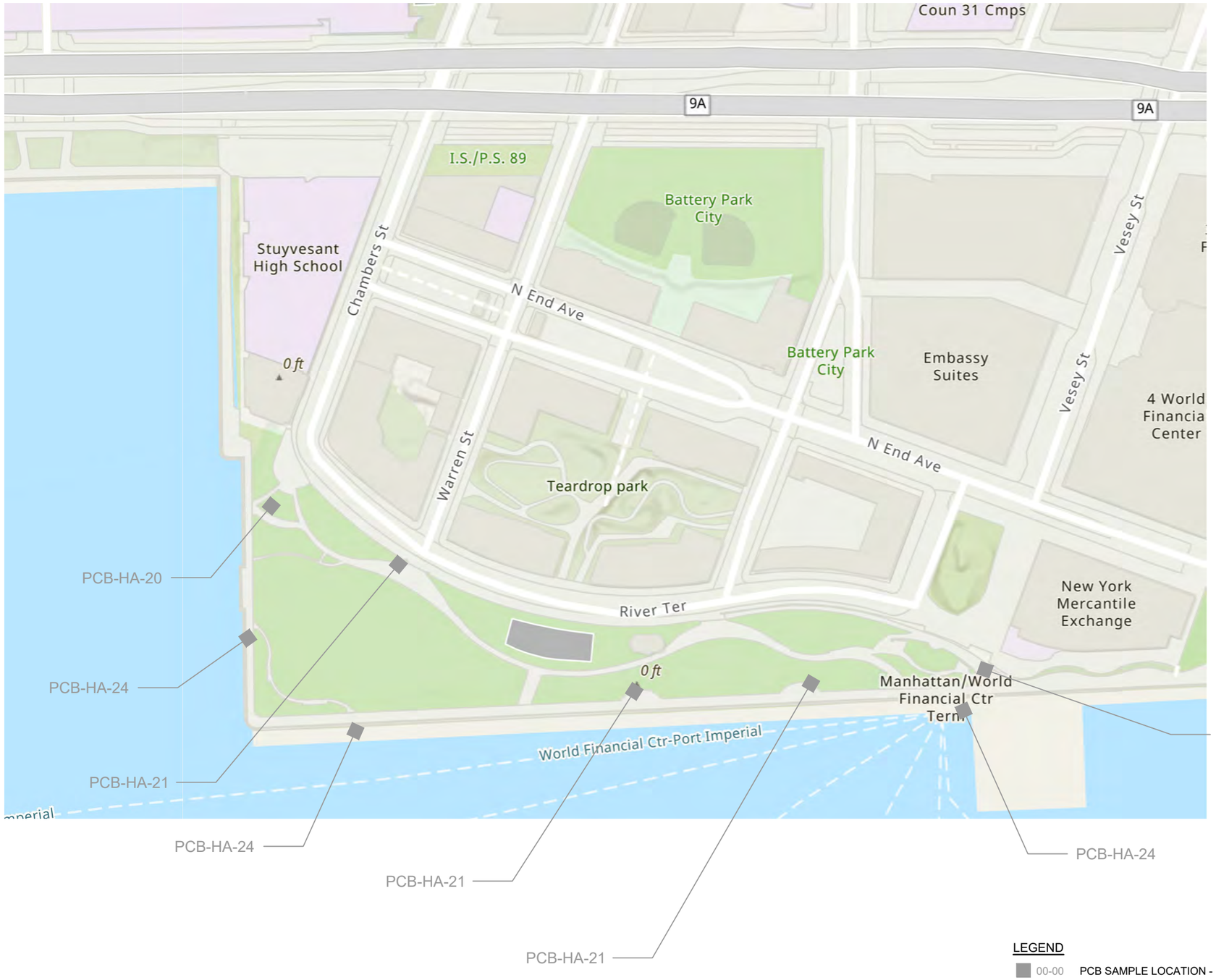
DESIGNED BY: MB
CHECKED BY: MS
RELEASED BY: GG

MATRIXNEWORLD
Engineering Progress
Matrix New World Engineering, Land Surveying and Landscape Architecture, P.C.
26 Columbia Turnpike
Florham Park, New Jersey 07932
WBE / DBE / SBE
Tel: 973-240-1800
Fax: 973-240-1818
www.matrixneworld.com
STATE OF NEW YORK CERTIFICATE OF AUTHORIZATION No. 17-082661

COMPOSITE PCB SAMPLE LOCATION PLAN

BATTERY PARK CITY AUTHORITY
NORTH/WEST BATTERY PARK
RESILIENCY PROJECT
LOWER MANHATTAN, NEW YORK

PROJECT NUMBER: 20-1152
SCALE: NTS
DATE: 2/8/2022
FIGURE: 6



LEGEND

00-00 PCB SAMPLE LOCATION - PCB FREE OR PCB REGULATED (NOT REGULATED BY TSCA OR THE USEPA)

NO.	DESCRIPTION: REVISIONS	DATE:	BY:	APR:

DESIGNED BY: MB
CHECKED BY: MS
RELEASED BY: GG

MATRIXNEWORLD
Engineering Progress
Matrix New World Engineering, Land Surveying and Landscape Architecture, P.C.
26 Columbia Turnpike
Florham Park, New Jersey 07932
WBE / DBE / SBE
STATE OF NEW YORK CERTIFICATE OF AUTHORIZATION No. 17-082661
Tel: 973-240-1800
Fax: 973-240-1818
www.matrixnewworld.com

COMPOSITE PCB SAMPLE LOCATION PLAN

BATTERY PARK CITY AUTHORITY
NORTH/WEST BATTERY PARK
RESILIENCY PROJECT
LOWER MANHATTAN, NEW YORK

PROJECT NUMBER: 20-1152
SCALE: NTS
DATE: 2/8/2022
FIGURE: 7

APPENDIX A
PHOTOGRAPHIC LOG

Matrix New World Engineering, Land Surveying,
and Landscape Architecture, PC
333 West 39th Street, Suite 202
New York, New York 10018
973.240-1800 Fax 973.240.1818
www.matrixneworld.com WBE

MATRIXNEWORLD
Engineering Progress

PHOTO LOG

Site: North/West Battery Park City Resiliency Project

Date: July 19, 2021 & January 15, 2022

Matrix Job No.: 20-1152

Photographer(s): M. Sheldon & M. Bonafede

PHOTO 1

LOCATION: South Cove Park North of Museum of Jewish Heritage

MATERIAL: Building Retention Wall Mortar

SAMPLE ID: HA-01

PHOTO 2

LOCATION: South Cove Park North of Museum of Jewish Heritage

MATERIAL: Building Retention Wall Caulk

SAMPLE ID: HA-02

PHOTO 3

LOCATION: South Cove Park Between 2nd and 3rd

MATERIAL: Retention Wall Mortar

SAMPLE ID: HA-04

PHOTO 4

LOCATION: South Cove Park Between 2nd and 3rd

MATERIAL: Building/Retention Wall Joint

SAMPLE ID: HA-05

MATRIXNEWORLD
Engineering Progress

PHOTO LOG

Site: North/West Battery Park City Resiliency Project

Date: July 19, 2021 & January 15, 2022

Matrix Job No.: 20-1152

Photographer(s): M. Sheldon & M. Bonafede

PHOTO 5

LOCATION: South Cove Park Between 2nd and 3rd

MATERIAL: Fibrous Expansion Joint

SAMPLE ID: HA-06

PHOTO 6

LOCATION: South Cove Park Between 2nd and 3rd

MATERIAL: Caulk to Retention Wall

SAMPLE ID: HA-07

PHOTO 7

LOCATION: South Cove Park Lower Wall by 3rd Pl

MATERIAL: Caulk to Lower Retention Wall

SAMPLE ID: HA-08

PHOTO 8

LOCATION: South Cove Park Esplanade Plaza Adjacent to Thames Street

MATERIAL: Retention Wall Caulk

SAMPLE ID: HA-09

MATRIXNEWORLD
Engineering Progress

PHOTO LOG

Site: North/West Battery Park City Resiliency Project

Date: July 19, 2021 & January 15, 2022

Matrix Job No.: 20-1152

Photographer(s): M. Sheldon & M. Bonafede

PHOTO 09

LOCATION: South Cove Park Plaza by Rector Pl.

MATERIAL: Caulk to Plaza

SAMPLE ID: HA-10

PHOTO 10

LOCATION: South Cove Park Esplanade Plaza South of Marina

MATERIAL: Retention Wall Caulk

SAMPLE ID: HA-12

PHOTO 11

LOCATION: Outfall #NCM-832

MATERIAL: Caulk to Outfall Frame

SAMPLE ID: HA-13

PHOTO 12

LOCATION: By Outfall #NCM-832 and Liberty Street

MATERIAL: Mortar to Planter

SAMPLE ID: HA-14

MATRIXNEWORLD
Engineering Progress

PHOTO LOG

Site: North/West Battery Park City Resiliency Project

Date: July 19, 2021 & January 15, 2022

Matrix Job No.: 20-1152

Photographer(s): M. Sheldon & M. Bonafede

PHOTO 13

LOCATION: Outfall #NCM-832 Towards West Street

MATERIAL: Expansion Joint to Outfall Frame

SAMPLE ID: HA-15

PHOTO 14

LOCATION: Battery Park Esplanade Adjacent to Liberty Street

MATERIAL: Caulk to Bench

SAMPLE ID: HA-17

PHOTO 15

LOCATION: Rockefeller Park

MATERIAL: Mortar to Stone Wall

SAMPLE ID: HA-18

PHOTO 16

LOCATION: Rockefeller Park Along River Terrace

MATERIAL: Mortar to Stone Wall Short Wall

SAMPLE ID: HA-19

MATRIXNEWORLD
Engineering Progress

PHOTO LOG

Site: North/West Battery Park City Resiliency Project

Date: July 19, 2021 & January 15, 2022

Matrix Job No.: 20-1152

Photographer(s): M. Sheldon & M. Bonafede

PHOTO 17

LOCATION: Rockefeller Park Along River Terrace

MATERIAL: Caulk to Stairs

SAMPLE ID: HA-20

PHOTO 18

LOCATION: Rockefeller Park Adjacent to Murray Street

MATERIAL: Coping Stone Seam Caulk to Wall

SAMPLE ID: HA-21

PHOTO 19

LOCATION: Rockefeller Park Adjacent to Vesey Street

MATERIAL: Mortar to Stairs

SAMPLE ID: HA-22

PHOTO 20

LOCATION: Rockefeller Park Adjacent to Lilly Pond

MATERIAL: Mortar to Curb

SAMPLE ID: HA-23

MATRIXNEWORLD
Engineering Progress

PHOTO LOG

Site: North/West Battery Park City Resiliency Project Date: July 19, 2021 & January 15, 2022

Matrix Job No.: 20-1152 Photographer(s): M. Sheldon & M. Bonafede

PHOTO 21

LOCATION: Rockefeller Park Adjacent to Vesey Street

MATERIAL: Caulk to Wall

SAMPLE ID: HA-24

APPENDIX B
LABORATORY DATA PACKAGE(S)

METRO ANALYTICAL LABORATORIES
255 West 36th St., Suite #101
New York, NY 10018
p: (212) 695-0165 f: (212) 695-0183

ASBESTOS ANALYSIS of BULK SAMPLE by POLARIZED LIGHT MICROSCOPY and TRANSMISSION ELECTRON MICROSCOPY

Client:	**Matrix New World Engineering**	Contract:	**AECOM USA, Inc.**	**Metro Lab ID #:**	**B22010356**
Address:	333 West 39th Street Suite 202	Client Job #:	**20-1152**		
	New York NY 10018	Location:	**Battery Park City Resiliency Project**		
	P: (973) 240-1800 F:		**NY** **NY**	Sample Received:	01/15/2022
Contact:	**Tyler Gilmore**	Sampled By:	M.S., M.B.	PLM Analysis Date:	01/16/2022
	M: (732) 610-4789	Sampled Date:	01/15/2022	TEM Analysis Date:	01/17/2022
	E: tgilmore@mnwe.com	Turnaround Time:	3-5 days	Reported By:	Turiana Moreira
				Report Date:	01/17/2022

Summary of Analysis

LAB ID #	Client Sample #	Sample Description	Test	Fibrous Material	Non-Fibrous Material	Asbestos	Total Asbestos
1	01-01	Grey Homogenous Granular EXT. - S. COVE PARK N. OF JEWISH MUSEUM - BLDG RETENTION WALL MTR	NY ELAP 198.1 NY ELAP 198.6 NY ELAP 198.4		100% Non-Fibrous	None Detected	
2	01-02	Grey Homogenous Granular EXT. - S. COVE PARK N. OF JEWISH MUSEUM - BLDG RETENTION WALL MTR	NY ELAP 198.1 NY ELAP 198.6 NY ELAP 198.4		100% Non-Fibrous	None Detected	
3	02-01	Grey Homogenous NOB EXT. - S. COVE PARK N. OF JEWISH MUSEUM - BLDG RETENTION WALL CLK	NY ELAP 198.1 NY ELAP 198.6 NY ELAP 198.4			Inconclusive None Detected	
4	02-02	Grey Homogenous NOB EXT. - S. COVE PARK N. OF JEWISH MUSEUM - BLDG RETENTION WALL CLK	NY ELAP 198.1 NY ELAP 198.6 NY ELAP 198.4			Inconclusive None Detected	
5	04-01	Grey Homogenous Granular EXT. - SOUTH COVE PARK BETWEEN 2ND & 3RD - RETENTION MALL MORTAR	NY ELAP 198.1 NY ELAP 198.6 NY ELAP 198.4		100% Non-Fibrous	None Detected	
6	04-02	Grey Homogenous Granular EXT. - SOUTH COVE PARK BETWEEN 2ND & 3RD - RETENTION MALL MORTAR	NY ELAP 198.1 NY ELAP 198.6 NY ELAP 198.4		100% Non-Fibrous	None Detected	
7	05-01	Grey Homogenous NOB EXT. - SOUTH COVE PARK BETWEEN 2ND & 3RD - BLDG / RETENTION WALL JOINT	NY ELAP 198.1 NY ELAP 198.6 NY ELAP 198.4			Inconclusive None Detected	
8	05-02	Grey Homogenous NOB EXT. - SOUTH COVE PARK BETWEEN 2ND & 3RD - BLDG / RETENTION WALL JOINT	NY ELAP 198.1 NY ELAP 198.6 NY ELAP 198.4			Inconclusive None Detected	
9	06-01	Brown Homogenous NOB EXT. - SOUTH COVE PARK BETWEEN 2ND & 3RD - FIBROUS EXPANSION JOINT	NY ELAP 198.1 NY ELAP 198.6 NY ELAP 198.4			Inconclusive None Detected	
10	06-02	Brown Homogenous NOB EXT. - SOUTH COVE PARK BETWEEN 2ND & 3RD - FIBROUS EXPANSION JOINT	NY ELAP 198.1 NY ELAP 198.6 NY ELAP 198.4			Inconclusive None Detected	

Comments

Equipment: PLM SCOPE Nikon Optiphot-2
TEM SCOPE #1 - Hitachi H-600

Zlatan Dimitrijevic
Laboratory Director

Reda Abdelmalak
PLM Analyst

Zlatan Dimitrijevic
TEM Analyst

NYS ELAP ID # 12003

NVLAP Lab Code 500081-0

METRO ANALYTICAL LABORATORIES
255 West 36th St., Suite #101
New York, NY 10018
p: (212) 695-0165 f: (212) 695-0183

ASBESTOS ANALYSIS of BULK SAMPLE by POLARIZED LIGHT MICROSCOPY and TRANSMISSION ELECTRON MICROSCOPY

Client:	**Matrix New World Engineering**	Contract:	**AECOM USA, Inc.**	**Metro Lab ID #:**	**B22010356**
Address:	333 West 39th Street Suite 202	Client Job #:	**20-1152**		
	New York NY 10018	Location:	**Battery Park City Resiliency Project**		
	P: (973) 240-1800 F:		**NY** **NY**	Sample Received:	01/15/2022
Contact:	**Tyler Gilmore**	Sampled By:	M.S., M.B.	PLM Analysis Date:	01/16/2022
	M: (732) 610-4789	Sampled Date:	01/15/2022	TEM Analysis Date:	01/17/2022
	E: tgilmore@mnwe.com	Turnaround Time:	3-5 days	Reported By:	Turiana Moreira
				Report Date:	01/17/2022

Summary of Analysis

LAB ID #	Client Sample #	Sample Description	Test	Fibrous Material	Non-Fibrous Material	Asbestos		Total Asbestos
11	07-01	Grey Homogenous NOB EXT. - SOUTH COVE PARK BETWEEN 2ND & 3RD - CAULK TO RETENTION WALL	NY ELAP 198.1 NY ELAP 198.6 NY ELAP 198.4			 Inconclusive 	 None Detected None Detected	
12	07-02	Grey Homogenous NOB EXT. - SOUTH COVE PARK BETWEEN 2ND & 3RD - CAULK TO RETENTION WALL	NY ELAP 198.1 NY ELAP 198.6 NY ELAP 198.4			 Inconclusive 	 None Detected None Detected	
13	08-01	Black Homogenous NOB EXT. - SOUTH COVE PARK COVER WALL BY 3RD - CLK TO LWR RETENTION WALL	NY ELAP 198.1 NY ELAP 198.6 NY ELAP 198.4			 Inconclusive 	 None Detected None Detected	
14	08-02	Black Homogenous NOB EXT. - SOUTH COVE PARK COVER WALL BY 3RD - CLK TO LWR RETENTION WALL	NY ELAP 198.1 NY ELAP 198.6 NY ELAP 198.4			 Inconclusive 	 None Detected None Detected	
15	09-01	Black Homogenous NOB EXT. - S. COVE PARK ESPLANADE - ADJ TO THAMES ST - RETENTION WALL CAULK	NY ELAP 198.1 NY ELAP 198.6 NY ELAP 198.4			 Inconclusive 	 None Detected None Detected	
16	09-02	Black Homogenous NOB EXT. - S. COVE PARK ESPLANADE - ADJ TO RECTOR ST - RETENTION WALL CAULK	NY ELAP 198.1 NY ELAP 198.6 NY ELAP 198.4			 Inconclusive 	 None Detected None Detected	
17	10-01	Grey Homogenous NOB EXT. - SOUTH COVE PARK ESPLANADE PLAZA BY RECTOR PLACE - CLK TO PLAZA	NY ELAP 198.1 NY ELAP 198.6 NY ELAP 198.4			 Inconclusive 	 None Detected None Detected	
18	10-02	Grey Homogenous NOB EXT. - SOUTH COVE PARK ESPLANADE PLAZA BY RECTOR PLACE - CLK TO PLAZA	NY ELAP 198.1 NY ELAP 198.6 NY ELAP 198.4			 Inconclusive 	 None Detected None Detected	
19	12-01	Grey Homogenous NOB EXT. - S. COVE PARK ESPLANADE PLAZA S. OF MARINA - RETENTION WALL CAULK	NY ELAP 198.1 NY ELAP 198.6 NY ELAP 198.4			 Inconclusive 	 None Detected None Detected	
20	12-02	Grey Homogenous NOB EXT. - S. COVE PARK ESPLANADE PLAZA S. OF MARINA - RETENTION WALL CAULK	NY ELAP 198.1 NY ELAP 198.6 NY ELAP 198.4			 Inconclusive 	 None Detected None Detected	

Comments

Equipment: PLM SCOPE Nikon Optiphot-2
TEM SCOPE #1 - Hitachi H-600

Zlatan Dimitrijevic
Laboratory Director

Reda Abdelmalak
PLM Analyst

Zlatan Dimitrijevic
TEM Analyst

NYS ELAP ID # 12003

NVLAP Lab Code 500081-0

METRO ANALYTICAL LABORATORIES
255 West 36th St., Suite #101
New York, NY 10018
p: (212) 695-0165 f: (212) 695-0183

ASBESTOS ANALYSIS of BULK SAMPLE by POLARIZED LIGHT MICROSCOPY and TRANSMISSION ELECTRON MICROSCOPY

Client:	**Matrix New World Engineering**	Contract:	**AECOM USA, Inc.**	**Metro Lab ID #:**	**B22010356**
Address:	333 West 39th Street Suite 202	Client Job #:	**20-1152**		
	New York NY 10018	Location:	**Battery Park City Resiliency Project**		
	P: (973) 240-1800 F:		**NY** **NY**	Sample Received:	01/15/2022
Contact:	**Tyler Gilmore**	Sampled By:	M.S., M.B.	PLM Analysis Date:	01/16/2022
	M: (732) 610-4789	Sampled Date:	01/15/2022	TEM Analysis Date:	01/17/2022
	E: tgilmore@mnwe.com	Turnaround Time:	3-5 days	Reported By:	Turiana Moreira
				Report Date:	01/17/2022

Summary of Analysis

LAB ID #	Client Sample #	Sample Description	Test	Fibrous Material	Non-Fibrous Material	Asbestos		Total Asbestos
21	13-01	Grey Homogenous NOB EXT. - OUTFALL # NCM-832 - CAULK TO OUTFALL FRAME	NY ELAP 198.1					
			NY ELAP 198.6			Inconclusive	None Detected	
			NY ELAP 198.4				None Detected	
22	13-02	Grey Homogenous NOB EXT. - OUTFALL # NCM-832 - CAULK TO OUTFALL FRAME	NY ELAP 198.1					
			NY ELAP 198.6			Inconclusive	None Detected	
			NY ELAP 198.4				None Detected	
23	14-01	Grey Homogenous Granular EXT. - BY OUTFALL # NCM-832 / LIBERTY ST - MORTAR TO PLANTER	NY ELAP 198.1		100% Non-Fibrous		None Detected	
			NY ELAP 198.6					
			NY ELAP 198.4					
24	14-02	Grey Homogenous Granular EXT. - BY OUTFALL # NCM-832 / LIBERTY ST - MORTAR TO PLANTER	NY ELAP 198.1		100% Non-Fibrous		None Detected	
			NY ELAP 198.6					
			NY ELAP 198.4					
25	15-01	Black Homogenous NOB EXT. - OUTFALL # NCM-832 - TOWARDS W. ST. - EXPANSION JNT TO OUTFALL FRAME	NY ELAP 198.1					
			NY ELAP 198.6			Inconclusive	None Detected	
			NY ELAP 198.4				None Detected	
26	15-02	Black Homogenous NOB EXT. - OUTFALL # NCM-832 - TOWARDS W. ST. - EXPANSION JNT TO OUTFALL FRAME	NY ELAP 198.1					
			NY ELAP 198.6			Inconclusive	None Detected	
			NY ELAP 198.4				None Detected	
27	17-01	Grey Homogenous NOB EXT. - BATTERY PARK ESPLANADE ADJ TO LIBERY STREET - CAULK TO BENCH	NY ELAP 198.1					
			NY ELAP 198.6			Inconclusive	None Detected	
			NY ELAP 198.4				None Detected	
28	17-02	Grey Homogenous NOB EXT. - BATTERY PARK ESPLANADE ADJ TO LIBERY STREET - CAULK TO BENCH	NY ELAP 198.1					
			NY ELAP 198.6			Inconclusive	None Detected	
			NY ELAP 198.4				None Detected	
29	18-01	Grey Homogenous Granular EXT. - ROCKAFELLER PARK ALONG RIVER TER. - MORTAR TO STONE WALL	NY ELAP 198.1		100% Non-Fibrous		None Detected	
			NY ELAP 198.6					
			NY ELAP 198.4					
30	18-02	Grey Homogenous Granular EXT. - ROCKAFELLER PARK BY MURRAY ST. - MORTAR TO STONE WALL	NY ELAP 198.1		100% Non-Fibrous		None Detected	
			NY ELAP 198.6					
			NY ELAP 198.4					

Comments

Equipment: PLM SCOPE Nikon Optiphot-2
TEM SCOPE #1 - Hitachi H-600

Zlatan Dimitrijevic
Laboratory Director

Reda Abdelmalak
PLM Analyst

Zlatan Dimitrijevic
TEM Analyst

NYS ELAP ID # 12003

NVLAP Lab Code 500081-0

METRO ANALYTICAL LABORATORIES
255 West 36th St., Suite #101
New York, NY 10018
p: (212) 695-0165 f: (212) 695-0183

ASBESTOS ANALYSIS of BULK SAMPLE by POLARIZED LIGHT MICROSCOPY and TRANSMISSION ELECTRON MICROSCOPY

Client:	**Matrix New World Engineering**	Contract:	**AECOM USA, Inc.**	**Metro Lab ID #:**	**B22010356**
Address:	333 West 39th Street Suite 202	Client Job #:	**20-1152**		
	New York NY 10018	Location:	**Battery Park City Resiliency Project**		
	P: (973) 240-1800 F:		**NY** **NY**	Sample Received:	01/15/2022
Contact:	**Tyler Gilmore**	Sampled By:	M.S., M.B.	PLM Analysis Date:	01/16/2022
	M: (732) 610-4789	Sampled Date:	01/15/2022	TEM Analysis Date:	01/17/2022
	E: tgilmore@mnwe.com	Turnaround Time:	3-5 days	Reported By:	Turiana Moreira
				Report Date:	01/17/2022

Summary of Analysis

LAB ID #	Client Sample #	Sample Description	Test	Fibrous Material	Non-Fibrous Material	Asbestos	Total Asbestos
31	19-01	Grey Homogenous Granular EXT. - ROCKAFELLER PK ALONG RIVER TER. - MRTR TO STN WALL - SHORT WALL	NY ELAP 198.1 NY ELAP 198.6 NY ELAP 198.4		100% Non-Fibrous	None Detected	
32	19-02	Grey Homogenous Granular EXT. - ROCKAFELLER PK ALONG RIVER TER. - MRTR TO STN WALL - SHORT WALL	NY ELAP 198.1 NY ELAP 198.6 NY ELAP 198.4		100% Non-Fibrous	None Detected	
33	20-01	Black Homogenous NOB EXT. - ROCKAFELLER PARK ALONG RIVER TER. - CAULK TO STAIRS	NY ELAP 198.1 NY ELAP 198.6 NY ELAP 198.4			Inconclusive None Detected	
34	20-02	Black Homogenous NOB EXT. - ROCKAFELLER PARK ALONG RIVER TER. - CAULK TO STAIRS	NY ELAP 198.1 NY ELAP 198.6 NY ELAP 198.4			Inconclusive None Detected	
35	21-01	Grey Homogenous NOB EXT. - ROCKAFELLER PK ADJ TO MURRAY ST. - CLK TO WALL - CPNG STN SEAM	NY ELAP 198.1 NY ELAP 198.6 NY ELAP 198.4			Inconclusive None Detected	
36	21-02	Grey Homogenous NOB EXT. - ROCKAFELLER PK ADJ TO WARREN ST. - CLK TO WALL - CPNG STN SEAM	NY ELAP 198.1 NY ELAP 198.6 NY ELAP 198.4			Inconclusive None Detected	
37	22-01	Grey Homogenous Granular EXT. - ROCKAFELLER PARK ADJACENT TO VESEY STREET - MORTAR TO STAIRS	NY ELAP 198.1 NY ELAP 198.6 NY ELAP 198.4		100% Non-Fibrous	None Detected	
38	22-02	Grey Homogenous Granular EXT. - ROCKAFELLER PARK ADJACENT TO VESEY STREET - MORTAR TO STAIRS	NY ELAP 198.1 NY ELAP 198.6 NY ELAP 198.4		100% Non-Fibrous	None Detected	
39	23-01	Grey Homogenous Granular EXT. - ROCKAFELLER PARK ADJACENT TO LILLY POND - MORTAR TO CURB	NY ELAP 198.1 NY ELAP 198.6 NY ELAP 198.4		100% Non-Fibrous	None Detected	
40	23-02	Grey Homogenous Granular EXT. - ROCKAFELLER PARK ADJACENT TO SOUTH MEDOW PARK - MORTAR TO CURB	NY ELAP 198.1 NY ELAP 198.6 NY ELAP 198.4		100% Non-Fibrous	None Detected	

Comments

Equipment: PLM SCOPE Nikon Optiphot-2
TEM SCOPE #1 - Hitachi H-600

Zlatan Dimitrijevic
Laboratory Director

Reda Abdelmalak
PLM Analyst

Zlatan Dimitrijevic
TEM Analyst

NYS ELAP ID # 12003

NVLAP Lab Code 500081-0

METRO ANALYTICAL LABORATORIES
255 West 36th St., Suite #101
New York, NY 10018
p: (212) 695-0165 f: (212) 695-0183

ASBESTOS ANALYSIS of BULK SAMPLE by POLARIZED LIGHT MICROSCOPY and TRANSMISSION ELECTRON MICROSCOPY

Client:	**Matrix New World Engineering**	Contract:	**AECOM USA, Inc.**	**Metro Lab ID #:**	**B22010356**
Address:	333 West 39th Street Suite 202	Client Job #:	**20-1152**		
	New York NY 10018	Location:	**Battery Park City Resiliency Project**		
	P: (973) 240-1800 F:		**NY** **NY**	Sample Received:	01/15/2022
Contact:	**Tyler Gilmore**	Sampled By:	M.S., M.B.	PLM Analysis Date:	01/16/2022
	M: (732) 610-4789	Sampled Date:	01/15/2022	TEM Analysis Date:	01/17/2022
	E: tgilmore@mnwe.com	Turnaround Time:	3-5 days	Reported By:	Turiana Moreira
				Report Date:	01/17/2022

Summary of Analysis

LAB ID #	Client Sample #	Sample Description	Test	Fibrous Material	Non-Fibrous Material	Asbestos		Total Asbestos
41	24-01	Black Homogenous NOB EXT. - ROCKEFELLAR PARK ADJACENT TO VESEY STREET - CAULK TO WALL	NY ELAP 198.1					
			NY ELAP 198.6			Inconclusive	None Detected	
			NY ELAP 198.4				None Detected	
42	24-02	Black Homogenous NOB EXT. - ROCKEFELLAR PARK ADJACENT TO NORTH ESPLANADE - CAULK TO WALL	NY ELAP 198.1					
			NY ELAP 198.6			Inconclusive	None Detected	
			NY ELAP 198.4				None Detected	

Comments

Equipment: PLM SCOPE Nikon Optiphot-2
TEM SCOPE #1 - Hitachi H-600

Zlatan Dimitrijevic
Laboratory Director

Reda Abdelmalak
PLM Analyst

Zlatan Dimitrijevic
TEM Analyst

NYS ELAP ID # 12003

NVLAP Lab Code 500081-0

METRO ANALYTICAL LABORATORIES
255 West 36th St., Suite #101
New York, NY 10018
p: (212) 695-0165 f: (212) 695-0183

Report Notes

General Notes and Disclaimers

- The samples analyzed in this report were not collected by this laboratory - they were received from the client, or an agent of the client, in good condition, unless otherwise noted.
- All results are calculated based on client-provided samples and / or measurements and fall within the acceptable Quality Control limits, unless otherwise noted.
- The report shall not be reproduced, except in full, without the written approval of the laboratory.
- This report relates only to the samples tested. It may not be used by the client to claim project endorsement by NVLAP, NYS ELAP, or any other government agency.
- All samples will be properly disposed of after 60 days.
- Quality Control data (including 95% confidence limits, laboratory / analysis accuracy and precision) is available upon request.

Notes Regarding Asbestos Testing

- Air Sample Analysis by Phase Contrast Microscopy (PCM) adheres to Method NIOSH-7400. Results < 7 fibers / mm^2 are statistically insignificant.
- Percentages are calculated using the EPA equivalent Stratified Point-Count Method.
- Bulk Sample Analysis by Polarized Light Microscopy (PLM) Friable adheres to EPA/600/M4-082-20 or NYS ELAP 198.1.
- Bulk Sample Analysis by Polarized Light Microscopy (PLM) NOB adheres to NYS ELAP 198.6. This method does not remove vermiculite and may underestimate the level of asbestos present in a sample containing greater than 10% vermiculite.
- All inhomogeneous layers of the bulk samples were analyzed separately.
- Analytical results are sometimes based on the residue percentage(s) provided by the client along with the filters. Trace denotes asbestos detected at < 1%. Smiliarly, samples below quantitation limit (RL) are reported with a less than sign (<).
- Polarized Light Microscopy is not consistently reliable in detecting asbestos in floor coverings and similar non-friable organically bound materials. Quantitative TEM is currently the only method that can be used to determine if this material can be considered or treated as non-asbestos containing.
- Bulk Sample Analysis by Transmission Electron Microscopy (TEM) NOB adheres to NYS ELAP Method 198.4.
- Air Sample Analysis by Transmission Electron Microscopy (TEM) adheres to Method EPA CFR Part 763 Final Rule (AHERA).
- Air Sample Analysis by Transmission Electron Microscopy (TEM) Worksheets are available upon request.

MATRIX NEW WORLD
Engineering Progress

BULK SAMPLE DATA AND CHAIN OF CUSTODY FORM

Matrix New World Engineering, Land Surveyingand Landsape Architecture, PC
333 West 39th Street, Suite 202
New York, New York 10018

B22010356

PROJECT INFORMATION

Client:	AECOM USA, Inc.
Project Name:	Battery Park City Resiliency Project
Location:	Manhattan, NY
Date:	1/15/2022
Email Results to:	Hazmat.Labs@matrixneworld.com

Matrix Project No.: 20-1152

Requested Analysis

☑	NYS ELAP 198.1	☐	EPA/600/R-93
☑	NYS ELAP 198.2	☐	PLM EPA NOB-EPA/600/R-93
☑	NYS ELAP 198.6	☐	TEM EPA NOB - EPA 600/R-93
☐	NYS ELAP 198.8	☐	Other (specify)

Project Manager:	Matthew Sheldon
Investigator(s):	Michael Bonafede

Turn Around Time

☐ STAT ☐ 48 Hour ☐ 5 Day ☐ Other (specify)
☐ 12 Hour ☐ 72 Hour ☑ 1 Week

BULK SAMPLE INFORMATION

HA No.	Floor	Bulk Sample ID No.	Homogeneous Material	Material Type	Sample Location	Quantity (SF/LF/Units)	Asbestos Content	Analysis		
								PLM	PLM-NOB	TEM
01	Exterior	01-01	Building Retention Wall Mortar	Misc.	South cove Park North of Jewish Museum			X		
		01-02		Misc.				X		
02		02-01	Building Retention Wall Caulk	Misc.					X	X
		02-02		Misc.					X	X
~~03~~ Not Submitted		~~03-01~~	~~Water Piping Dope~~ Not Submitted	Misc.	Non Suspect Teflon	X				
		~~03-02~~		Misc.	X				X	
04		04-01	Retention Wall Mortar	Misc.	South cove park Between 2nd and 3rd			X		
		04-02		Misc.				X		
05		05-01	Building/Retention Wall Joint	Misc.	South Cove park				X	X
		05-02		Misc.					X	X
06		06-01	Fibrous Expansion Joint	Misc.	Between 2nd and 3rd plaza				X	X
		06-02		Misc.					X	X
07		07-01	Caulk to Retention Wall	Misc.					X	X
		07-02		Misc.					X	X

CHAIN OF CUSTODY

Relinquished By:		Date / Time:
I. Matt Sheldon	(Signature)	1/15/22
Matt Sheldon	(Print)	
II.	(Signature)	
Michael Bonafede	(Print)	

Received By:		Date / Time:
I.	(Signature)	1/15/22
Marian	(Print)	1252Pm
II.	(Signature)	
	(Print)	

Additional Notes:
* Stop at first positive for each homogeneous material as specified.
*Analyze by Layer. If PLM-NOB is Negative, Re-Analyze by TEM.
*Contact Project Manager Before Performing Method 198.8 unless otherwise specified.

MATRIX NEW WORLD
Engineering Progress

Matrix New World Engineering, Land Surveyingand Landsape Architecture, PC
333 West 39th Street, Suite 202
New York, New York 10018

BULK SAMPLE DATA AND CHAIN OF CUSTODY FORM

B2201035G

PROJECT INFORMATION

Client:	AECOM USA, Inc.
Project Name:	Battery Park City Resiliency Project
Location:	Manhattan, NY
Date:	1/15/2022
Email Results to:	Hazmat.Labs@matrixneworld.com

Matrix Project No.: 20-1152

Requested Analysis

X	NYS ELAP 198.1	☐	EPA/600/R-93
X	NYS ELAP 198.2	☐	PLM EPA NOB-EPA/600/R-93
X	NYS ELAP 198.6	☐	TEM EPA NOB - EPA 600/R-93
☐	NYS ELAP 198.8	☐	Other (specify)

Project Manager: Matthew Sheldon
Investigator(s): Michael Bonafede

Turn Around Time

☐ STAT ☐ 48 Hour ☐ 5 Day ☐ Other (specify)
☐ 12 Hour X 72 Hour ☐ 1 Week

BULK SAMPLE INFORMATION

HA No.	Floor	Bulk Sample ID No.	Homogeneous Material	Material Type	Sample Location	Quantity (SF/LF/Units)	Asbestos Content	Analysis: PLM	Analysis: PLM-NOB	Analysis: TEM
08	Exterior	08-01	Caulk to Lower Retention Wall	Misc.	South cove Park Esplanade — Lower wall by 3rd Plaza				X	X
		08-02		Misc.					X	X
09		09-01	Rentention Wall ~~Mortar~~ Caulk	Misc.	South cove Park Esplanade — Adjacent to Thames Street				X	X
		09-02		Misc.	Rector Place				X	X
10		10-01	Caulk to Plaza	Misc.	Plaza by Rector place				X	X
		10-02		Misc.					X	X
~~11~~		~~11-01~~	~~Building Façade Mortar~~ Not Submitted	Misc.				X		
		~~11-02~~		Misc.				X		
12		12-01	Retention Wall ~~Mortar~~ Caulk	Misc.	South cove park Esplanade Plaza — South of Marina			X		
		12-02		Misc.				X		
13		13-01	Caulk to Outfall frame	Misc.	Outfall # NCM-832				X	X
		13-02		Misc.					X	X
14		14-01	~~Caulk~~ to Planter Mortar	Misc.	By outfall NCM-832 / E. Berdy St			X		
		14-02		Misc.				X		

CHAIN OF CUSTODY

Relinquished By:		Date / Time:
I. Matt Sh	(Signature)	1/15/22
Matt Sheldt	(Print)	
II.	(Signature)	
Michael Bonafede	(Print)	

Received By:		Date / Time:
I.	(Signature	1/15/22
Marian	(Print	1252pm
II.	(Signature	
	(Print	

Additional Notes:
* Stop at first positive for each homogeneous material as specified.
*Analyze by Layer. If PLM-NOB is Negative, Re-Analyze by TEM.
*Contact Project Manager Before Performing Method 198.8 unless otherwise specified.

MATRIXNEWORLD
Engineering Progress

BULK SAMPLE DATA AND CHAIN OF CUSTODY FORM

Matrix New World Engineering, Land Surveyingand Landsape Architecture, PC
333 West 39th Street, Suite 202
New York, New York 10018

B2201035G

PROJECT INFORMATION

Client:	AECOM USA, Inc.
Project Name:	Battery Park City Resiliency Project
Location:	Manhattan, NY
Date:	1/15/2022
Email Results to:	Hazmat.Labs@matrixneworld.com

Matrix Project No.: 20-1152

Requested Analysis

- ☒ NYS ELAP 198.1 ☐ EPA/600/R-93
- ☒ NYS ELAP 198.2 ☐ PLM EPA NOB-EPA/600/R-93
- ☒ NYS ELAP 198.6 ☐ TEM EPA NOB - EPA 600/R-93
- ☐ NYS ELAP 198.8 ☐ Other (specify)

Project Manager: Matthew Sheldon
Investigator(s): Michael Bonafede

Turn Around Time

☐ STAT ☐ 48 Hour ☐ 5 Day ☐ Other (specify)
☐ 12 Hour ☐ 72 Hour ☒ 1 Week

BULK SAMPLE INFORMATION

HA No.	Floor	Bulk Sample ID No.	Homogeneous Material	Material Type	Sample Location	Quantity (SF/LF/Units)	Asbestos Content	Analysis		
								PLM	PLM-NOB	TEM
15	Exterior	15-01	Expansion Joint to Outfall frame	Misc.	Outfall # NCM-832 towards west St.				X	X
		15-02		Misc.	↓ ↓ ↓				X	X
~~16~~		~~16-01~~	~~Building Façade Mortar~~ Not Submitted	Misc.	X			X		
		~~16-02~~		Misc.				X		
17		17-01	Caulk to Bench	Misc.	Battery Park Esplanade adjacent to Liberty street				X	X
		17-02		Misc.	↓ ↓				X	X
18		18-01	Mortar to Stone Wall	Misc.	Rockefeller Park along River ter.			X		
		18-02		Misc.	by Murray St.			X		
19		19-01	Mortar to Stone Wall	Misc.	along River ter.			X		
		19-02	Short wall	Misc.	↓			X		
20		20-01	Caulk to Stairs	Misc.	↓				X	X
		20-02		Misc.	↓				X	X
21		21-01	Coping Stone Seam Caulk to Wall	Misc.	adjacent to Murray St.				X	X
		21-02		Misc.	↓ to warren St.				X	X

CHAIN OF CUSTODY

Relinquished By:		Date / Time:
I. Matt Sheldon	(Signature)	1/15/22
Matt Sheldon	(Print)	
II.	(Signature)	
Michael Bonafede	(Print)	

Received By:		Date / Time:
I.	(Signature)	1/15/22
Marran	(Print)	12:52pm
II.	(Signature)	
	(Print)	

Additional Notes:

* Stop at first positive for each homogeneous material as specified.
*Analyze by Layer. If PLM-NOB is Negative, Re-Analyze by TEM.
*Contact Project Manager Before Performing Method 198.8 unless otherwise specified.

MATRIXNEWORLD
Engineering Progress

Matrix New World Engineering, Land Surveyingand Landsape Architecture, PC
333 West 39th Street, Suite 202
New York, New York 10018

BULK SAMPLE DATA AND CHAIN OF CUSTODY FORM

B22010356

PROJECT INFORMATION

Client:	AECOM USA, Inc.
Project Name:	Battery Park City Resiliency Project
Location:	Manhattan, NY
Date:	1/15/2022
Email Results to:	Hazmat.Labs@matrixneworld.com

Matrix Project No.: 20-1152

Requested Analysis

- ☐ NYS ELAP 198.1 ☐ EPA/600/R-93
- ☐ NYS ELAP 198.2 ☐ PLM EPA NOB-EPA/600/R-93
- ☐ NYS ELAP 198.6 ☐ TEM EPA NOB - EPA 600/R-93
- ☐ NYS ELAP 198.8 ☐ Other (specify)

Project Manager: Matthew Sheldon
Investigator(s): Michael Bonafede

Turn Around Time

☐ STAT ☐ 48 Hour ☐ 5 Day ☐ Other (specify)
☐ 12 Hour ☐ 72 Hour ☒ 1 Week

BULK SAMPLE INFORMATION

HA No.	Floor	Bulk Sample ID No.	Homogeneous Material	Material Type	Sample Location	Quantity (SF/LF/Units)	Asbestos Content	Analysis		
								PLM	PLM-NOB	TEM
22	Exterior	22-01	Mortar to Stairs	Misc.	Rockefeller Park adjacent to Vesey Street			X		
		22-02		Misc.				X		
23		23-01	Mortar to Curb	Misc.	Lilly Pond			X		
		23-02		Misc.	South Meadow Park			X		
24		24-01	Caulk [redacted] to Wall	Misc.	Vesey Street			X		
		24-02		Misc.	North Esplanade			X		

CHAIN OF CUSTODY

Relinquished By:		Date / Time:
I. Matt Sheldon	(Signature)	1/15/22
Matt Sheldon	(Print)	
II.	(Signature)	
Michael Bonafede	(Print)	

Received By:		Date / Time:
I.	(Signature	1/15/22
Marran	(Print	1252pm
II.	(Signature	
	(Print	

Additional Notes:
* Stop at first positive for each homogeneous material as specified.
*Analyze by Layer. If PLM-NOB is Negative, Re-Analyze by TEM.
*Contact Project Manager Before Performing Method 198.8 unless otherwise specified.

EMSL Analytical, Inc.
200 Route 130 North, Cinnaminson, NJ 08077
Phone: (856) 303-2500 Fax: (856) 858-4571 Email: EnvChemistry2@emsl.com

Attn: **Matt Sheldon** 2/1/2022
Matrix New World Engineering
26 Columbia Turnpike
Florham Park, NJ 07932

Phone: (973) 240-1800
Fax: (973) 240-1818

The following analytical report covers the analysis performed on samples submitted to EMSL Analytical, Inc. on 1/18/2022. The results are tabulated on the attached data pages for the following client designated project:

Battery Park City Resiliency Project

The reference number for these samples is EMSL Order #012200767. Please use this reference when calling about these samples. If you have any questions, please do not hesitate to contact me at (856) 303-2500.

Approved By:

Phillip Worby, Environmental Chemistry
Laboratory Director

The test results contained within this report meet the requirements of NELAP and/or the specific certification program that is applicable, unless otherwise noted.
NELAP Certifications: NJ 03036, NY 10872, PA 68-00367, CA ELAP 1877

EMSL Analytical, Inc.
200 Route 130 North, Cinnaminson, NJ 08077
Phone/Fax: (856) 303-2500 / (856) 858-4571
http://www.EMSL.com EnvChemistry2@emsl.com

EMSL Order: 012200767
CustomerID: MATX53
CustomerPO: 20-1152
ProjectID:

Attn: **Matt Sheldon**
Matrix New World Engineering
26 Columbia Turnpike
Florham Park, NJ 07932

Phone: (973) 240-1800
Fax: (973) 240-1818
Received: 1/18/2022 09:00 AM

Project: **Battery Park City Resiliency Project**

Analytical Results

Client Sample Description PCB-HA-02
South cave park N. of Jewish Museum
Collected: 1/15/2022 ***Lab ID:*** *012200767-0001*

Method	*Parameter*	*Result*	*RL*	*Units*	*Prep Date & Analyst*		*Analysis Date & Analyst*	
GC-SVOA								
3540C/8082A	Aroclor-1016	ND D	0.97	mg/Kg	1/19/2022	PG	1/20/2022 00:00	PM
3540C/8082A	Aroclor-1221	ND D	0.97	mg/Kg	1/19/2022	PG	1/20/2022 00:00	PM
3540C/8082A	Aroclor-1232	ND D	0.97	mg/Kg	1/19/2022	PG	1/20/2022 00:00	PM
3540C/8082A	Aroclor-1242	ND D	0.97	mg/Kg	1/19/2022	PG	1/20/2022 00:00	PM
3540C/8082A	Aroclor-1248	ND D	0.97	mg/Kg	1/19/2022	PG	1/20/2022 00:00	PM
3540C/8082A	Aroclor-1254	ND D	0.97	mg/Kg	1/19/2022	PG	1/20/2022 00:00	PM
3540C/8082A	Aroclor-1260	ND D	0.97	mg/Kg	1/19/2022	PG	1/20/2022 00:00	PM
3540C/8082A	Aroclor-1262	ND D	0.97	mg/Kg	1/19/2022	PG	1/20/2022 00:00	PM
3540C/8082A	Aroclor-1268	ND D	0.97	mg/Kg	1/19/2022	PG	1/20/2022 00:00	PM

Client Sample Description PCB-HA-05
South cave park between 2nd + 3rd Pl
Collected: 1/15/2022 ***Lab ID:*** *012200767-0002*

Method	*Parameter*	*Result*	*RL*	*Units*	*Prep Date & Analyst*		*Analysis Date & Analyst*	
GC-SVOA								
3540C/8082A	Aroclor-1016	ND D	0.85	mg/Kg	1/19/2022	PG	1/20/2022 00:00	PM
3540C/8082A	Aroclor-1221	ND D	0.85	mg/Kg	1/19/2022	PG	1/20/2022 00:00	PM
3540C/8082A	Aroclor-1232	ND D	0.85	mg/Kg	1/19/2022	PG	1/20/2022 00:00	PM
3540C/8082A	Aroclor-1242	ND D	0.85	mg/Kg	1/19/2022	PG	1/20/2022 00:00	PM
3540C/8082A	Aroclor-1248	ND D	0.85	mg/Kg	1/19/2022	PG	1/20/2022 00:00	PM
3540C/8082A	Aroclor-1254	ND D	0.85	mg/Kg	1/19/2022	PG	1/20/2022 00:00	PM
3540C/8082A	Aroclor-1260	ND D	0.85	mg/Kg	1/19/2022	PG	1/20/2022 00:00	PM
3540C/8082A	Aroclor-1262	ND D	0.85	mg/Kg	1/19/2022	PG	1/20/2022 00:00	PM

EMSL Analytical, Inc.
200 Route 130 North, Cinnaminson, NJ 08077
Phone/Fax: (856) 303-2500 / (856) 858-4571
http://www.EMSL.com EnvChemistry2@emsl.com

EMSL Order:	012200767
CustomerID:	MATX53
CustomerPO:	20-1152
ProjectID:	

Attn: **Matt Sheldon**
Matrix New World Engineering
26 Columbia Turnpike
Florham Park, NJ 07932

Phone: (973) 240-1800
Fax: (973) 240-1818
Received: 1/18/2022 09:00 AM

Project: **Battery Park City Resiliency Project**

Analytical Results

Client Sample Description PCB-HA-05
South cave park between 2nd + 3rd Pl

Collected: 1/15/2022 ***Lab ID:*** *012200767-0002*

Method	*Parameter*	*Result*	*RL*	*Units*	*Prep Date & Analyst*		*Analysis Date & Analyst*	
GC-SVOA								
3540C/8082A	Aroclor-1268	ND D	0.85	mg/Kg	1/19/2022	PG	1/20/2022 00:00	PM

Client Sample Description PCB-HA-07
South cave park between 2nd + 3rd Pl

Collected: 1/15/2022 ***Lab ID:*** *012200767-0003*

Method	*Parameter*	*Result*	*RL*	*Units*	*Prep Date & Analyst*		*Analysis Date & Analyst*	
GC-SVOA								
3540C/8082A	Aroclor-1016	ND D	0.87	mg/Kg	1/19/2022	PG	1/20/2022 00:00	PM
3540C/8082A	Aroclor-1221	ND D	0.87	mg/Kg	1/19/2022	PG	1/20/2022 00:00	PM
3540C/8082A	Aroclor-1232	ND D	0.87	mg/Kg	1/19/2022	PG	1/20/2022 00:00	PM
3540C/8082A	Aroclor-1242	ND D	0.87	mg/Kg	1/19/2022	PG	1/20/2022 00:00	PM
3540C/8082A	Aroclor-1248	ND D	0.87	mg/Kg	1/19/2022	PG	1/20/2022 00:00	PM
3540C/8082A	Aroclor-1254	ND D	0.87	mg/Kg	1/19/2022	PG	1/20/2022 00:00	PM
3540C/8082A	Aroclor-1260	ND D	0.87	mg/Kg	1/19/2022	PG	1/20/2022 00:00	PM
3540C/8082A	Aroclor-1262	ND D	0.87	mg/Kg	1/19/2022	PG	1/20/2022 00:00	PM
3540C/8082A	Aroclor-1268	ND D	0.87	mg/Kg	1/19/2022	PG	1/20/2022 00:00	PM

Client Sample Description PCB-HA-08
South cave park lower wall by 3rd Pl

Collected: 1/15/2022 ***Lab ID:*** *012200767-0004*

Method	*Parameter*	*Result*	*RL*	*Units*	*Prep Date & Analyst*		*Analysis Date & Analyst*	
GC-SVOA								
3540C/8082A	Aroclor-1016	ND D	0.85	mg/Kg	1/19/2022	PG	1/20/2022 00:00	PM
3540C/8082A	Aroclor-1221	ND D	0.85	mg/Kg	1/19/2022	PG	1/20/2022 00:00	PM
3540C/8082A	Aroclor-1232	ND D	0.85	mg/Kg	1/19/2022	PG	1/20/2022 00:00	PM
3540C/8082A	Aroclor-1242	ND D	0.85	mg/Kg	1/19/2022	PG	1/20/2022 00:00	PM

EMSL Analytical, Inc.
200 Route 130 North, Cinnaminson, NJ 08077
Phone/Fax: (856) 303-2500 / (856) 858-4571
http://www.EMSL.com EnvChemistry2@emsl.com

EMSL Order:	012200767
CustomerID:	MATX53
CustomerPO:	20-1152
ProjectID:	

Attn: **Matt Sheldon**
Matrix New World Engineering
26 Columbia Turnpike
Florham Park, NJ 07932

Phone: (973) 240-1800
Fax: (973) 240-1818
Received: 1/18/2022 09:00 AM

Project: **Battery Park City Resiliency Project**

Analytical Results

Client Sample Description PCB-HA-08
South cave park lower wall by 3rd Pl
Collected: 1/15/2022 ***Lab ID:*** *012200767-0004*

Method	*Parameter*	*Result*	*RL*	*Units*	*Prep Date & Analyst*		*Analysis Date & Analyst*	
GC-SVOA								
3540C/8082A	Aroclor-1248	ND D	0.85	mg/Kg	1/19/2022	PG	1/20/2022 00:00	PM
3540C/8082A	Aroclor-1254	ND D	0.85	mg/Kg	1/19/2022	PG	1/20/2022 00:00	PM
3540C/8082A	Aroclor-1260	ND D	0.85	mg/Kg	1/19/2022	PG	1/20/2022 00:00	PM
3540C/8082A	Aroclor-1262	ND D	0.85	mg/Kg	1/19/2022	PG	1/20/2022 00:00	PM
3540C/8082A	Aroclor-1268	ND D	0.85	mg/Kg	1/19/2022	PG	1/20/2022 00:00	PM

Client Sample Description PCB-HA-10
South cave esplafide by rector Pl
Collected: 1/15/2022 ***Lab ID:*** *012200767-0005*

Method	*Parameter*	*Result*	*RL*	*Units*	*Prep Date & Analyst*		*Analysis Date & Analyst*	
GC-SVOA								
3540C/8082A	Aroclor-1016	ND D	0.95	mg/Kg	1/19/2022	PG	1/21/2022 00:00	PM
3540C/8082A	Aroclor-1221	ND D	0.95	mg/Kg	1/19/2022	PG	1/21/2022 00:00	PM
3540C/8082A	Aroclor-1232	ND D	0.95	mg/Kg	1/19/2022	PG	1/21/2022 00:00	PM
3540C/8082A	Aroclor-1242	ND D	0.95	mg/Kg	1/19/2022	PG	1/21/2022 00:00	PM
3540C/8082A	Aroclor-1248	ND D	0.95	mg/Kg	1/19/2022	PG	1/21/2022 00:00	PM
3540C/8082A	Aroclor-1254	ND D	0.95	mg/Kg	1/19/2022	PG	1/21/2022 00:00	PM
3540C/8082A	Aroclor-1260	ND D	0.95	mg/Kg	1/19/2022	PG	1/21/2022 00:00	PM
3540C/8082A	Aroclor-1262	ND D	0.95	mg/Kg	1/19/2022	PG	1/21/2022 00:00	PM
3540C/8082A	Aroclor-1268	ND D	0.95	mg/Kg	1/19/2022	PG	1/21/2022 00:00	PM

Client Sample Description PCB-HA-13
Outfall # NCA-832
Collected: 1/15/2022 ***Lab ID:*** *012200767-0006*

Method	*Parameter*	*Result*	*RL*	*Units*	*Prep Date & Analyst*	*Analysis Date & Analyst*
GC-SVOA						

EMSL Analytical, Inc.
200 Route 130 North, Cinnaminson, NJ 08077
Phone/Fax: (856) 303-2500 / (856) 858-4571
http://www.EMSL.com EnvChemistry2@emsl.com

EMSL Order:	012200767
CustomerID:	MATX53
CustomerPO:	20-1152
ProjectID:	

Attn: **Matt Sheldon**
Matrix New World Engineering
26 Columbia Turnpike
Florham Park, NJ 07932

Phone: (973) 240-1800
Fax: (973) 240-1818
Received: 1/18/2022 09:00 AM

Project: **Battery Park City Resiliency Project**

Analytical Results

Client Sample Description PCB-HA-13
Outfall # NCA-832 ***Collected:*** 1/15/2022 ***Lab ID:*** *012200767-0006*

Method	*Parameter*	*Result*	*RL*	*Units*	*Prep Date & Analyst*		*Analysis Date & Analyst*	
GC-SVOA								
3540C/8082A	Aroclor-1016	ND D	0.89	mg/Kg	1/19/2022	PG	1/21/2022 00:00	PM
3540C/8082A	Aroclor-1221	ND D	0.89	mg/Kg	1/19/2022	PG	1/21/2022 00:00	PM
3540C/8082A	Aroclor-1232	ND D	0.89	mg/Kg	1/19/2022	PG	1/21/2022 00:00	PM
3540C/8082A	Aroclor-1242	ND D	0.89	mg/Kg	1/19/2022	PG	1/21/2022 00:00	PM
3540C/8082A	Aroclor-1248	ND D	0.89	mg/Kg	1/19/2022	PG	1/21/2022 00:00	PM
3540C/8082A	Aroclor-1254	ND D	0.89	mg/Kg	1/19/2022	PG	1/21/2022 00:00	PM
3540C/8082A	Aroclor-1260	ND D	0.89	mg/Kg	1/19/2022	PG	1/21/2022 00:00	PM
3540C/8082A	Aroclor-1262	ND D	0.89	mg/Kg	1/19/2022	PG	1/21/2022 00:00	PM
3540C/8082A	Aroclor-1268	ND D	0.89	mg/Kg	1/19/2022	PG	1/21/2022 00:00	PM

Client Sample Description PCB-HA-15
Outfall # NCM-832 by west st. ***Collected:*** 1/15/2022 ***Lab ID:*** *012200767-0007*

Method	*Parameter*	*Result*	*RL*	*Units*	*Prep Date & Analyst*		*Analysis Date & Analyst*	
GC-SVOA								
3540C/8082A	Aroclor-1016	ND D	0.85	mg/Kg	1/19/2022	PG	1/21/2022 00:00	PM
3540C/8082A	Aroclor-1221	ND D	0.85	mg/Kg	1/19/2022	PG	1/21/2022 00:00	PM
3540C/8082A	Aroclor-1232	ND D	0.85	mg/Kg	1/19/2022	PG	1/21/2022 00:00	PM
3540C/8082A	Aroclor-1242	ND D	0.85	mg/Kg	1/19/2022	PG	1/21/2022 00:00	PM
3540C/8082A	Aroclor-1248	ND D	0.85	mg/Kg	1/19/2022	PG	1/21/2022 00:00	PM
3540C/8082A	Aroclor-1254	ND D	0.85	mg/Kg	1/19/2022	PG	1/21/2022 00:00	PM
3540C/8082A	Aroclor-1260	ND D	0.85	mg/Kg	1/19/2022	PG	1/21/2022 00:00	PM
3540C/8082A	Aroclor-1262	ND D	0.85	mg/Kg	1/19/2022	PG	1/21/2022 00:00	PM

EMSL Analytical, Inc.
200 Route 130 North, Cinnaminson, NJ 08077
Phone/Fax: (856) 303-2500 / (856) 858-4571
http://www.EMSL.com EnvChemistry2@emsl.com

EMSL Order:	012200767
CustomerID:	MATX53
CustomerPO:	20-1152
ProjectID:	

Attn: **Matt Sheldon**
Matrix New World Engineering
26 Columbia Turnpike
Florham Park, NJ 07932

Phone: (973) 240-1800
Fax: (973) 240-1818
Received: 1/18/2022 09:00 AM

Project: **Battery Park City Resiliency Project**

Analytical Results

Client Sample Description PCB-HA-15
Outfall # NCM-832 by west st.
Collected: 1/15/2022 ***Lab ID:*** *012200767-0007*

Method	*Parameter*	*Result*	*RL*	*Units*	*Prep Date & Analyst*		*Analysis Date & Analyst*	
GC-SVOA								
3540C/8082A	Aroclor-1268	ND D	0.85	mg/Kg	1/19/2022	PG	1/21/2022 00:00	PM

Client Sample Description PCB-HA-17
Battery park esplanfide adj. to liberty st.
Collected: 1/15/2022 ***Lab ID:*** *012200767-0008*

Method	*Parameter*	*Result*	*RL*	*Units*	*Prep Date & Analyst*		*Analysis Date & Analyst*	
GC-SVOA								
3540C/8082A	Aroclor-1016	ND D	0.90	mg/Kg	1/19/2022	PG	1/21/2022 00:00	PM
3540C/8082A	Aroclor-1221	ND D	0.90	mg/Kg	1/19/2022	PG	1/21/2022 00:00	PM
3540C/8082A	Aroclor-1232	ND D	0.90	mg/Kg	1/19/2022	PG	1/21/2022 00:00	PM
3540C/8082A	Aroclor-1242	ND D	0.90	mg/Kg	1/19/2022	PG	1/21/2022 00:00	PM
3540C/8082A	Aroclor-1248	ND D	0.90	mg/Kg	1/19/2022	PG	1/21/2022 00:00	PM
3540C/8082A	Aroclor-1254	ND D	0.90	mg/Kg	1/19/2022	PG	1/21/2022 00:00	PM
3540C/8082A	Aroclor-1260	ND D	0.90	mg/Kg	1/19/2022	PG	1/21/2022 00:00	PM
3540C/8082A	Aroclor-1262	ND D	0.90	mg/Kg	1/19/2022	PG	1/21/2022 00:00	PM
3540C/8082A	Aroclor-1268	ND D	0.90	mg/Kg	1/19/2022	PG	1/21/2022 00:00	PM

Client Sample Description PCB-HA-20
Rockefeller park along river terrace
Collected: 1/15/2022 ***Lab ID:*** *012200767-0009*

Method	*Parameter*	*Result*	*RL*	*Units*	*Prep Date & Analyst*		*Analysis Date & Analyst*	
GC-SVOA								
3540C/8082A	Aroclor-1016	ND D	0.95	mg/Kg	1/19/2022	PG	1/21/2022 00:00	PM
3540C/8082A	Aroclor-1221	ND D	0.95	mg/Kg	1/19/2022	PG	1/21/2022 00:00	PM
3540C/8082A	Aroclor-1232	ND D	0.95	mg/Kg	1/19/2022	PG	1/21/2022 00:00	PM
3540C/8082A	Aroclor-1242	ND D	0.95	mg/Kg	1/19/2022	PG	1/21/2022 00:00	PM

EMSL Analytical, Inc.
200 Route 130 North, Cinnaminson, NJ 08077
Phone/Fax: (856) 303-2500 / (856) 858-4571
http://www.EMSL.com EnvChemistry2@emsl.com

EMSL Order:	012200767
CustomerID:	MATX53
CustomerPO:	20-1152
ProjectID:	

Attn: **Matt Sheldon**
Matrix New World Engineering
26 Columbia Turnpike
Florham Park, NJ 07932

Phone: (973) 240-1800
Fax: (973) 240-1818
Received: 1/18/2022 09:00 AM

Project: **Battery Park City Resiliency Project**

Analytical Results

Client Sample Description PCB-HA-20
Rockefeller park along river terrace
Collected: 1/15/2022 ***Lab ID:*** *012200767-0009*

Method	*Parameter*	*Result*	*RL*	*Units*	*Prep Date & Analyst*		*Analysis Date & Analyst*	
GC-SVOA								
3540C/8082A	Aroclor-1248	ND D	0.95	mg/Kg	1/19/2022	PG	1/21/2022 00:00	PM
3540C/8082A	Aroclor-1254	ND D	0.95	mg/Kg	1/19/2022	PG	1/21/2022 00:00	PM
3540C/8082A	Aroclor-1260	ND D	0.95	mg/Kg	1/19/2022	PG	1/21/2022 00:00	PM
3540C/8082A	Aroclor-1262	ND D	0.95	mg/Kg	1/19/2022	PG	1/21/2022 00:00	PM
3540C/8082A	Aroclor-1268	ND D	0.95	mg/Kg	1/19/2022	PG	1/21/2022 00:00	PM

Client Sample Description PCB-HA-21
Rockefeller park between muarry + warren st
Collected: 1/15/2022 ***Lab ID:*** *012200767-0010*

Method	*Parameter*	*Result*	*RL*	*Units*	*Prep Date & Analyst*		*Analysis Date & Analyst*	
GC-SVOA								
3540C/8082A	Aroclor-1016	ND D	0.91	mg/Kg	1/19/2022	PG	1/21/2022 00:00	PM
3540C/8082A	Aroclor-1221	ND D	0.91	mg/Kg	1/19/2022	PG	1/21/2022 00:00	PM
3540C/8082A	Aroclor-1232	ND D	0.91	mg/Kg	1/19/2022	PG	1/21/2022 00:00	PM
3540C/8082A	Aroclor-1242	ND D	0.91	mg/Kg	1/19/2022	PG	1/21/2022 00:00	PM
3540C/8082A	Aroclor-1248	ND D	0.91	mg/Kg	1/19/2022	PG	1/21/2022 00:00	PM
3540C/8082A	Aroclor-1254	ND D	0.91	mg/Kg	1/19/2022	PG	1/21/2022 00:00	PM
3540C/8082A	Aroclor-1260	ND D	0.91	mg/Kg	1/19/2022	PG	1/21/2022 00:00	PM
3540C/8082A	Aroclor-1262	ND D	0.91	mg/Kg	1/19/2022	PG	1/21/2022 00:00	PM
3540C/8082A	Aroclor-1268	ND D	0.91	mg/Kg	1/19/2022	PG	1/21/2022 00:00	PM

EMSL Analytical, Inc.
200 Route 130 North, Cinnaminson, NJ 08077
Phone/Fax: (856) 303-2500 / (856) 858-4571
http://www.EMSL.com EnvChemistry2@emsl.com

EMSL Order: 012200767
CustomerID: MATX53
CustomerPO: 20-1152
ProjectID:

Attn: **Matt Sheldon**
Matrix New World Engineering
26 Columbia Turnpike
Florham Park, NJ 07932

Phone: (973) 240-1800
Fax: (973) 240-1818
Received: 1/18/2022 09:00 AM

Project: **Battery Park City Resiliency Project**

Analytical Results

Client Sample Description PCB-HA-24
Rockefeller park between jersey st. and N. esplanifde

Collected: 1/15/2022 ***Lab ID:*** *012200767-0011*

Method	*Parameter*	*Result*	*RL*	*Units*	*Prep Date & Analyst*		*Analysis Date & Analyst*	
GC-SVOA								
3540C/8082A	Aroclor-1016	ND D	0.91	mg/Kg	1/19/2022	PG	1/21/2022 00:00	PM
3540C/8082A	Aroclor-1221	ND D	0.91	mg/Kg	1/19/2022	PG	1/21/2022 00:00	PM
3540C/8082A	Aroclor-1232	ND D	0.91	mg/Kg	1/19/2022	PG	1/21/2022 00:00	PM
3540C/8082A	Aroclor-1242	ND D	0.91	mg/Kg	1/19/2022	PG	1/21/2022 00:00	PM
3540C/8082A	Aroclor-1248	ND D	0.91	mg/Kg	1/19/2022	PG	1/21/2022 00:00	PM
3540C/8082A	Aroclor-1254	ND D	0.91	mg/Kg	1/19/2022	PG	1/21/2022 00:00	PM
3540C/8082A	Aroclor-1260	ND D	0.91	mg/Kg	1/19/2022	PG	1/21/2022 00:00	PM
3540C/8082A	Aroclor-1262	ND D	0.91	mg/Kg	1/19/2022	PG	1/21/2022 00:00	PM
3540C/8082A	Aroclor-1268	ND D	0.91	mg/Kg	1/19/2022	PG	1/21/2022 00:00	PM

Client Sample Description PCB-HA-09
South cave esplanifde between thames + rector st

Collected: 1/15/2022 ***Lab ID:*** *012200767-0012*

Method	*Parameter*	*Result*	*RL*	*Units*	*Prep Date & Analyst*		*Analysis Date & Analyst*	
GC-SVOA								
3540C/8082A	Aroclor-1016	ND D	0.89	mg/Kg	1/19/2022	PG	1/21/2022 00:00	PM
3540C/8082A	Aroclor-1221	ND D	0.89	mg/Kg	1/19/2022	PG	1/21/2022 00:00	PM
3540C/8082A	Aroclor-1232	ND D	0.89	mg/Kg	1/19/2022	PG	1/21/2022 00:00	PM
3540C/8082A	Aroclor-1242	ND D	0.89	mg/Kg	1/19/2022	PG	1/21/2022 00:00	PM
3540C/8082A	Aroclor-1248	ND D	0.89	mg/Kg	1/19/2022	PG	1/21/2022 00:00	PM
3540C/8082A	Aroclor-1254	ND D	0.89	mg/Kg	1/19/2022	PG	1/21/2022 00:00	PM
3540C/8082A	Aroclor-1260	ND D	0.89	mg/Kg	1/19/2022	PG	1/21/2022 00:00	PM
3540C/8082A	Aroclor-1262	ND D	0.89	mg/Kg	1/19/2022	PG	1/21/2022 00:00	PM

EMSL Analytical, Inc.
200 Route 130 North, Cinnaminson, NJ 08077
Phone/Fax: (856) 303-2500 / (856) 858-4571
http://www.EMSL.com EnvChemistry2@emsl.com

EMSL Order:	012200767
CustomerID:	MATX53
CustomerPO:	20-1152
ProjectID:	

Attn: **Matt Sheldon**
Matrix New World Engineering
26 Columbia Turnpike
Florham Park, NJ 07932

Phone: (973) 240-1800
Fax: (973) 240-1818
Received: 1/18/2022 09:00 AM

Project: **Battery Park City Resiliency Project**

Analytical Results

Client Sample Description PCB-HA-09
South cave esplanifde between thames + rector st
Collected: 1/15/2022 ***Lab ID:*** *012200767-0012*

Method	*Parameter*	*Result*	*RL*	*Units*	*Prep Date & Analyst*	*Analysis Date & Analyst*
GC-SVOA						
3540C/8082A	Aroclor-1268	ND D	0.89	mg/Kg	1/19/2022 PG	1/21/2022 00:00 PM

Client Sample Description PCB-HA-12
South cave esplanade south of marina
Collected: 1/15/2022 ***Lab ID:*** *012200767-0013*

Method	*Parameter*	*Result*	*RL*	*Units*	*Prep Date & Analyst*	*Analysis Date & Analyst*
GC-SVOA						
3540C/8082A	Aroclor-1016	ND D	0.89	mg/Kg	1/19/2022 PG	1/21/2022 00:00 PM
3540C/8082A	Aroclor-1221	ND D	0.89	mg/Kg	1/19/2022 PG	1/21/2022 00:00 PM
3540C/8082A	Aroclor-1232	ND D	0.89	mg/Kg	1/19/2022 PG	1/21/2022 00:00 PM
3540C/8082A	Aroclor-1242	ND D	0.89	mg/Kg	1/19/2022 PG	1/21/2022 00:00 PM
3540C/8082A	Aroclor-1248	ND D	0.89	mg/Kg	1/19/2022 PG	1/21/2022 00:00 PM
3540C/8082A	Aroclor-1254	ND D	0.89	mg/Kg	1/19/2022 PG	1/21/2022 00:00 PM
3540C/8082A	Aroclor-1260	ND D	0.89	mg/Kg	1/19/2022 PG	1/21/2022 00:00 PM
3540C/8082A	Aroclor-1262	ND D	0.89	mg/Kg	1/19/2022 PG	1/21/2022 00:00 PM
3540C/8082A	Aroclor-1268	ND D	0.89	mg/Kg	1/19/2022 PG	1/21/2022 00:00 PM

Definitions:
MDL - method detection limit
J - Result was below the reporting limit, but at or above the MDL
ND - indicates that the analyte was not detected at the reporting limit
RL - Reporting Limit (Analytical)
D - Dilution Sample required a dilution which was used to calculate final results

MATRIXNEWORLD
Engineering Progress

012200767

Matrix New World Engineering, PC
333 West 39th Street, Suite 202
New York, New York 10018
P: 973-240-1800

Environmental Chemistry Chain of Custody

PROJECT INFORMATION

Client:	AECOM USA, Inc.
Project Name:	Battery Park City Resiliency Project
Location:	Manhattan, NY
Date:	1/15/2022
Project Manager:	Matt Sheldon
Inspector(s):	Michael Bonafede

Matrix Project No.: 20-1152

Turn Around Time:
- ☐ STAT ☐ 24 Hour ☐ 5 Day
- ☐ 3 Hour ☐ 48 Hour ☐ 1 Week
- ☐ 6 Hour ☐ 72 Hour ☒ Other
- ☐ 12 Hour ☐ 96 Hour 2-week

Analysis Requested:

Matrix:
- ☐ W - Water
- ☐ S - Soil
- ☐ A - Air
- ☐ SL - Sludge
- ☒ O - Other

Preservative:
- ☐ 1 - HCL
- ☐ 2 - HNO3
- ☐ 3 - H2SO4
- ☐ 4 - Ice
- ☒ 5 - Other

SAMPLE INFORMATION

	Sample ID	Sample Location	Composite	Grab	Personal	Area	Collection Date	Collection Time	Matrix	Preservative	Analysis Requested: EPA SW 846 3540C/8082A	SW-846 1311, 8260C, 8270D, 8081B, 6010D, 7470A, 8151A	RCRA Characterization		Field PH and Test Time	Field Temp and Test Time
1	PCB-HA-02	South Cove Park N. of Jewish Museum	☒	☐	☐	☐	1/15/2022		SOLID	NONE	X	☐	☐	☐		
2	PCB-HA-05	South Cove Park between 2nd & 3rd Pl	☒	☐	☐	☐	1/15/2022		SOLID	NONE	X	☐	☐	☐		
3	PCB-HA-07	↓	☒	☐	☐	☐	1/15/2022		SOLID	NONE	X	☐	☐	☐		
4	PCB-HA-08	South Cove Park lower walk by 3rd Pl	☒	☐	☐	☐	1/15/2022		SOLID	NONE	X	☐	☐	☐		
5	PCB-HA-10	South Cove esplanade by Rector Pl.	☒	☐	☐	☐	1/15/2022		SOLID	NONE	X	☐	☐	☐		
6	PCB-HA-13	Outfall # NCM-832	☒	☐	☐	☐	1/15/2022		SOLID	NONE	X	☐	☐	☐		
	~~PCB-HA-14~~		☒	☐	☐	☐	1/15/2022		SOLID	NONE	☒	☐	☐	☐		
7	PCB-HA-15	Outfall #NCM-832 by West St.	☒	☐	☐	☐	1/15/2022		SOLID	NONE	X	☐	☐	☐		
8	PCB-HA-17	Battery Park esplanade adj. to Liberty St.	☒	☐	☐	☐	1/15/2022		SOLID	NONE	X	☐	☐	☐		
9	PCB-HA-20	Rockefeller Park along River Terrace.	☒	☐	☐	☐	1/15/2022		SOLID	NONE	X	☐	☐	☐		

MB

22 JAN 15 PM 1:10 RECEIVED EMSL MANHATTAN LAB

Page 1 Of 2

CHAIN OF CUSTODY

Relinquished By:		Date:	Time:
I.	Michael Bonafede	1-15-22	
II.			
III.			
IV.			

Received By:		Date:	Time:
I.	David Holowka	1/15/22	13:10
II.			
III.			
IV.	DM COURIER Colleen Palladino	1/17/22 1/18/22 9AM	7:30pm

9.4°C
in fridge
in plastic

Email results to the attention of the specified project manager.

OrderID: 012200767

MATRIXNEWORLD
Engineering Progress

012200767

Matrix New World Engineering, PC
333 West 39th Street, Suite 202
New York, New York 10018
P: 973-240-1800

Environmental Chemistry Chain of Custody

PROJECT INFORMATION

Client:	AECOM USA, Inc.
Project Name:	Battery Park City Resiliency Project
Location:	Manhattan, NY
Date:	1/15/2022
Project Manager:	Matt Sheldon
Inspector(s):	Michael Bonafede

Matrix Project No.: 20-1152

Turn Around Time:
- ☐ STAT ☐ 24 Hour ☐ 5 Day
- ☐ 3 Hour ☐ 48 Hour ☐ 1 Week
- ☐ 6 Hour ☐ 72 Hour ☒ Other
- ☐ 12 Hour ☐ 96 Hour 2-week

Analysis Requested:

Matrix:
- ☐ W - Water
- ☐ S - Soil
- ☐ A - Air
- ☐ SL - Sludge
- ☒ O - Other

Preservative:
- ☐ 1 - HCL
- ☐ 2 - HNO3
- ☐ 3 - H2SO4
- ☐ 4 - Ice
- ☒ 5 - Other

SAMPLE INFORMATION

	Sample ID	Sample Location	Composite	Grab	Personal	Area	Collection Date	Collection Time	Matrix	Preservative	Analysis Requested: EPA SW 846 3540C/8082A	SW-846 1311, 8260C, 8270D, 8081B, 6010D, 7470A, 8151A	RCRA Characterization		Field PH and Test Time	Field Temp and Test Time
10	PCB-HA-21	Rockefeller Park between Murray + Warren st	☒	☐	☐	☐	1/15/2022		SOLID	NONE	☒	☐	☐	☐		
11	PCB-HA-24	Rockefeller Park between Vesey st and N. esplanade	☒	☐	☐	☐	↓		↓	↓	☒	☐	☐	☐		
12	PCB-HA-09	South cove esplanade between thames + rector st.	☒	☐	☐	☐					☒	☐	☐	☐		
13	PCB-HA-12	South cove esplanade south of marina	☒	☐	☐	☐					☒	☐	☐	☐		
			☐	☐	☐	☐					☐	☐	☐	☐	22 JAN 15 PM 1:10	EMSL MANHATTAN LAB RECEIVED
			☐	☐	☐	☐					☐	☐	☐	☐		
			☐	☐	☐	☐					☐	☐	☐	☐		
			☐	☐	☐	☐					☐	☐	☐	☐		
			☐	☐	☐	☐					☐	☐	☐	☐		
			☐	☐	☐	☐					☐	☐	☐	☐		

CHAIN OF CUSTODY

Relinquished By:		Date:	Time:
I.	Michael Bonafede	1-15-22	
II.			
III.			
IV.			

Received By:		Date:	Time:
I.	David Hobaitza	1/15/22	1:10pm
II.			
III.			
IV.	JM COURIER	1/17/22	7:30 pm

Email results to the attention of the specified project manager.

13 JM.

9.4°C in fridge rec'd in plastic

Page 2 Of 2

OrderID: 012200767

APPENDIX C
MATRIX SURVEY FORMS

ASBESTOS SURVEY FORM

Typical Materials to Inspect

Site:
Location: Battery Park, Manhattan, NY
Date: 1/15/2022
Inspectors: M. Sheldon & M. Bonafede

- □ Thermal System Insulation
- □ Floor Tile / Mastic
- □ Ceiling Plaster (Multi-Layers)
- □ Ceiling Tile
- □ Wall Plaster (Multi-Layers)
- □ Wall Board
- □ Joint Compound
- □ Ext. Caulk
- □ Window Caulk
- □ Window Putty
- □ Transite Panels
- □ Gaskets / Brakes
- □ Fire Brick & Mortar
- □ Elevator Brake Pads
- □ Ext. Masonry
- □ Roof Materials
- □ Roof Flashing
- □ Other

Functional Space	Potential ACM	Approximate Quantity	Condition	Friable / Non-Friable	Sampled / Assumed / Non-Suspect	Sample Number	Photo ID Number	Notes
S. Cove Park North of museum	Building Retention wall Mortar	TBD	G	NF	01			
↓	↓ Caulk	TBD	G	NF	02			
↓	No Pipe Dope to water fountain threading.				Teflon	Tape		
S. Cove Park Between 2nd-3rd	Retention wall Mortar	TBD	G	NF	04			
↓	Caulk to Building and wall	TBD	G	NF	05			
↓	Fibrous Exp. Joint	TBD	G	NF	06			
↓	Caulk to Retention wall	TBD	G	NF	07			
By 3rd Pl.	Caulk to Lower wall	TBD	G	NF	08			
Plaza By thame	Retention wall Caulk	TBD	G	NF	09			
Rector	Caulk to Plaza	TBD	G	NF	10			Floor
	Building facade Mortar = N.S. Stamped				Concrete			
↓ South of Marina	Retention wall Caulk	TBD	G	NF	12			
Outfall #NC-M-832	Caulk to fram.	0/0 LF	G	NF	13			
↓	Exp. Caulk Between frame and Street	10-15 LF	G	NF	15			

Condition - Good, Damaged or Significantly Damaged

ASBESTOS SURVEY FORM

Typical Materials to Inspect

Site:
Location: Battery Park, Manhattan, NY
Date: 1/15/2022
Inspectors: M. Sheldon & M. Bonafede

- ☐ Thermal System Insulation
- ☐ Floor Tile / Mastic
- ☐ Ceiling Plaster (Multi-Layers)
- ☐ Ceiling Tile
- ☐ Wall Plaster (Multi-Layers)
- ☐ Wall Board
- ☐ Joint Compound
- ☐ Ext. Caulk
- ☐ Window Caulk
- ☐ Window Putty
- ☐ Transite Panels
- ☐ Gaskets / Brakes
- ☐ Fire Brick & Mortar
- ☐ Elevator Brake Pads
- ☐ Ext. Masonry
- ☐ Roof Materials
- ☐ Roof Flashing
- ☐ Other

Functional Space	Potential ACM	Approximate Quantity	Condition	Friable / Non-Friable	Sampled / Assumed / Non-Suspect	Sample Number	Photo ID Number	Notes
Near outfall #NCM-63	mortar to Planter	TBD	G	NF	14			No caulk. only mortar
	Building facade	Mortar = N.S.		Stamped	Concrete			
Esplanade By Liberty St.	Caulk to Beach	TBD	G	NF	17			
Rockefeller Park	mortar to stone wall	TBD	G	NF	18			
By River Terrace	mortar to short wall	TBD	G	NF	19			
↓	Caulk to stairs	TBD	G	NF	20			
By Murray	copings stem seam caulk to Ret. Wall	TBD	G	NF	21			
By Vessey	Mortar to Stairs	TBD	G	NF	22			
↓	Mortar to Curb	TBD	G	NF	23			
↓	Caulk to wall along water front	TBD	G	NF	24			

Condition - Good, Damaged or Significantly Damaged

APPENDIX D
MATRIX AND SUB-CONTRACTED LABORATORY CERTIFICATIONS & ACCREDITATIONS

New York State – Department of Labor
Division of Safety and Health
License and Certificate Unit
State Campus, Building 12
Albany, NY 12240

ASBESTOS HANDLING LICENSE

Matrix New World Engineering, Land Surveying and Landscape Architecture, P.C.

26 Columbia Turnpike

Florham Park, NJ 07932

FILE NUMBER: 99-0332
LICENSE NUMBER: 29689
LICENSE CLASS: RESTRICTED
DATE OF ISSUE: 07/23/2021
EXPIRATION DATE: 07/31/2022

Duly Authorized Representative – Jayne Warne:

This license has been issued in accordance with applicable provisions of Article 30 of the Labor Law of New York State and of the New York State Codes, Rules and Regulations (12 NYCRR Part 56). It is subject to suspension or revocation for a (1) serious violation of state, federal or local laws with regard to the conduct of an asbestos project, or (2) demonstrated lack of responsibility in the conduct of any job involving asbestos or asbestos material.

This license is valid only for the contractor named above and this license or a photocopy must be prominently displayed at the asbestos project worksite. This license verifies that all persons employed by the licensee on an asbestos project in New York State have been issued an Asbestos Certificate, appropriate for the type of work they perform, by the New York State Department of Labor.

Amy Phillips, Director
For the Commissioner of Labor

SH 432 (8/12)

United States Environmental Protection Agency

This is to certify that

Matrix New World Engineering, Land Surveying
and Landscape Architecture, PC

has fulfilled the requirements of the Toxic Substances Control Act (TSCA) Section 402, and has received certification to conduct lead-based paint activities pursuant to 40 CFR Part 745.226

In the Jurisdiction of:

All EPA Administered Lead-based Paint Activities Program States, Tribes and Territories

This certification is valid from the date of issuance and expires January 25, 2025

LBP-2303-2
Certification #

December 01, 2021
Issued On

Michelle Price, Chief
Lead, Heavy Metals, and Inorganics Branch

NYC DEP ASBESTOS CONTROL PROGRAM

ASBESTOS CERTIFICATE

SHELDON,
MATTHEW
INVESTIGATOR
148633

EXPIRES: 02/18/2022
DOB:02/18/1987 M 5' 11"

MUST BE CARRIED ON ALL ASBESTOS PROJECTS

STATE OF NEW YORK - DEPARTMENT OF LABOR
ASBESTOS CERTIFICATE

N.Y.S

MATTHEW D SHELDON
CLASS(EXPIRES)
C ATEC(02/22) D INSP(02/22)
H PM (02/22) I PD (02/22)

CERT# 14-12741
DMV# 216778545

MUST BE CARRIED ON ASBESTOS PROJECTS

STATE OF NEW YORK - DEPARTMENT OF LABOR
ASBESTOS CERTIFICATE

N.Y.S

MICHAEL A BONAFEDE
CLASS(EXPIRES)
C ATEC(01/22) D INSP(01/22)
H PM (01/22)

CERT# 19-01170
DMV# 481409375

MUST BE CARRIED ON ASBESTOS PROJECTS

01213 605847516 12

EYES BRO
HAIR BRO
HGT 5' 08"

IF FOUND RETURN TO:
NYSDOL - L&C UNIT
ROOM 161A BUILDING 12
STATE OFFICE CAMPUS
ALBANY NY 12240

New York State Department of Health Certificate of Asbestos Safety Training

This form is the official record of successful completion of a New York State accredited asbestos safety training course.

Certificate No. 902573

I –To be completed by Trainee

Name of Trainee (print)	NYS Depart. of Motor Vehicles ID (DMV ID)[1]	
Michael Bonafede	481 409 375	
Signature of Trainee	Telephone Number	Date of Birth[1]
	732-600-9837	01/26/1987

Address: 4705 Center Boulevard Apt 1810, Long Island City, NY 11109

(Street or PO Box) (City) (State) (Zip Code)

II—To be completed by Training Sponsor

Provider's Name	Telephone Number
Big Apple Occupational Safety Inc	
Address: ~~505 Eighth Avenue # 2305~~ New York NY 10018	Course Location: Webinar
Zip Code: 212-564-7656 www.baos.com	

Course Title: Project Monitor ☐ Initial ☑ Refresher | *NYS DOH use only* ☐ DOH Equivalency [2]

Training Language: ☑ English ☐ Other: _____ Exam Grade/Date: 80/ 01/05/2022

Dates of Training: From: 01/05/22 To: 01/09/22 Expires: 01/05/2023

I certify that the asbestos safety training course given on the above date complied with both 10 NYCRR Part 73 and TSCA Title II, was consistent with the curriculum and instructors approved by the New York State Department of Health, and the trainee receiving this certificate completed the training course and successfully passed the examination.

Training Director[2]: Radha Reddy (Print) _____ (Signature)

DEPT. OF LABOR

DOH-2832 (10/03) [1] Optional Information [2] DOH Equivalency signed by NYS DOH representative only

New York State Department of Health Certificate of Asbestos Safety Training

This form is the official record of successful completion of a New York State accredited asbestos safety training course.

Certificate No. 900187

I –To be completed by Trainee

Name of Trainee (print)	NYS Depart. of Motor Vehicles ID (DMV ID)[1]	
Michael Bonafede	481 409 375	
Signature of Trainee	Telephone Number	Date of Birth[1]
	732-600-9837	01/26/1987

Address: 4705 Center Blvd Apt 1810, Long Island city, NY 11109

(Street or PO Box) (City) (State) (Zip Code)

II—To be completed by Training Sponsor

Provider's Name	Telephone Number
Big Apple Occupational Safety Inc	
Address: ~~505 Eighth Avenue # 2305~~ New York NY 10018	Course Location: Webinar
Zip Code: 212-564-7656 www.baos.com	

Course Title: Inspector ☐ Initial ☑ Refresher | *NYS DOH use only* ☐ DOH Equivalency [2]

Training Language: ☑ English ☐ Other: _____ Exam Grade/Date: 92/ 01/07/2021

Dates of Training: From: 12/01/21 To: 12/01/21 Expires: 12/01/2022

I certify that the asbestos safety training course given on the above date complied with both 10 NYCRR Part 73 and TSCA Title II, was consistent with the curriculum and instructors approved by the New York State Department of Health, and the trainee receiving this certificate completed the training course and successfully passed the examination.

Training Director[2]: Radha Reddy (Print) _____ (Signature)

DEPT. OF LABOR

United States Environmental Protection Agency

This is to certify that

Michael Bonafede

has fulfilled the requirements of the Toxic Substances Control Act (TSCA) Section 402, and has received certification to conduct lead-based paint activities pursuant to 40 CFR Part 745.226 as:

Risk Assessor

In the Jurisdiction of:

All EPA Administered Lead-based Paint Activities Program States, Tribes and Territories

This certification is valid from the date of issuance and expires May 21, 2022

LBP-R-I202857-1

Certification #

May 07, 2019

Issued On

John Gorman, Chief

Pesticides & Toxic Substances Branch

United States Department of Commerce
National Institute of Standards and Technology

Certificate of Accreditation to ISO/IEC 17025:2017

NVLAP LAB CODE: 500081-0

Metro Analytical Laboratories, LLC.

New York, NY

is accredited by the National Voluntary Laboratory Accreditation Program for specific services, listed on the Scope of Accreditation, for:

Asbestos Fiber Analysis

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (refer to joint ISO-ILAC-IAF Communique dated January 2009).

2021-10-01 through 2022-09-30

Effective Dates

For the National Voluntary Laboratory Accreditation Program

NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER

Expires 12:01 AM April 01, 2022
Issued April 01, 2021

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

Issued in accordance with and pursuant to section 502 Public Health Law of New York State

MR. ZLATAN DIMITRIJEVIC
METRO ANALYTICAL LABORATORIES, LLC.
255 WEST 36TH STREET SUITE 101
NEW YORK, NY 10018-0022

NY Lab Id No: 12003

is hereby APPROVED as an Environmental Laboratory for the category
ENVIRONMENTAL ANALYSES SOLID AND HAZARDOUS WASTE
All approved subcategories and/or analytes are listed below:

Miscellaneous

Asbestos in Friable Material	Item 198.1 of Manual
	EPA 600/M4/82/020
Asbestos in Non-Friable Material-PLM	Item 198.6 of Manual (NOB by PLM)
Asbestos in Non-Friable Material-TEM	Item 198.4 of Manual
Lead in Dust Wipes	EPA 7000B
Lead in Paint	EPA 7000B

Sample Preparation Methods

EPA 3050B

NEW YORK STATE OF OPPORTUNITY. Department of Health

Serial No.: 63263

Property of the New York State Department of Health. Certificates are valid only at the address shown, must be conspicuously posted, and are printed on secure paper. Continued accreditation depends on successful ongoing participation in the Program. Consumers are urged to call (518) 485-5570 to verify the laboratory's accreditation status.

NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER

Expires 12:01 AM April 01, 2022
Issued April 01, 2021

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

Issued in accordance with and pursuant to section 502 Public Health Law of New York State

MR. ZLATAN DIMITRIJEVIC
METRO ANALYTICAL LABORATORIES, LLC.
255 WEST 36TH STREET SUITE 101
NEW YORK, NY 10018-0022

NY Lab Id No: 12003

is hereby APPROVED as an Environmental Laboratory for the category
ENVIRONMENTAL ANALYSES AIR AND EMISSIONS
All approved subcategories and/or analytes are listed below:

Metals I	
Lead, Total	NIOSH 7082
Miscellaneous	
Asbestos	40 CFR 763 APX A No. III
Fibers	NIOSH 7400 A RULES

NEW YORK STATE OF OPPORTUNITY | Department of Health

Serial No.: 63264

Property of the New York State Department of Health. Certificates are valid only at the address shown, must be conspicuously posted, and are printed on secure paper. Continued accreditation depends on successful ongoing participation in the Program. Consumers are urged to call (518) 485-5570 to verify the laboratory's accreditation status.

NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER

Expires 12:01 AM April 01, 2022
Issued April 01, 2021

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

Issued in accordance with and pursuant to section 502 Public Health Law of New York State

MR. PHILLIP M. WORBY
EMSL ANALYTICAL INC
200 ROUTE 130 NORTH
CINNAMINSON, NJ 08077

NY Lab Id No: 10872

is hereby APPROVED as an Environmental Laboratory in conformance with the National Environmental Laboratory Accreditation Conference Standards (2016) for the category ENVIRONMENTAL ANALYSES SOLID AND HAZARDOUS WASTE
All approved analytes are listed below:

Minerals	
Chloride	EPA 9056A
Fluoride, Total	EPA 9056A
Sulfate (as SO4)	EPA 9056A
Miscellaneous	
Boron, Total	EPA 6010D
	EPA 6020B
Cyanide, Total	EPA 9014
Phenols	EPA 9065
Sulfide (as S)	EPA 9034
Nitroaromatics and Isophorone	
1,3,5-Trinitrobenzene	EPA 8270E
1,3-Dinitrobenzene	EPA 8270E
1,4-Naphthoquinone	EPA 8270E
2,4-Dinitrotoluene	EPA 8270E
2,6-Dinitrotoluene	EPA 8270E
4-Nitroquinoline-1-oxide	EPA 8270E
Isophorone	EPA 8270E
Nitrobenzene	EPA 8260D
	EPA 8270E
Nitrosoamines	
N-Nitrosodiethylamine	EPA 8270E
N-Nitrosodimethylamine	EPA 8270E
N-Nitrosodi-n-butylamine	EPA 8270E
N-Nitrosodi-n-propylamine	EPA 8270E

Nitrosoamines	
N-Nitrosodiphenylamine	EPA 8270E
N-nitrosomethylethylamine	EPA 8270E
N-nitrosomorpholine	EPA 8270E
N-Nitrosopyrrolidine	EPA 8270E
Nutrients	
Nitrate (as N)	EPA 9056A
Nitrite (as N)	EPA 9056A
Orthophosphate (as P)	EPA 9056A
Petroleum Hydrocarbons	
Diesel Range Organics	EPA 8015D
Gasoline Range Organics	EPA 8015D
Oil and Grease Total Recoverable (HEM)	EPA 9071B (Solvent:Hexane)
Phthalate Esters	
Benzyl butyl phthalate	EPA 8270E
Bis(2-ethylhexyl) phthalate	EPA 8270E
Diethyl phthalate	EPA 8270E
Dimethyl phthalate	EPA 8270E
Di-n-butyl phthalate	EPA 8270E
Di-n-octyl phthalate	EPA 8270E
Polychlorinated Biphenyls	
Aroclor 1016 (PCB-1016)	EPA 8082A
Aroclor 1221 (PCB-1221)	EPA 8082A
Aroclor 1232 (PCB-1232)	EPA 8082A
Aroclor 1242 (PCB-1242)	EPA 8082A

Serial No.: 62817

NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER

Expires 12:01 AM April 01, 2022
Issued April 01, 2021

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

Issued in accordance with and pursuant to section 502 Public Health Law of New York State

MR. PHILLIP M. WORBY
EMSL ANALYTICAL INC
200 ROUTE 130 NORTH
CINNAMINSON, NJ 08077

NY Lab Id No: 10872

is hereby APPROVED as an Environmental Laboratory in conformance with the National Environmental Laboratory Accreditation Conference Standards (2016) for the category ENVIRONMENTAL ANALYSES SOLID AND HAZARDOUS WASTE
All approved analytes are listed below:

Polychlorinated Biphenyls

Aroclor 1248 (PCB-1248)	EPA 8082A
Aroclor 1254 (PCB-1254)	EPA 8082A
Aroclor 1260 (PCB-1260)	EPA 8082A
Aroclor 1262 (PCB-1262)	EPA 8082A
Aroclor 1268 (PCB-1268)	EPA 8082A
PCB 1	EPA 8082A
PCB 101	EPA 8082A
PCB 110	EPA 8082A
PCB 138	EPA 8082A
PCB 141	EPA 8082A
PCB 151	EPA 8082A
PCB 153	EPA 8082A
PCB 170	EPA 8082A
PCB 18	EPA 8082A
PCB 180	EPA 8082A
PCB 183	EPA 8082A
PCB 187	EPA 8082A
PCB 206	EPA 8082A
PCB 31	EPA 8082A
PCB 44	EPA 8082A
PCB 5	EPA 8082A
PCB 52	EPA 8082A
PCB 66	EPA 8082A
PCB 87	EPA 8082A

Polynuclear Aromatic Hydrocarbons

2-Acetylaminofluorene	EPA 8270E
Acenaphthene	EPA 8270E
Acenaphthylene	EPA 8270E
Anthracene	EPA 8270E
Benzo(a)anthracene	EPA 8270E
Benzo(a)pyrene	EPA 8270E
Benzo(b)fluoranthene	EPA 8270E
Benzo(g,h,i)perylene	EPA 8270E
Benzo(k)fluoranthene	EPA 8270E
Chrysene	EPA 8270E
Dibenzo(a,h)anthracene	EPA 8270E
Fluoranthene	EPA 8270E
Fluorene	EPA 8270E
Indeno(1,2,3-cd)pyrene	EPA 8270E
Naphthalene	EPA 8270E
Phenanthrene	EPA 8270E
Pyrene	EPA 8270E

Priority Pollutant Phenols

2,3,4,6 Tetrachlorophenol	EPA 8270E
2,4,5-Trichlorophenol	EPA 8270E
2,4,6-Trichlorophenol	EPA 8270E
2,4-Dichlorophenol	EPA 8270E
2,4-Dimethylphenol	EPA 8270E
2,4-Dinitrophenol	EPA 8270E
2,6-Dichlorophenol	EPA 8270E

Serial No.: 62817