September 26, 2014

Via email

Mr. Steve Armann
Manager, RCRA Corrective Action Office
Waste Management Division
U.S. Environmental Protection Agency, Region IX
75 Hawthorne Street
San Francisco, California 94105-3901

Re: Supplemental Removal Information for the Library, Building E - Rooms 1, 5, and 8 and Building G - Room 506 at Malibu High School

Dear Mr. Armann:

On behalf of the Santa Monica – Malibu Unified School District (SMMUSD or the District), ENVIRON International Corporation (ENVIRON) has prepared this Supplemental Removal Information ("Supplement") for Malibu High School (MHS), located at 30215 Morning View Drive, Malibu, California pursuant to U.S. Environmental Protection Agency (USEPA) Region IX's jurisdiction under the Toxic Substances Control Act (TSCA), 40 CFR 761. This document is intended to further supplement and modify as appropriate the MHS-Specific PCB-Related Building Materials Management, Characterization and Remediation Plan (the "MHS-Specific Plan", see Attachment A) that the District submitted to USEPA Region IX, dated July 3, 2014. This Supplement provides information on the removal of building materials in which polychlorinated biphenyls (PCBs) have been identified and verified at concentrations above 50 parts per million (ppm) in accordance with guidance from USEPA Region IX and TSCA.

The MHS-Specific Plan described the identification of ≥ 50 ppm of PCBs in caulking of window units tested in the MHS Library and Building E - Rooms 1, 5, and 8 in exceedance of USEPA standards. The MHS-Specific Plan called for building materials identified with ≥ 50 ppm PCBs to be removed during planned and funded building renovations within 15 years.[1] However, on August 15, 2014, the SMMUSD agreed to "*remedy the TSCA violations identified at four window areas at Malibu High School within the next 10 months, no later than June 30, 2015".*[2,3] The four window areas correspond to tested window units located in the MHS Library and Building E (also called the Blue Building) - Rooms 1, 5, and 8. In addition, based on recent sampling and analytical results in which > 10 micrograms per 100 square centimeters (µg/100cm^2) total PCBs were reported for surface wipe samples taken on caulking around interior doorframes in Building G Room 506 (woodshop)[4] at MHS

[1] Provided management in place Best Management Practices (BMPs) are implemented.

[2] Email from Janece Maez, Associate Superintendent Business and Fiscal Services, SMMUSD, to Tom Huetteman, USEPA, dated August 14, 2014.

[3] In addition to the four window areas discussed in this document, the District shall also change the light fixtures at Malibu High School and Juan Cabrillo Elementary School in the next 12 months in accordance with the July 3rd MHS Specific Plan, as indicated in Janece Maez's August 14, 2014 email to USEPA.

[4] 2014. ENVIRON. Fourth Update on Recent Building Inspections Activities Related to Polychlorinated Biphenyls (PCBs). September 5. See Attachment B.

even after repairs and additional cleaning, the SMMUSD shall implement a similar remedy for interior door caulking in this room.

A summary of prior sampling and analytical results of window caulking tested from the four window areas identified above were provided in Appendix B to the MHS-Specific Plan and a summary of the woodshop interior door caulking surface wipe results were provided in ENVIRON's September 5th update memo included here as **Attachment B**. Although window caulk samples in the MHS Library and Building E - Rooms 1, 5, and 8 were > 50 ppm PCBs, all air samples and surface wipe samples collected from these rooms this summer during BMP implementation have been below USEPA health-based thresholds of 200 ng/m^3 and 1 µg/100cm^2, respectively, (see **Attachment B** for summary information on the Library and Building E); accordingly this removal is for compliance with TSCA since these materials do not present a risk to occupants given the air and wipe testing results are below USEPA's heath-based levels.

Objective

The objective of the work proposed in this Supplement is to physically remove the identified and verified caulking with ≥ 50 ppm PCBs from previously sampled window units located in the MHS Library (see **Figure 1**) and Building E (also called the Blue Building) - Rooms 1, 5, and 8 (see **Figure 2**);[5] as well as interior door caulking in Building G - Room 506 (woodshop – see **Figure 3**) where surface wipe samples were > 10 µg/100 cm^2 PCBs even after repairs and additional cleaning. If non-porous substrate is adjacent to the caulking to be removed in these areas, it will be decontaminated using the decontamination steps described in the MHS-Specific Plan (Appendix F.1.5 and F.1.9). Porous substrate in contact with caulking that has been identified with ≥ 50 ppm PCBs will have its surface prepared and encapsulated per the encapsulation steps described in the MHS Specific Plan (Appendix F.1.6).

The information below further supplements and modifies the MHS-Specific Plan as appropriate. References to applicable sections of the MHS-Specific Plan are also provided and should be referenced for additional information.

Pre-Remedial Activities

A remedial contractor for conducting the work described herein will be selected according to the District's procurement procedures and a "Means and Methods Plan" will be developed by the contractor. ENVIRON will provide oversight of the remedial contractor during remedy implementation.

Remedy Implementation

Refer to Section 1.4 and Appendix F.1.4 of the MHS-Specific Plan for an overview of remedy implementation procedures. The following provides supplemental and modification information related to the District's ≥ 50 ppm PCB caulking removal action described in USEPA's August 14th letter.[6]

Removal Goals

The caulking identified with ≥ 50 ppm PCBs from the tested window units located in the MHS Library and Building E (also called the Blue Building) - Rooms 1, 5, and 8; as well as from interior door caulking in Building G - Room 506 (woodshop), where surface wipe

[5] Representative photos of the windows subject to caulk removal are included as Figure 4.

[6] Letter from Jared Blumenfeld, USEPA Region IX Regional Administrator to Sandra Lyon Superintendent Santa Monica-Malibu Unified School District dated August 14, 2014.

samples results were > 10 µg/100 cm^2 even after repairs and additional cleaning, will be physically removed.

Decontamination of non-porous surface materials adjacent to ≥ 50 ppm PCB-impacted caulking will be performed and then post-decontamination confirmation wipe sampling will be performed with a cleanup goal of <1 µg/100 cm^2.

Porous substrate in contact with ≥ 50 ppm PCB-impacted caulking will have its surface prepared and encapsulated up to 1 foot away from the caulking/substrate contact.

Threshold levels for post-removal confirmatory air and wipe samples will be 200 ng/m^3 and 1 µg/100 cm^2, respectively, as per Appendix F.1.11 of the MHS-Specific Plan.

Caulking Removal and Replacement

Refer to Appendix F.1.4.1 of the MHS-Specific Plan. The caulking in which > 50 ppm PCBs was identified and verified in window units in the Library and Building E - Rooms 1, 5, and 8 will be physically removed without removing the window units where possible. If necessary to achieve remedial goals defined herein, the window units will be removed. A similar procedure will be completed for the interior door caulking of Building G - Room 506 (woodshop). Following remedial activities, the existing windows and/or door will be re-installed (if they were removed). In all cases, the removed caulking will be replaced with new, non-PCB containing caulking.

Decontamination of Non-Porous Surfaces

Refer to Appendices F.1.5 and F.1.9 of the MHS-Specific Plan for the decontamination steps for non-porous surfaces adjacent to ≥ 50 ppm PCB-impacted caulking.

Encapsulation of Adjacent Porous Substrate

If porous substrate adjacent to ≥ 50 ppm PCB-impacted caulking is identified, that substrate will have its surface prepared and encapsulated up to 1 foot away from the caulking/substrate contact using the general encapsulation procedures described in the MHS Specific Plan (Appendix F.1.6). Per discussions with USEPA Region IX, a non-VOC epoxy-based encapsulant will be used.[7] The District will employ a clear encapsulant if available, and/or paint over the encapsulant to match existing paint.

Sampling being conducted as part of the on-going pilot study described in the MHS-Specific Plan will be used to assess the effectiveness of the encapsulant and any future monitoring needs of any encapsulated areas. During future renovations or demolition of encapsulated porous substrates, further characterization testing of the porous substrate would be done to determine the extent of substrate to be removed and appropriate waste handling requirements for this material per Appendix F.4 of the MHS-Specific Plan.

Other remedial activities, including engineering controls and air monitoring during removal, contingency planning, data validation, waste management and disposal, reporting, and recordkeeping and documentation are described in the MHS-Specific Plan. The written certification for the work proposed herein was previously signed by the District, as required under 40 CFR 761.61(a)(3)(i)(E), and was included in Appendix A of the MHS-Specific Plan.

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[7] 2012. USEPA. *Laboratory Study of Polychlorinated Biphenyl (PCB) Contamination and Mitigation in Buildings. Part 3, Evaluation of the Encapsulation Method.* April. EPA/600/R-11/156B

Managing Potential Future Identifications of ≥ 50 ppm PCBs in Building Materials

The process and procedures described in this Supplement are also intended to be used for other buildings in the District if ≥ 50 ppm PCBs are identified and verified in building materials within other District buildings. The schedule for implementing this Supplement at additional locations would be developed in consultation with USEPA, and would not exceed one year following identification and verification.[8] Thus, with submittal of this Supplement, the SMMUSD is seeking approval by USEPA to implement the procedures contained in this Supplement as needed at additional locations.

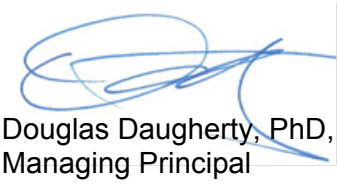
Schedule

The removal described in this Supplement, following USEPA approval, is anticipated to be completed no later than June 30, 2015. Prior to commencement of removal activities, the District will notify USEPA on the dates these activities will take place.

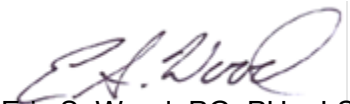
Closing

We would be pleased to answer any questions that you may have about this letter. If you have any questions or would like to discuss this further, please contact either one of us.

Sincerely,



Douglas Daugherty, PhD, PE, CIH
Managing Principal



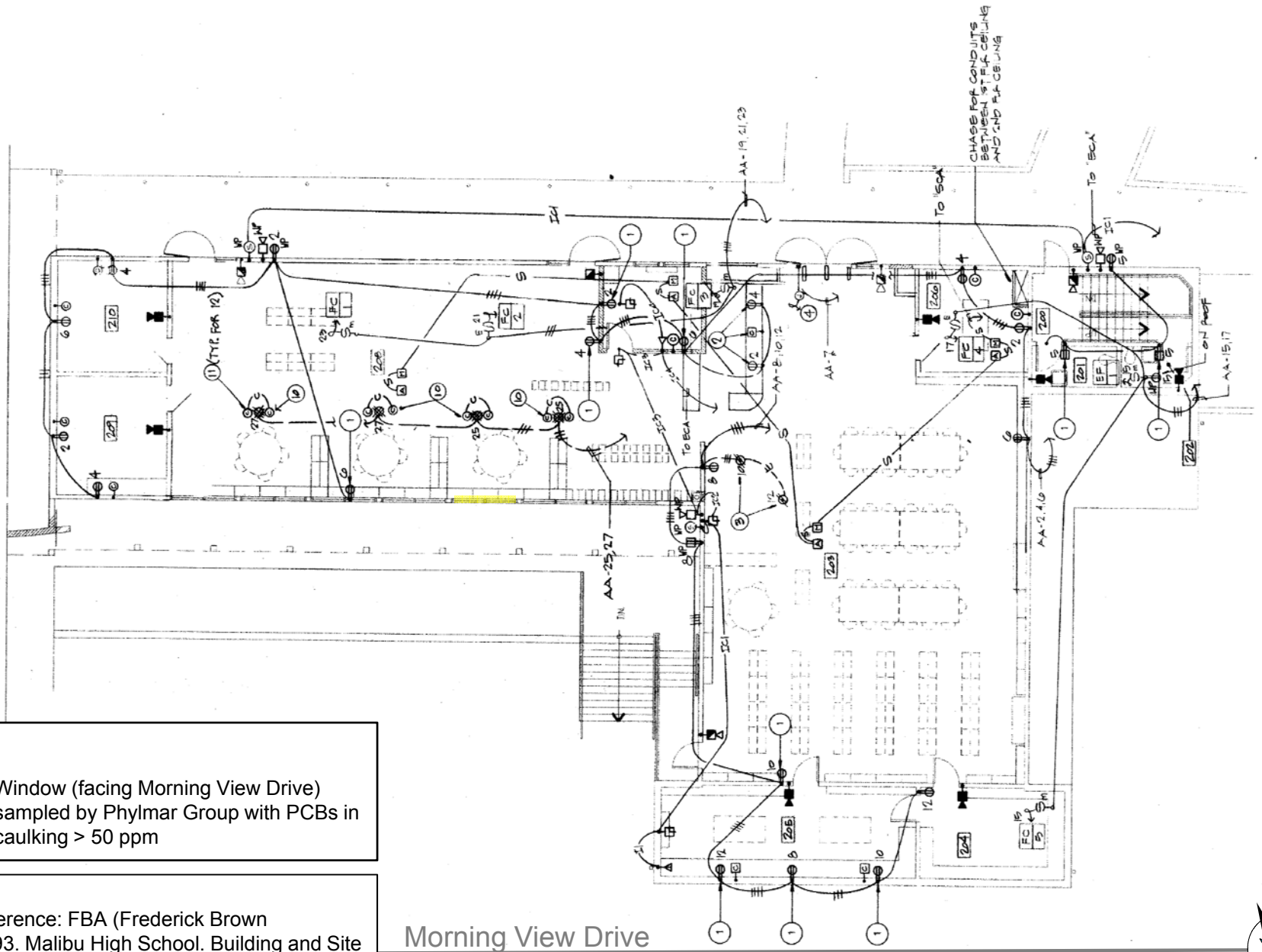
Eric S. Wood, PG, PHg, LSP
Principal Consultant

Attachments:

A: MHS-Specific PCB-Related Building Materials Management, Characterization and Remediation Plan submitted to USEPA Region IX, dated July 3, 2014
B: Fourth Update on Recent Building Inspections Activities Related to Polychlorinated Biphenyls (PCBs)

[8] In the event that the procedures described in this Supplement cannot be implemented within one year following identification and verification, SMMUSD will submit a request for an extension of time to USEPA.

Figures



Legend

Window (facing Morning View Drive) sampled by Phylmar Group with PCBs in caulking > 50 ppm

Note:
1. Floor plan reference: FBA (Frederick Brown Associates). 1993. Malibu High School. Building and Site Renovation.

"Z:\01_Projects\Malibu High School\03_GIS\Bldg_Investigation_Sampling\Figures_DoorsandWindows.pptx"

ENVIRON

DRAFTED BY: MMG | DATE: 9/11/14

Location of Window Caulking in the Library Sampled by Phylmar Group with PCB Concentrations above 50 ppm

Building A (800, Great White Shark), Malibu High School
30215 Morning View Drive, Malibu, California

Figure 1

PROJECT: 0433980F

Legend

Windows sampled by Phylmar Group with PCBs in caulking > 50 ppm

Note:
1. Floor plan reference: JE Jacobs. 2001. Santa Monica – Malibu Unified School District Modernization Program Juan Cabrillo Elementary School. September 7, 2001.

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ENVIRON

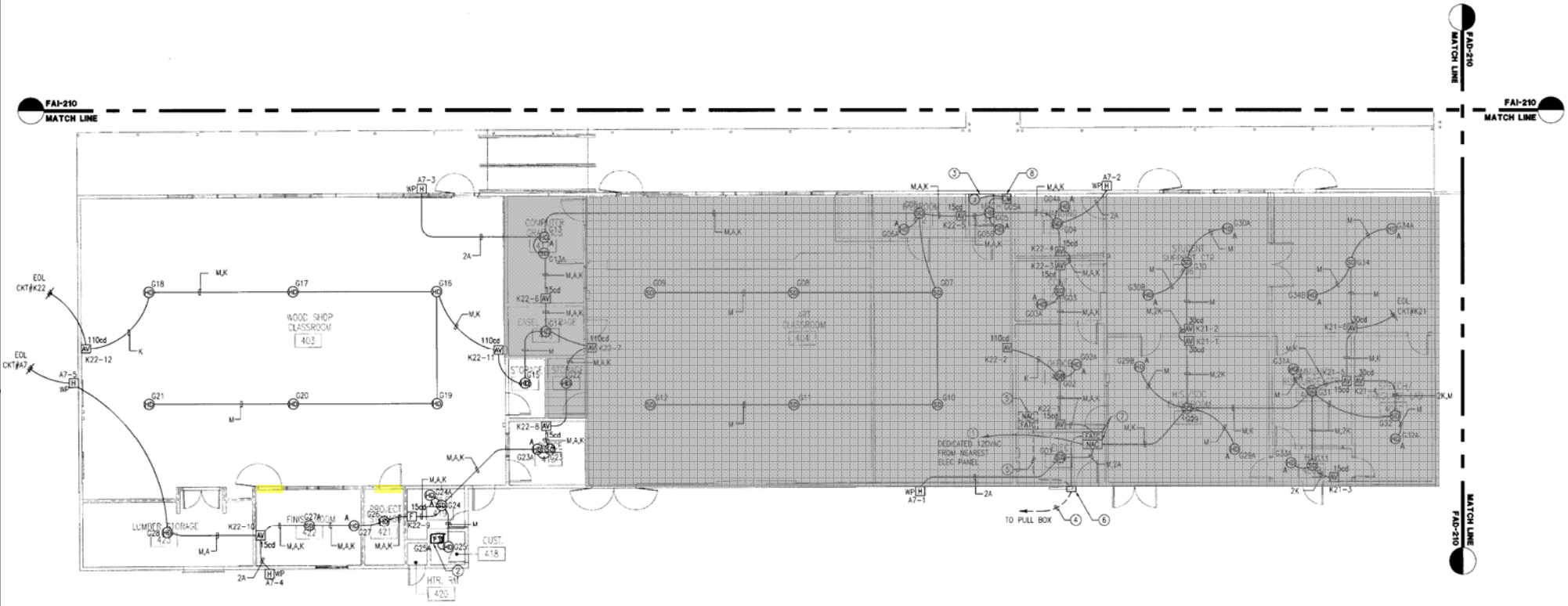
DRAFTED BY: MMG | DATE: 9/11/14

Locations of Window Caulking in Rooms 1, 5, and 8 of Building E Sampled by Phylmar Group with PCB Concentrations above 50 ppm

Building E (000, Blue Shark), Malibu High School
30215 Morning View Drive, Malibu, California

Figure 2

PROJECT: 0433980F



Legend

Total PCB Concentrations in Wipe Samples above 10 µg/100 cm^2 after Repairs and Recleaning

Note:
1. Floor plan reference: HMC Architects. 2010. Malibu Middle & High School. Campus-Wide Fire Alarm Replacement Project. October 6, 2010.

"Z:\01_Projects\Malibu High School\03_GIS\Bldg_Investigation_Sampling\Figures_DoorsandWindows.pptx"

ENVIRON

DRAFTED BY: MMG | DATE: 9/19/14

Locations of Internal Door Caulking in Wood Shop with Total PCB Concentrations in Wipe Samples above 10 µg/100 cm^2 after Repairs and Recleaning

Building G (500, Angel Shark), Malibu High School
30215 Morning View Drive, Malibu, California

Figure 3

PROJECT: 0433980F

Photo 1. Building E (000, Blue Shark), Room 1

Photo 2. Building E (000, Blue Shark), Room 5

Photo 3. Building E (000, Blue Shark), Room 8

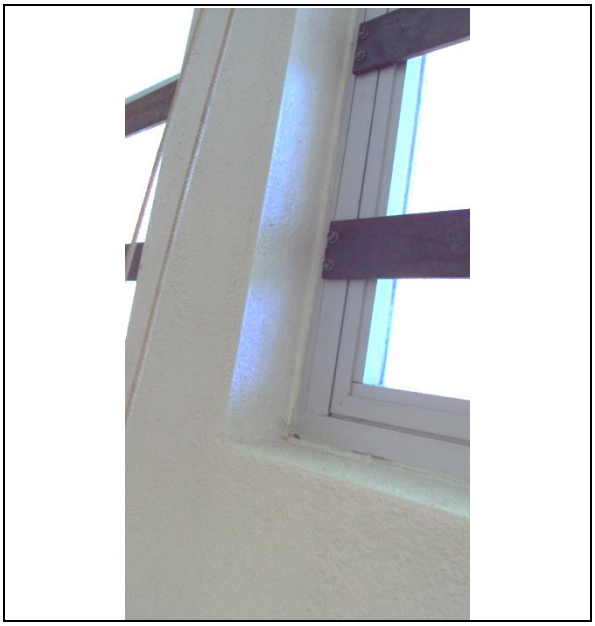


Photo 4. Building A (800, Great White Shark), Library – windows facing Morning View Drive

ENVIRON	Representative Photos of the Windows Subject to Caulk Removal Malibu High School 30215 Morning View Drive, Malibu, California	Figure **4** PROJECT: 0433980F

Attachment A

July 3, 2014 MHS-Specific PCB-Related Building Materials Management, Characterization and Remediation Plan submitted to USEPA Region IX

Site-Specific PCB-Related Building Materials Management, Characterization and Remediation Plan

for the Library and Building E Rooms 1, 5, and 8 at Malibu High School

Prepared for:
Santa Monica-Malibu Unified School District
Santa Monica, California

Prepared by:
ENVIRON International Corporation
Westford, Massachusetts,
San Francisco and Irvine, California

Date:
July 2014

Project Number:
0433980B

ENVIRON

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Acronyms and Abbreviations

BMP	Best Management Practice
Cal/OSHA	California Division of Occupational Safety and Health
CFR	Code of Federal Regulation
cm^2	square centimeter(s)
DOT	Department of Transportation
DTSC	California Department of Toxic Substances Control
ENVIRON	ENVIRON International Corporation
HEPA	high-efficiency particulate air
HVAC	heating, ventilation, air conditioning
mg/m^3	milligram(s) per cubic meter
MHS	Malibu High School
MERV	minimum efficiency reporting value
MS/MSD	matrix spike and matrix spike duplicate
ng/m^3	nanogram(s) per cubic meter
PCB	polychlorinated biphenyl
PEA	preliminary environmental assessment
PEL	permissible exposure limits
Phylmar	Phylmar Group, Inc.
PPE	personal protective equipment
ppm	parts per million
QA/QC	quality assurance/quality control
SMMUSD	Santa Monica-Malibu Unified School District
SOP	Standard Operating Procedure
TWA	time-weighted average
TSCA	Toxic Substances Control Act
USEPA	United States Environmental Protection Agency

1 Malibu High School Specific PCB Plan

1.1 Introduction

On behalf of the Santa Monica – Malibu Unified School District (SMMUSD or the District), ENVIRON International Corporation (ENVIRON) has prepared this Site-Specific polychlorinated biphenyl (PCB)-Related Building Materials Management, Characterization and Remediation Plan (Site-Specific Plan) for the Library and Building E (also called the Blue Building) Rooms 1, 5, and 8 at Malibu High School (MHS), located at 30215 Morning View Drive, Malibu, California as requested by United States Environmental Protection Agency (USEPA) Region IX.[1] An aerial photo and site plan of MHS indicating the location of these rooms are provided as Figures 1 and 2, respectively.

ENVIRON prepared this Site-Specific Plan to address the results of testing at MHS which identified PCBs in air, wipe and building material samples as summarized in Appendix B of this plan. Specifically, this Site-Specific Plan addresses the building materials which contain ≥50 parts per million (ppm) PCBs in exceedance of USEPA standards, which have been identified in the Library and Building E Rooms 1, 5, and 8. This Site-Specific Plan describes procedures for management, characterization and remediation of building materials in which PCBs have been identified above 50 ppm in accordance with guidance from USEPA Region IX, and the Toxic Substances Control Act (TSCA) 40 Code of Federal Regulations (CFR) 761.

Building materials containing PCBs at concentrations ≥50 ppm in the Library and Building E Rooms 1, 5, and 8 will be remediated in accordance with the procedures in this plan when building renovations are planned and funded. Currently, the timing for beginning removal of ≥50 ppm PCB-impacted building materials identified at MHS is anticipated to begin within 9–12 months after a Coastal Commission Permit for the demolition and renovation is issued to the District. However, it is not clear how long it will take for that permit to be issued. It is likely that the intended remediation of ≥50 ppm PCB-impacted building materials would not be completed within the June 4, 2015 timeframe specified in USEPA's June 4, 2014 letter to the District. Therefore, the District proposes to manage this material in place (in the Library and Building E Rooms 1, 5, and 8) for up to 15 years or until removal/remediation of ≥50 ppm PCB-impacted materials occur, whichever is sooner. The District will maintain management in place BMPs as described in this plan during this time period. The District also may propose an option to extend this period, if needed, with concurrence with USEPA. This approach is consistent with USEPA Region I's agreement with the University of Massachusetts.[2]

The general approach presented in this Site-Specific Plan is as follows:

1. **Management In Place – Implementation of BMPs Prior to Remediation/Renovation Activities:** Until renovation work is scheduled for completion, all confirmed areas with

[1] June 4, 2014 letter from Steven Armann, Manager Corrective Action Section, Land Division US EPA Region IX to Sandra Lyon, Superintendent SMMUSD.
[2] 2012. Consent Agreement and Final Order from USEPA Region I to University of Massachusetts System. TSCA-01-2012-036.

≥50 ppm PCB-impacted building materials (the Library and Building E Rooms 1, 5, and 8) will be handled in accordance with BMPs.[3] In addition, pilot studies consisting of air and wipe sampling (pre-BMP and post-BMP) within MHS will be completed to evaluate the effectiveness/frequency of BMPs and make adjustments in the implementation of the BMPs if appropriate. BMPs will continue to be implemented on a regularly occurring basis prior to remediation of confirmed ≥50 ppm PCB-impacted building materials.

2. **Site Characterization:** Prior to proposed demolition or renovation activities in the Library and Building E Rooms 1, 5, and 8, a comprehensive assessment, including sampling and laboratory analysis for PCBs, will be completed of potentially PCB-impacted building materials.[4]
3. **Proposed ≥50 ppm PCB Removal/Remediation Procedures:** Immediately prior to proposed demolition or renovation activities, remediation of all confirmed ≥50 ppm PCB-impacted building materials will be performed.

As further described below, the District intends to conduct this remediation in accordance with 40 CFR 761.62 and 40 CFR 761.61(a) and (c). The written certification signed by the District, as required under 40 CFR 761.61(a)(3)(i)(E), is included in Appendix A.

It should be noted that regulatory oversight of investigation and potential remediation of PCB-impacted soils at MHS is to be managed separately through the Preliminary Environmental Assessment (PEA) process under the California Department of Toxic Substances Control (DTSC). Therefore, discussion related specifically to soil at MHS is not included herein.

This Site-Specific Plan will be implemented by the District as the owner and operator of the buildings. The District will contract with a qualified remediation contractor to conduct the work detailed in this Plan prior to the planned renovations/demolition. All PCB testing will be conducted by a qualified environmental consultant under contract to the District. The District's contact information is below:

Ms. Sandra Lyon, Superintendent
Santa Monica Malibu Unified School District
1651 Sixteenth Street
Santa Monica, CA 90404
310-450-8338 ext. 70229

1.1.1 Flow Charts and Schedule

In order to summarize the proposed activities associated with addressing PCBs at MHS, a flow chart illustrating the overall approach is provided as Figure 3. Detailed flow charts associated

[3] Although not covered by this Specific Plan, the BMPs outlined in this plan will also be generally followed in all pre-1981 buildings at MHS until renovation or demolition of those structures, as noted in specific parts of the BMP Appendix of this plan.

[4] Although not covered by this Specific Plan, this step will also be generally followed in pre-1981 buildings at MHS during future renovation or demolition of those structures.

with steps in this plan are also provided in Figures 4 through 6. A proposed schedule is also provided as Figure 7.

1.2 Management In Place – Implementation of BMPs Prior to Remediation/Renovation Activities

Until removal/remediation of ≥50 ppm PCB-impacted materials in the Library and Building E Rooms 1, 5, and 8, the District will maintain management in place BMPs as described in this plan during this time period as discussed in the introduction. A schedule for implementation of BMPs to minimize the potential for exposures to PCBs, which will be commencing in the summer of 2014, is provided in Figure 7. The schedule also includes the sampling and analysis of air and wipe samples in the four rooms known to have PCB-impacted caulk ≥50 ppm during 2014 and 2015 to evaluate what, if any, monitoring may be needed after June 2015.

A flow chart detailing the procedures associated with management in place, which includes both Building Inspections and BMPs, are provided as Figures 4 and 5, respectively. A detailed description of the Building Inspections and BMPs are provided in Appendix C. A summary of key aspects of the BMPs for MHS requested by USEPA-Region IX are provided below.

1.2.1 Education and Communication to Reduce Exposure Potential

The District will distribute PCB awareness materials to MHS teachers, staff, and the school community by maintaining copies in the front office or in another suitable location in the campus. The materials shall be available in languages other than English, based on the school's need. The awareness material will include elements to minimize potential exposures to PCB's including encouragement to avoid contact with the caulk in the Library and Building E Rooms 1, 5, and 8, to wash hands with soap often and before eating and drinking, and to improve ventilation by opening windows. Hand wash instruction posters will be placed near the sinks to remind the students to wash hands thoroughly and use soap.

1.2.2 Cleaning and Inspection Procedures

To reduce the amount of dust that can become airborne in the school buildings, the Manager of Facilities or designee will monitor the cleaning procedures of the custodial workers in areas identified as potentially impacted PCB building materials as described in the subsections below. This initial practice will be further evaluated using data from the BMP pilot study described in Section 1.2.3.

1.2.2.1 Routine Cleaning[5]

- Once a week:
  - Clean carpeting or rugs using a vacuum equipped with High-Efficiency Particulate Air (HEPA) filters;
  - Clean hard flooring (i.e. vinyl tiles, painted/sealed concrete, wood) using mops treated with water (or water-based, non-toxic additives); and

[5] Note that BMP cleaning practices prohibit the use of dry cleaning techniques like dry dusting, mopping, and sweeping within the rooms.

  - Wash mirrors, powder shelves, and enameled surfaces in lavatories, as well as sinks, commodes, and urinals.
- Once a month, in addition to the weekly cleaning:
  - Clean the air distribution devices (registers, grilles & diffusers):
  - Wipe all accessible surfaces with a dampened cloth, including, but not limited to, walls, shelves, baseboards, door frames, door knobs, furniture, fixtures, window sills, and any other accessible portions; and
  - Clean the interior of waste receptacles with dampened wipe clothes, and wash as necessary. Visually check the areas after cleaning.

1.2.2.2 Annual Cleaning

In conjunction with the District's "summer cleaning", additional cleaning BMPs will be implemented. All surfaces in all rooms (vertical and horizontal) will be cleaned as follows:

- Areas covered in weekly and monthly routine cleaning; and
- Areas that are not normally accessed (e.g., areas behind bookshelves).

In addition, a thorough cleaning of the heaters and heating ventilation air conditioning (HVAC) systems with ductwork is currently anticipated to be completed when MHS is not occupied for a relatively long time, i.e. spring, summer, or winter break. The District has contracted with AirTek to perform the HVAC cleaning during June through August 2014. Upon completion of the HVAC cleaning, all surface areas, where dust accumulation could occur, will be cleaned. Wet methods will be used. Non-toxic disinfectant can be applied, if necessary. The evaluation of the initially proposed annual frequency for the thorough cleaning of the HVAC system will be evaluated as part of the BMP pilot study described in Section 1.2.3.

The following components of the HVAC system units will be thoroughly cleaned by appropriately trained personnel:

- Clean blowers, fan housings, plenums (except ceiling supply and return plenums), scrolls, blades or vanes, shafts, baffles, dampers, and drive assemblies, where applicable. All visible surface deposits shall be removed without introducing dust to the air by using wet methods. A suitable operative drainage system will be in place prior to beginning wash down procedures.
- Clean all coils and related components, including evaporator fins.
- Negative air pressure that will draw dust to a HEPA vacuum collection system will be maintained at all times in the duct cleaning area to minimize migration of dust into occupied areas.
  - Clean air distribution devices (fresh air intakes, registers, grilles, & diffusers).

1.2.3 Air and Wipe Sampling MHS Pilot Study on BMPs

As described in Appendix B, sampling data taken after the cleaning conducted in January 2014 showed that the cleaning did reduce both airborne and wipe concentrations. A two-part pilot study to further evaluate the effectiveness and frequency of BMPs at MHS will be conducted from June to August, 2014.

The first part of the pilot study is to evaluate changes in air and wipe sample results since the December 2013 cleaning. Therefore, air and wipe sampling will be conducted from June to August 2014 in rooms cleaned in December 2013 but prior to implementation of the District's annual BMP cleaning (pre-BMP) to evaluate any changes in sample results since the cleaning conducted approximately 6 months ago. Some of these rooms have been unoccupied since this cleaning and had limited cleaning conducted since last sampled in January 2014. This data will assist in evaluating whether air or wipe concentrations change significantly between thorough cleanings, which can aid in evaluating cleaning frequency and practices moving forward.

The second part of the pilot study will be to conduct air and wipe sampling both before (pre-BMP) and after the annual BMP cleaning (post-BMP), scheduled for June through August 2014. This data will assist in evaluating the effectiveness of the cleaning procedures.

A memorandum titled "Additional Information on the Selection of Representative Rooms for Air/Wipe Testing – Revision 2" was provided by ENVIRON to USEPA on June 18, 2014 describing proposed pre-BMP and post-BMP air and wipe sampling procedures. This memorandum, which also outlines the rationale for selecting rooms in MHS to be included in the Air and Wipe Sampling Pilot Study, is provided as Appendix D, and achieved USEPA concurrence on June 13, 2014.[6]

Upon receipt of analytical data, air and wipe sampling results will be compared to the levels described below. The pre-BMP results will also be directly compared to the post-BMP results to determine the percent reduction. At the end of the summer effort, ENVIRON will prepare a full report that contains a summary of all of the inspection and sampling results, ENVIRON's conclusions from the data, and any recommendations, including additional testing or follow up work to evaluate BMP cleaning or changes in cleaning frequencies, if warranted based on the data. ENVIRON will also provide intermediate summary results to USEPA for each MHS building in the pilot study within 15 days of the receipt of final quality assured/quality controlled post-BMP results for that building. These intermediate building summary reports would become appendices to the final report. These intermediate building reports would include summary of the inspections and sampling results as well as the laboratory reports.

The Library and Building E Rooms 1, 5, and 8, will be sampled (air and wipe) in summer of 2014, approximately around the school's winter break in the 2014/2015 school year, and in June 2015 prior to the next annual summer cleaning. These sampling events will provide data to further evaluate the frequency of BMPs. This data will be used to evaluate the needed frequency of future monitoring in these rooms past June 4, 2015, if planned demolition/renovation of the Library and Building E Rooms 1, 5, and 8, respectively, does not

[6] June 13, 2014 email from T. Huetteman of EPA to D. Daugherty of ENVIRON.

occur by then. ENVIRON will submit a report with the data and monitoring recommendations 45-days after the receipt of the final sample results from the laboratory.

1.2.3.1 Air Samples

For most locations, total PCBs in air samples will be conservatively compared to a health-based threshold of 200 nanogram per cubic meter (ng/m^3). This threshold is lower than the health-protective USEPA Public Health Levels of PCBs in School Indoor Air[7] for teachers and elementary schools students and above[8], but consistent with the threshold for MHS cited by USEPA Region IX.[9]

1.2.3.2 Wipe Samples

Total PCBs in wipe samples collected at the school were previously compared to the USEPA regulatory threshold of 10 microgram (µg)/100 centimeters squared (cm^2).[10] Although the development of health-based wipe thresholds contains numerous uncertainties, preliminary calculations conducted by ENVIRON suggest that the 10 µg/100 cm^2 may be appropriate for surfaces with low skin exposure potential (e.g., window sills, floors, walls) but a lower threshold, closer to 2-3 µg/100 cm^2, may be more applicable for areas of high skin exposure potential (e.g., desks and tables).

However, for schools containing PCBs, it is our understanding that 1 µg/100 cm^2 is now being conservatively used by USEPA Region I as a surface wipe threshold. Therefore, based on our discussions with USEPA Region IX, a comparison threshold of 1 µg/100 cm^2 should be used moving forward for wipe samples taken at MHS. If wipe results are >1 µg/100 cm^2, we would contact USEPA to discuss the potential development of more site-specific risk exposure values.

1.2.4 Procedures for Removal of Light Fixtures/Light Ballasts

Light ballasts with the potential to contain PCBs and light fixtures with visible residues from potential past leakage of ballast will be removed within 360 days, or sooner, of identification to allow for planning, contracting, and development of a schedule to work around school schedules. Light ballasts that do not have a label confirming the absence of PCBs will be assumed to contain PCBs. When removing light fixtures and ballasts, a licensed contractor will be hired and follow USEPA recommended removal recommendations.

1.2.5 Procedures for Deteriorated PCB-Impacted Building Materials

The Managers of Facilities will perform inspections of PCB-impacted materials inventoried at MHS once a year. The custodial workers or maintenance employees will also report to their managers for any damaged/deteriorated PCB-impacted materials noticed during the routine or annual cleaning. Procedures for addressing deteriorated PCB will use the following hierarchy of options:

---

7 http://www.epa.gov/pcbsincaulk/maxconcentrations.htm.
8 300, 450, 600, and 450 ng/m^3 for elementary school, middle school, high school, and faculty, respectively[8]
9 Letter from Steve Armann/USEPA to Sandra Lyon/SMMUSD dated January 27, 2014.
10 Letter from Steve Armann/USEPA to Sandra Lyon/SMMUSD dated January 27, 2014.

1.2.5.1 Patch or Repair

Patching using new caulk will be done if possible; repairs would be done in situations where patching of damage caulk would not be suitable (e.g., too much loose caulk is present). Details on the procedures for patching or repair are described in Section C.1.2.5.2(a).

1.2.5.2 Encapsulation of PCB Building Materials

Encapsulation is a commonly used abatement technique intended to reduce PCB exposure in buildings. Encapsulation is accomplished by covering the surface(s) of PCB building materials with a coating material that serves as a barrier to minimize the release of a contaminant from a source. On-site encapsulation would generally be an interim solution, and appropriate disposal of any remaining PCB wastes would be required upon removal of the material or at the time of structure demolition. Further details are provided in Section C.1.2.5.2(b).

1.2.5.3 Removal of PCB-Impacted Building Materials

If it is decided not to patch, repair, or encapsulate deteriorated PCB building materials, they would be removed following the procedures described in Section C.1.2.5.2(c).

1.2.6 PCB Waste Disposal

Any PCB wastes generated during implementation of BMPs will be handled as described in Section C.1.2.7.

A pilot study will be conducted during the BMP cleaning at MHS during June through August 2014 to identify the applicable waste disposal requirements under TSCA 40 CFR 761 and California hazardous waste regulations set forth in Title 22, Division 4.5 of the California Code of Regulations, which will be followed to handle the waste. Wastes in solid form containing ≥50 ppm PCBs and liquid wastes containing ≥5 ppm PCBs will be transported for off-site disposal at a hazardous waste disposal facility approved by USEPA. If the waste is hazardous, it will be managed as further described in Section F.4 of this plan. If the waste contains <50 ppm PCBs (solids) or <5 ppm PCBs (liquids), it will be further evaluated for hazardous waste characteristics unrelated to PCB concentration, as applicable (e.g., toxicity due to other constituents associated with normal dust deposition) and will be transported off-site to an appropriate hazardous or nonhazardous waste disposal facility permitted to receive the waste.

1.3 Site Characterization

Once renovation/demolition at MHS is scheduled within the areas previously confirmed to contain ≥50 ppm PCBs (Library, Building E (Blue Building) Rooms 1, 5 and 8), additional characterization of building materials will be conducted prior to the start of any renovation or demolition activities, as described below. Given that PCB-impacted materials may remain in place for up to 15 years and the technologies available for site characterization and the regulations that will be in effect at the time of site characterization cannot be predicted at this time, a site-specific characterization plan providing details regarding the general approach described below will be provided to USEPA for approval at least 180 days prior to the planned

renovation/demolition.[11] The plan is anticipated to include a description of the sampling procedures, media to be sampled, sampling locations within each medium, sampling of adjacent substrates, and waste management and disposal procedures.

Generally, a building inspection, including a visual survey, will be conducted first. Representative samples of building materials will be collected for laboratory analysis prior to commencement of renovation/demolition work. During PCB characterization activities, representative samples may be collected, as necessary, from the following media: caulk, paint, mastics, sealants, wood, brick, concrete, nonporous building materials and any other building material suspected to contain PCBs based on the Building Inspection results to be completed by August 2014.

PCB characterization sampling will be conducted to evaluate the nature and extent of PCBs present in buildings materials. Based on the results of characterization sampling, specific areas will then be targeted for PCB remediation, as appropriate based on the concentrations of PCBs identified.

A flow chart detailing the procedures associated with Characterization is included within Figure 6. Descriptions of the sampling procedures, location identification, and evaluation of adjacent substrates are found in Appendix E.

1.4 Proposed ≥50 ppm PCB Removal/Remediation Procedures

Given that PCB-impacted materials may remain in place for up to 15 years and the technologies available for remediation and the regulations that will be in effect at the time of remediation cannot be predicted at this time, a revised site-specific remediation work plan, if needed (based upon the characterization results), providing details regarding the general approach described below will be submitted to USEPA for approval at least 60 days prior to the planned renovation/demolition.[12] The plan is anticipated to include a description of cleanup goals as well as the following remedial activities: 1) engineering controls, 2) air monitoring for workers, 3) remediation procedures for each medium, 4) encapsulation, 5) verification (confirmatory) sampling, 6) contingency planning, 7) waste management and disposal, and 8) recordkeeping and documentation.

Appendix F provides further details anticipated to be implemented for removing, cleaning up, and disposing of PCB-impacted media in the Library and Building E Rooms 1, 5, and 8 at MHS based on current USEPA regulations and guidance. A flow chart detailing the procedures associated with remediation is included within Figure 6.

[11] The 180-day period is intended to allow sufficient time: 1) for sampling to occur following USEPA approval, 2) for the District to develop a revised site-specific remedial work plan, if needed, for USEPA review and approval based on the sampling results, and 3) for the District to commence remedial activities within that 180-day period.

[12] The 60-day time period is intended to allow sufficient time: 1) for USEPA approval of the any revised site-specific remedial work plan based on the sampling results and 2) for the District to commence remedial activities within that 60-day period.

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Tables

Table 1. Summary of PCB Results - Air Samples
Malibu Middle/High School
30215 Morning View Drive
Malibu, California

	Initial Air Sampling[1]		Additional Air Sampling[2]		Post-Remediation[3]		Post-BMP Cleaning[2]		
	11/2/2013	Windows	12/21-22/2013	Windows	1/2-3/2014	Windows	1/4-6/2014	Windows	% Reduction
EPA's Threshold:				**200**					
Library	49.12	Closed			29.24	Closed			40.5%
Room 1	57.47	Closed			27.85	Closed			51.5%
Room 2	16.04	Closed					8.61	Closed	46.3%
Room 5	23.92	Closed			11.41	Closed			52.3%
Room 8	15.66	Closed			7.37	Closed			52.9%
Room 9	26.86	Closed					12.09	Closed	55.0%
Room 103	20.36								
Room 104	20.64								
Room 105	13.15								
Room 301	37.99	Closed			11.93	Closed			68.6%
Room 3			10.22	Open			9.19	Open	10%
Room 4			3.91	Open			3.74	Open	4%
Room 6			5.52	Closed			4.73	Closed	14%
Room 7			8.94	Open			8.09	Open	10%
Room 10			2.92	Open			3.07	Open	-5%
Room 14			10.16	Closed			8.75	Closed	14%
Room 16			14.12	Open			13.3	Open	6%
Room 17			7.43	Closed			6.53	Closed	12%
Room 302			39.96	Closed			37.19	Closed	7%
Room 303			18.2	Closed			16.93	Closed	7%
Gym Faculty Office			96.65	Closed			89.02	Closed	8%
Outdoor			1.23		1.11				
		Min	2.92				3.07		
		Max	96.65				89.02		

Q:\S\SMMUSD\0433980B Best Management Practices\Malibu Specific Plan\[MHS Summary of PCB results Tables 1 - 3.xlsx]air samples

Notes:
All results are reported in nanograms per cubic meter (ng/m^3)
No airborne sample exceeded EPA's airborne health-based criteria of 200 ng/m^3
Not tested.
Other sampling in these rooms either exceeded 50 ppm for bulk sample or 10 ug/100cm2 for wipe sample.

References:

[1] Phylmar Group. Initial Environmental Sampling Report. January 2014.
[2] Phylmar Group. Pre- and Post-Best Management Practices Cleaning Polychlorinated Biphenyl Air Sampling Report. February 2014.
[3] Phylmar Group. Limited Polychlorinated Biphenyl Remediation and Verification Sampling Report. February 2014.

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Table 2. Summary of PCB Results - Wipe Samples
Malibu Middle/High School
30215 Morning View Drive
Malibu, California

	11/2/2013[1]			1/3/2014[2]			% Reduction		
TSCA Cleanup Threshold:	10								
	Interior Sill Plaster/Metal	**Exterior Sill Metal**	**Interior Floor**	**Interior Sill Plaster/Metal/tile**	**Exterior Sill Metal**	**Interior Floor**	**Interior Sill**	**Exterior Sill**	**Interior Floor**
Library	7.92	47.6	0.01	0.28	0.05		96.5%	99.9%	
Room 1	11.4	0.47	0.69	0.1		0.03	99.1%		95.7%
Room 2	0.97	0.07	0.18						
Room 5	14.7	1	0.71	0.05			99.7%		
Room 8	3.34	0.27	0.53	0.03			99.1%		
Room 9	0.84	0.23	0.49						
Room 103	0.77	0.02	0.73						
Room 104	0.83	0.18	0.16						
Room 105	0.96	0.55	0.15						
Room 301	24.6	0.02	0.93	1.83			92.6%		
Office next to boy's room				0.07					

Q:\S\SMMUSD\0433980B Best Management Practices\Malibu Specific Plan\[MHS Summary of PCB results Tables 1 - 3.xlsx]wipe samples

Notes:
All results are reported in micrograms per 100 square centimeters (ug/100cm^2)
Not sampled
Exceeding EPA's 10 ug/100cm^2

References:
[1] Phylmar Group. Initial Environmental Sampling Report. January 2014.
[2] Phylmar Group. Limited Polychlorinated Biphenyl Remediation and Verification Sampling Report. February 2014.

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Table 3. Summary of PCB Results - Bulk Samples
Malibu Middle/High School
30215 Morning View Drive
Malibu, California

	11/6/2013 [1]	
TSCA Threshold:	**50**	
	Window Caulk	**Interior Wall Paint**
Library	1,870	15.2
Room 1	164	32.3
Room 2	6.33	7.27
Room 5	98.7	16
Room 8	52.8	14.7
Room 9	19.9	16.7
Room 103	6.69	2.57
Room 104	7.15	8.83
Room 106	1.19	5.08
Room 301	9.16	40.1

Q:\S\SMMUSD\0433980B Best Management Practices\Final\[MHS Summary of PCB results Tables 1 - 3.xlsx]bulk samples

Notes:
All results are reported in parts per million (ppm)
Exceeding 50 ppm

References:
[1] Phylmar Group. Initial Environmental Sampling Report. January 2014.

Figures

NOTES:
1. Scale and all locations are approximate.

0 400
SCALE IN FEET

ENVIRON

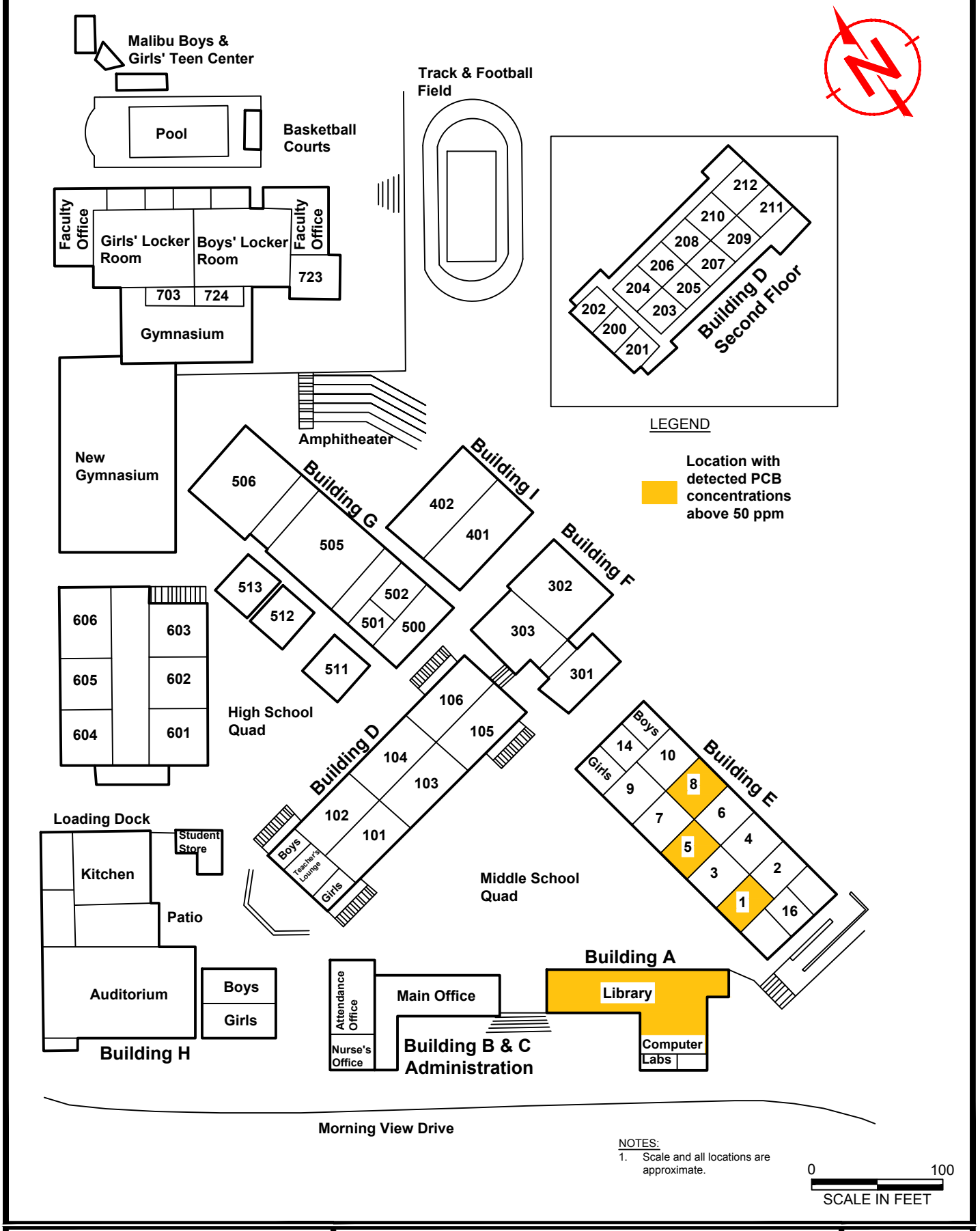
DRAFTED BY: JPH | DATE: June 2014

Aerial Photograph
Malibu High School
30215 Morning View Drive
Malibu, California

FIGURE
1

04-33980B

JHNATKO 6/26/14 [AERIAL] N:\ACTIVE PROJECTS\CAD\SMMUSD



ENVIRON

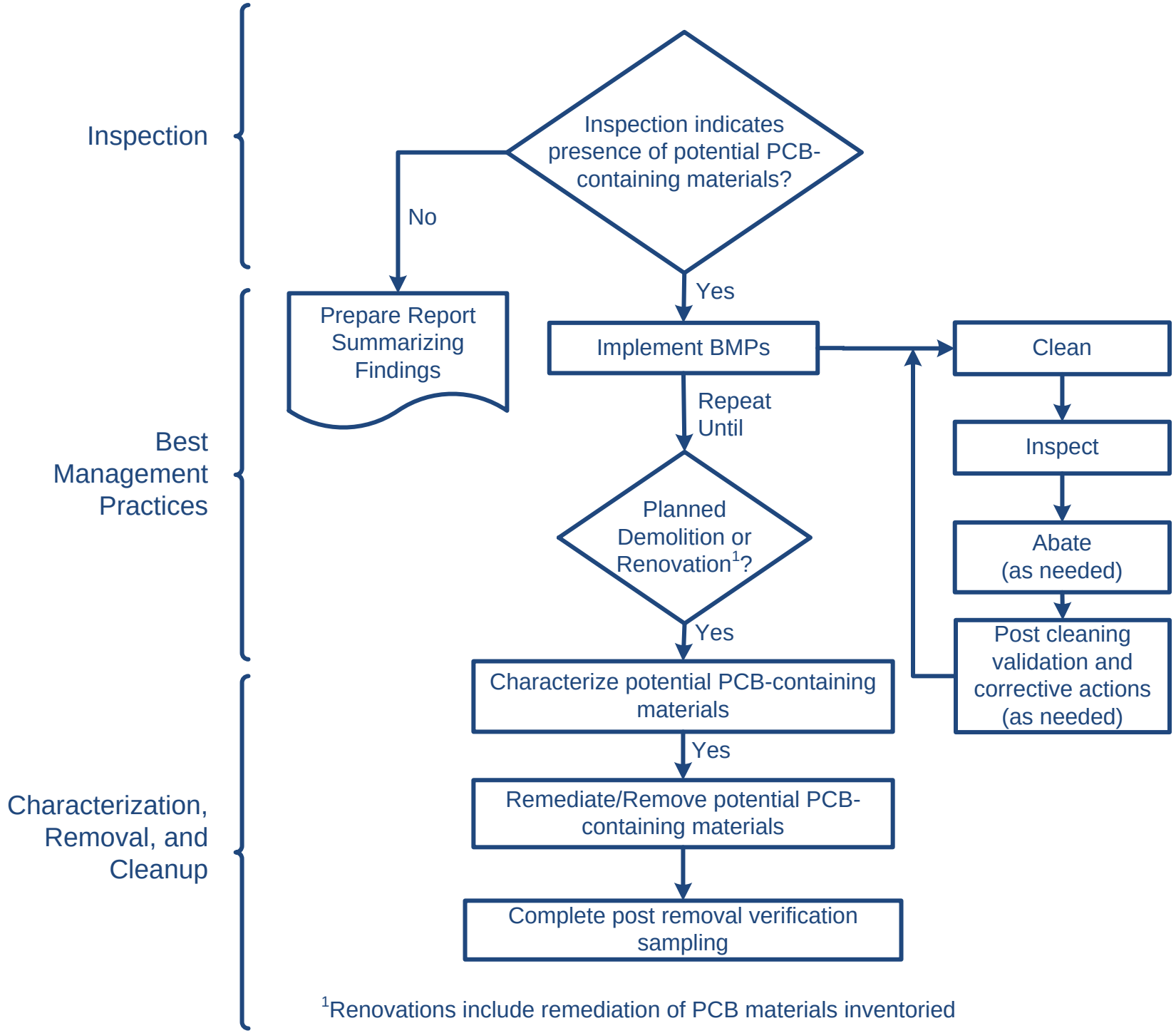
Site Plan
Malibu High School
30215 Morning View Drive
Malibu, California

FIGURE
2

DRAFTED BY: JPH | DATE: June 2014 | 04-33980B

JHNATKO 6/26/14 [SITEPLAN] N:\ACTIVE PROJECTS\CAD\SMMUSD

Figure 3: Overall Approach to PCB Management



[1]Renovations include remediation of PCB materials inventoried

ENVIRON

Figure 4: Building Materials Inspections

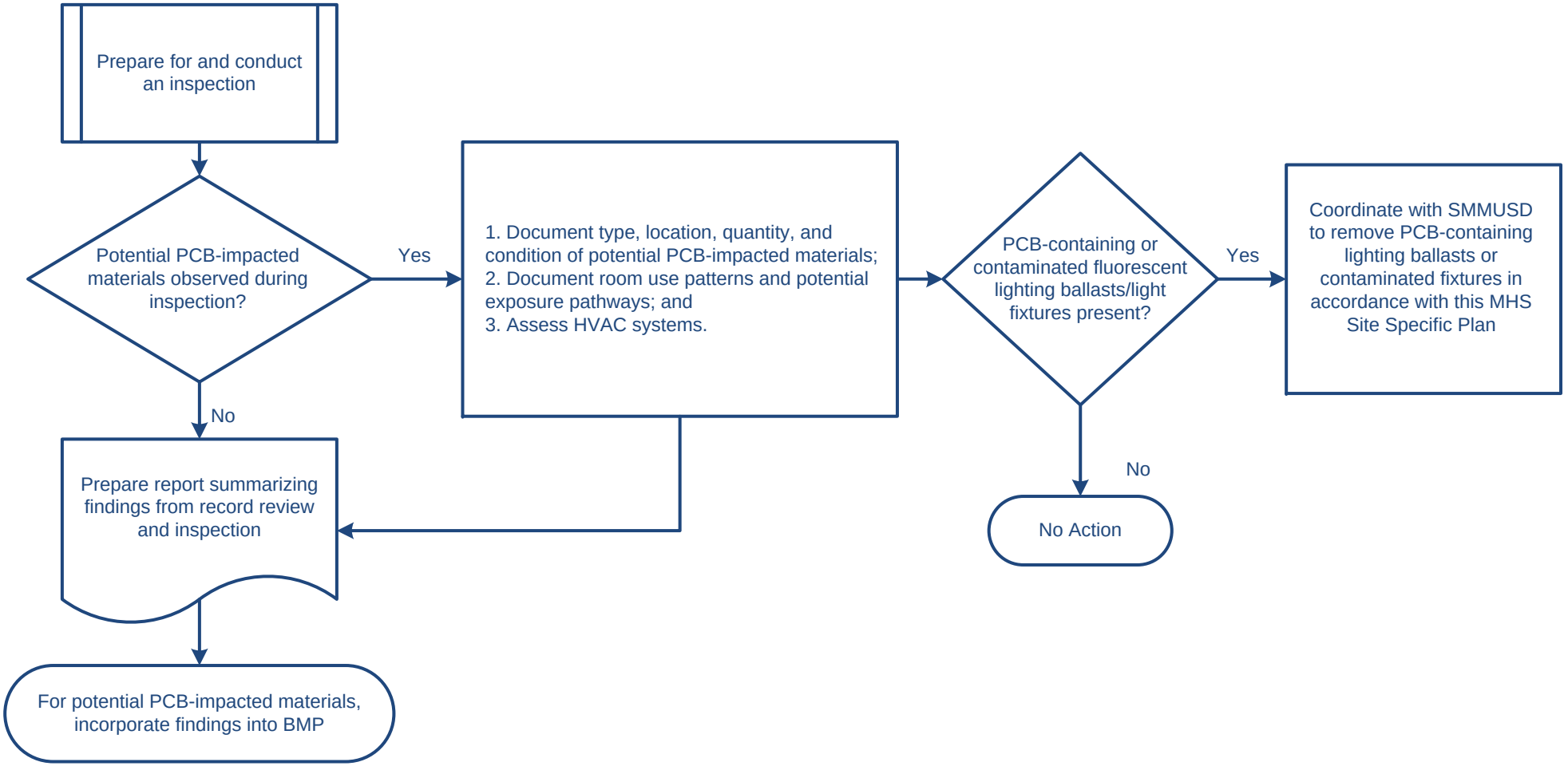


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Figure 5: Best Management Practices Implementation

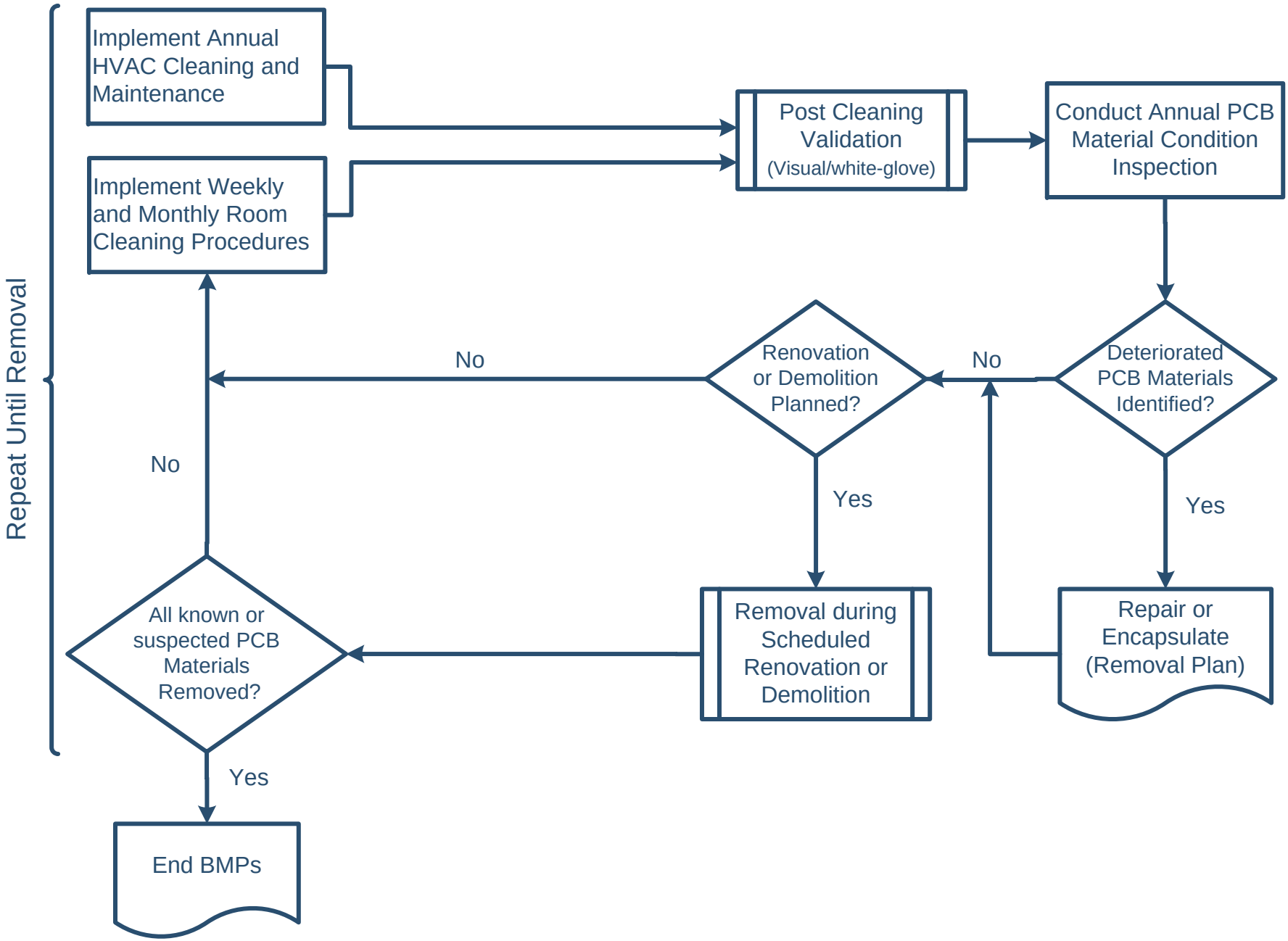

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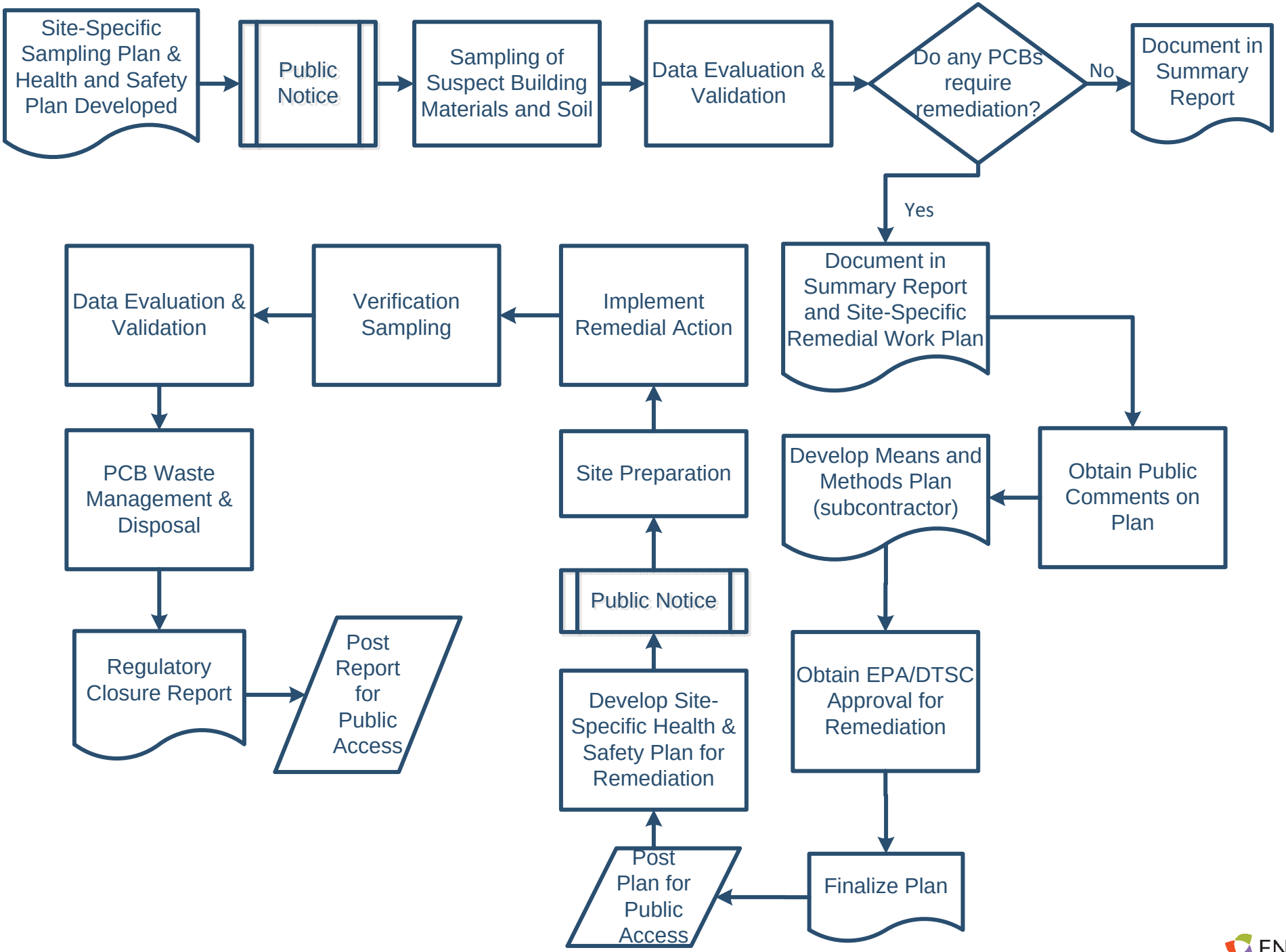
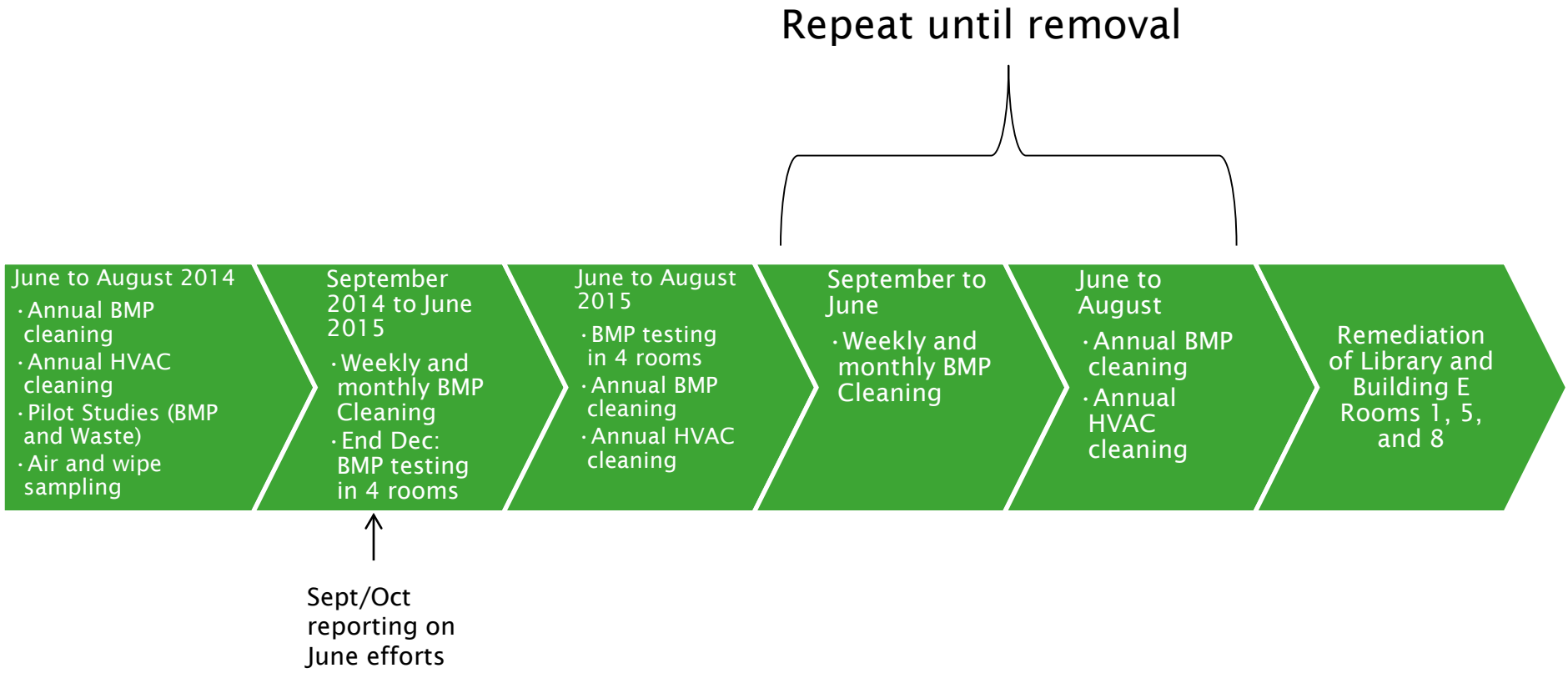
Figure 6: Characterization, Removal, and Cleanup Plan Prior to Demolition or Renovation



ENVIRON

Figure 7: Timeline for MHS Library and Building E Rooms 1, 5, and 8



Appendix A

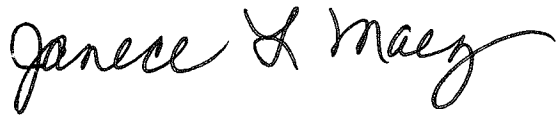
Notification and Certification

Certification
Site-Specific PCB-Related Building Materials Management, Characterization and Remediation Plan for the Library and Building E Rooms 1, 5, and 8 at Malibu High School
Santa Monica-Malibu Unified School District
Malibu High School, 30215 Morning View Drive, Malibu, California

Cleanup activities are planned for the Malibu High School located at 30215 Morning View Drive, Malibu, California ("Site") as described in the above Site-Specific PCB-Related Building Materials Management, Characterization and Remediation Plan for the Library and Building E Rooms 1, 5, and 8 at Malibu High School ("Site-Specific Plan"). In accordance with 40 CFR 761.61(a)(3)(i)(E) and 761.61(c), the undersigned parties hereby certify that all sampling plans, sample collection procedures, sample preparation procedures, extraction procedures, and instrumental/chemical analysis procedures used to assess or characterize the PCB contamination at the Site are on file and available for USEPA inspection at the offices of SMMUSD, 1651 Sixteenth Street, Santa Monica, CA 90404.

Each person signing this document represents that he or she is authorized to do so on behalf of the party for whom such execution is made.

Santa Monica-Malibu Unified School District

Signature: 

Name: Janece L. Maez

Title: Associate Superintendent, Business and Fiscal Services

Date: July 3, 2014

Appendix B

Summary of Previous PCB Investigation Results

B.1 Summary of Previous PCB Investigation Results

B.1.1 Description of all Air, Wipe and Bulk Samples

The Phylmar Group, Inc. ("Phylmar") conducted initial air, wipe, and bulk sampling for PCBs in the library, and in Buildings D, E, and F at the MHS campus in early November 2013.[13] A site plan is presented as Figure 2. PCB sampling results are summarized in Tables 1 through 3 and a brief discussion of this initial sampling event is provided below:

- On November 2, 2013, air samples were collected over 24 hours with the doors and windows closed and the ventilation system turned off. These conditions were selected to provide a worst case indoor air scenario by isolating the potential airborne sources of PCBs and by avoiding dilution of airborne PCB concentrations with either outdoor air or the indoor ventilation system. Air sampling PCB results ranged from 13.2 to 57.5 ng/m^3, which were all below 200 ng/m^3, which is USEPA's health-based standard. Air sampling data are summarized in Table 1;
- On November 6, 2013, PCB wipe sampling of exterior and interior window sills and interior floor tile was conducted in general accordance with 40 CFR 761.123. Wipe sampling PCB results ranged up to 47.6 µg/100cm^2, with 4 samples out of 30 (13%) exceeding USEPA's previously stated regulatory level[14] of 10 µg/100cm^2. Wipe sampling data are summarized in Table 2; and
- On November 6, 2013, bulk samples of window caulk and paint were collected at locations listed in Table 3. Bulk sampling PCB results in both media ranged from 1.19 to 1,870 ppm. Four out of 20 (20%) samples exceeded USEPA's regulatory level of 50 ppm. The four samples that exceeded where of caulk materials. Specifically, caulk samples that contained ≥50 ppm PCBs included those from the Library, and Building E (Blue Building) Rooms 1, 5 and 8. Bulk sampling data are summarized in Table 3.

In order to gather PCB data for a larger portion of MHS, additional air samples were collected by Phylmar on December 21-22, 2013.[15] These data are also summarized in Table 1. No air samples exceeded 200 ng/m^3 for PCBs. It should be noted that some of the windows were open and some were closed during this round of testing.

On December 26 to 30, 2013, NRC performed BMP cleaning (using a solvent) in the Library, Room 1, 5, and 8 of Building E, as well as Room 301 of Building F. All of these rooms were identified through the sampling data above as containing wipe or bulk samples in exceedance of 10 µg/100cm^2 or 50 ppm, respectively.

Phylmar conducted post-cleaning air and wipe sampling on January 2 and 3, 2014 in the Library, Room 1, 5, and 8 of Building E, as well as Room 301 of Building F.[16] Results are

[13] 2014. Phylmar Group. Initial Environmental Sampling Report. January.
[14] Letter from Steve Armann/USEPA to Sandra Lyon/SMMUSD dated January 27, 2014.
[15] 2014. Phylmar Group. Pre- and Post-Best Management Practices Cleaning Polychlorinated Biphenyl Air Sampling Report. February.
[16] 2014. Phylmar Group. Limited Polychlorinated Biphenyl Remediation and Verification Sampling Report. February.

summarized in Tables 1 and 2. No air or wipe samples exceeded 200 ng/m^3 or 10 µg/100cm^2 for PCBs, respectively.

On December 26 to 30, 2013, NRC also performed BMP cleaning in 12 rooms throughout Buildings E and F as well as the Gym Faculty office in Building J. On January 4-6, 2014, Phylmar collected post-cleaning air samples in those rooms, and the results are shown in Table 1. No air samples exceeded 200 ng/m^3 for PCBs.

B.1.2 Summary of Sampling Results

In summary, between November 2013 and January 2014, air, wipe and bulk samples were collected at MHS for PCB analysis. No air samples were found to exceed 200 ng/m^3, which is USEPA's health-based standard they specified for MHS.[17] Four wipe samples were found to exceed USEPA's previously stated regulatory level of 10 µg/100cm^2. However, all four locations were cleaned on December 26 to 30, 2013, and the post-cleaning wipe samples were all less than 10 µg/100cm^2. Four bulk samples of window caulk with ≥50 ppm PCBs still remains at MHS in the Library and Building E Rooms 1, 5, and 8. As defined in 40 CFR 761.3, the caulk is PCB Bulk Product Waste as it contains ≥50 ppm PCBs. Therefore, the District intends to implement BMPs prior to additional characterization and remediation of these rooms during the next planned and funded renovation or demolition of these four rooms.

[17] Letter from Steve Armann/USEPA to Sandra Lyon/SMMUSD dated January 27, 2014

Appendix C

Management In Place
Implementation of BMPs Prior to Remediation/Renovation Activities

C.1 Management in Place – Implementation of BMPs Prior to Remediation/Renovation Activities

Currently, the timing for beginning removal of ≥50 ppm PCB-impacted building materials identified at MHS is anticipated to begin within 9–12 months after a Coastal Commission Permit is issued to the District. However, it is not clear how long it will take for that permit to be issued. It is likely that the intended remediation of ≥50 ppm PCB-impacted building materials would not be completed within the June 4, 2015 timeframe specified in USEPA's June 4, 2014 letter to the District. Therefore, the District proposes to manage this material in place (in the Library and Building E Rooms 1, 5, and 8) for up to 15 years or until removal/remediation of ≥50 ppm PCB-impacted materials occur, whichever is sooner. The District will maintain management in place BMPs as described in this plan during this time period. We also propose an option to extend this period, if needed, with concurrence with USEPA. This approach is consistent with USEPA Region I's agreement with the University of Massachusetts.[1]

Therefore, if renovations and remediation of the four rooms where PCBs were identified above 50 ppm are not completed by June 4, 2015, a schedule for further implementation of BMPs, which will be commencing in the summer of 2014, is provided in Figure 7. This schedule also includes the sampling and analysis of air and wipe samples in the four rooms known to have PCB-impacted caulk above 50 ppm.

A flow chart detailing the procedures associated with management in place, which includes both Building Inspections and BMPs, are provided as Figures 4 and 5, respectively.[2]

C.1.1 Building Inspection

A PCB-Related Building Materials Inspection Plan ("Inspection Plan") was included as Section 2 of the *Comprehensive PCB-Related Building Materials Inspection, Management, and Removal Plan*, prepared by ENVIRON in April 2014. The Inspection Plan provided information on its objectives and the procedures that will be followed to conduct an inspection for materials suspected of being impacted by PCBs at schools located within the SMMUSD. The Inspection Plan covered the objectives and responsibilities under this plan and was organized into three main inspection sections: pre-inspection activities, inspection procedures, and post-inspection activities. Information gathered during the inspection on the types, locations, quantities/sizes, and conditions of building materials that could potential contain or have been potentially impacted by PCBs will be used to select appropriate BMPs for those materials. A flow chart detailing the procedures associated with Building Inspections is provided as Figure 4.

In addition to the information provided in the *Comprehensive PCB-Related Building Materials Inspection, Management, and Removal Plan*, the following activities will be conducted at MHS:

[1] 2012. Consent Agreement and Final Order from USEPA Region I to University of Massachusetts System. TSCA-01-2012-036.

[2] Although not covered by this Specific Plan, the BMPs outlined in this plan will also be generally followed in all pre-1981 buildings at MHS until renovation or demolition of those structures, as noted in specific parts of the BMP section of this plan.

- Despite any availability of construction records, buildings at MHS or rooms constructed before 1981 will be inspected.
- Fluorescent light fixtures and non-fluorescent light fixtures (if present) will be inspected, including, where appropriate, both the ballasts and the fixtures.
- Dust collected by the contractor cleaning the HVAC system at MHS during June/July 2014 will be sampled and tested as part of the waste characterization pilot study described below.

Building inspections of MHS, including the Library and Building E Rooms 1, 5, and 8, implemented according to the procedures referenced and cited herein, began on June 16, 2014. Results of the Building Inspections will be documented in an inventory of potential PCB primary sources and "assumed" potential PCB-impacted building materials (secondary sources).

C.1.2 Best Management Practices

BMPs will be conducted at MHS to manage PCB-impacting building materials potentially present and to minimize exposures potentially encountered by students, school teachers and staff prior to any confirmed ≥50ppm PCB-impacted building materials being removed. A BMP Plan was included as Section 3 of the *Comprehensive PCB-Related Building Materials Inspection, Management, and Removal Plan*, prepared by ENVIRON in April 2014. The April BMP Plan is generally applicable for the school buildings at MHS that were built or renovated prior to 1981. With the exception of light ballast and light fixture removal, all BMPs described below were contained in the April BMP Plan.

A flow chart detailing the procedures associated with BMPs is provided as Figure 5.

C.1.2.1 Cleaning and Inspection Procedures

The Managers of Facilities or designee will monitor the cleaning procedures of the custodial workers in areas identified as potentially impacted PCB building materials as described in Section 1.2.2 of the plan's main text. Key topics discussed in Section 1.2 are not repeated in this appendix.

Routine Cleaning

See Section 1.2.2.1 of main text of this plan for description.

Annual Cleaning

See Section 1.2.2.2 of main text of this plan for description.

Cleaning of Tools and Equipment

Tools and equipment will be cleaned so that cross contamination and dirt buildup is minimized. The following procedures will be followed:

- Cloths, sponges, and mops will be cleaned before being used for a different location;
- Water buckets will be cleaned periodically to avoid dirt buildup;
- The HEPA vacuum cleaner will be inspected periodically for signs of dirt buildup in the interior and exterior surfaces. If present, dirt will be completely cleaned with wipes.

- HEPA filters will be replaced periodically per the recommendations of the manufacturers of the filters and used filters will be disposed of properly as determined during the pilot study described below.

As described in Section 1.2.6 of the main plan text, a pilot study will be conducted during the BMP cleaning at MHS during June through August 2014 to identify the applicable waste disposal requirements under TSCA 40 CFR 761, which will be followed to handle the waste following consultation with USEPA.

C.1.2.2 Heating, Ventilation, and Air Conditioning Systems

Adequate ventilation in the rooms helps reduce the potential for accumulation of PCBs in the indoor air. Ventilation provided for the rooms at MHS includes one or more of the following:

- Open windows
- Unit ventilators
- Central exhaust system

Unit ventilators and central exhaust systems are collectively referred to as part of the “HVAC system” in this plan. Windows should be opened, if weather allows, and ventilation systems should be turned on prior to the start of the school in the morning to dilute any potential accumulation of PCBs in the air overnight and the rooms should continue to be ventilated when they are occupied.

To help appropriate operation of the ventilation system and minimize potential PCB concentrations in air, maintenance employees will:

- Conduct routine and annual cleaning for the HVAC system as described in Section 1.2.2.1 and 1.2.2.2, respectively, of the main text of this plan
- Monitor that the airflow is not obstructed;
- Use filters with a minimum efficiency reporting value (MERV) of 14, or highest for which the HVAC system is designed if it cannot accommodate MERV 14 filters, and inspect and change them at the frequency recommended by the manufacturer or every 6 months, whichever comes sooner;
- Conduct or assist in an annual maintenance overhaul for the HVAC system, including the ducts;
- Lubricate fan motors as necessary and keep them clean; and
- Adjust fresh air inlet dampers on supply fans or heating stacks when necessary.

C.1.2.3 PCB Material Condition Inspection and Reporting

The Managers of Facilities will perform detailed inspections of potentially PCB-impacted materials inventoried at MHS once a year. The primary goal of these inspections is to visually check and document the conditions of suspected or known PCB materials the inventory generated as described above. The observed conditions will be documented and updates will

be made to inventory, when necessary. When damaged or deteriorated materials with known PCB concentrations ≥ 50 ppm are observed, the manager or designee will take immediate action to secure the area and consult ENVIRON for further steps.

The custodial workers or maintenance employees will also report to their managers for any damaged/deteriorated inventoried materials noticed during the routine or annual cleaning.

C.1.2.4 Procedures for Removal of Light Fixtures/Light Ballasts

Light ballasts with the potential to contain PCBs and light fixtures with visible residues from potential past leakage of ballast will be removed within 360 days, or sooner, of identification to allow for planning, contracting, and development of a schedule to work around school schedules. Light ballasts that do not have a label confirming the absence of PCBs will be assumed to contain PCBs. When removing light fixtures and ballasts, a licensed contractor will be hired and follow USEPA recommended removal recommendations.

When removing light fixtures and ballasts, a licensed contractor will follow the general procedure below:

- Prior to beginning the removal work, the work area will be marked with barricades and warning signs to guard against unauthorized entry into the work area.
- The work area will not be left unattended after removal has begun and until ballasts and PCB-impacted wastes have been sealed in appropriate containers.
- The floor below the light fixtures will be covered with polyethylene sheeting to protect the floor from PCB-impacted materials.
- Light bulbs or tubes will be removed and fixtures will be taken down and placed on polyethylene sheeting on the floor.
- Light fixtures may be partially dismantled to allow the fixture to fit in the specified container.
- All PCB-impacted materials, including light ballasts, fixtures, spent solvents, rags, gloves, and protective clothing will be stored in sealed and labeled steel drums for off-site disposal.
- In order to expedite removal, the drums of PCB-impacted waste will be disposed of in accordance with 40 CFR 761.61 at a facility permitted to accept PCB Bulk Product Waste; shipping and disposal will be documented using hazardous waste manifests as further described in Section F.4 of this plan.

C.1.2.5 Procedures for Deteriorated PCB-Impacted Building Materials

C.1.2.5.1 Identification Actions

- If deteriorated (i.e., damaged) potential PCB-impacted building materials[3] are observed, the Managers of Facilities will be notified as part of the inspection reporting.
- Within 5 days of notification of the Manager of Facilities, maintenance employees (under the supervision of the Manager of Facilities) will install a temporary barrier (e.g. metallic tape) to cover deteriorated potential PCB building materials prior to its repair, encapsulation, or

[3] As identified in the inventories developed during the Building Inspection phase.

removal and place caution signs or tape around the area. Unless authorized in writing by USEPA, the temporary barrier shall be used for no longer than four weeks after the deteriorated building material is first identified.

- The Manager will communicate with ENVIRON (or other District contractor) about the observation of the damaged potential PCB building materials.
- ENVIRON (or other District contractor) will evaluate the damaged potential PCB building materials and, in consultation with USEPA, evaluate appropriate abatement efforts among the options listed in Section C.1.2.5.2.
- Once the option is selected, the Manager of Facilities or ENVIRON, if requested by the District, will coordinate a repair action.

C.1.2.5.2 Options to Rectify Deteriorated Building Materials

C.1.2.5.2(a) Patch or Repair

Patching using new caulk will be done if possible; repairs would be done in situations where patching of damage caulk would not be suitable (e.g., too much loose caulk is present). Before starting patch or repair, the work area will be set up with 6-mil poly protection to minimize dust accumulating on the nearby surfaces and collect debris. Movable furniture will be placed in a different area. If deemed necessary, containment with negative pressure will be erected. The HVAC system will be isolated by blocking the air distribution openings with plastic sheeting or other appropriate means. Dust generation will be minimized by using wet methods and/or HEPA filter vacuuming during patch or repair. The workers will wear appropriate personal protection equipment (PPE), including, gloves, Tyvek suit, and shoe cover.

After patch or repair, the immediate surfaces will be vacuumed with a HEPA-filtered vacuum cleaner and then wiped with a wet cloth. The work area will then be visually inspected to monitor that no dust or debris is present and the area will be re-cleaned thoroughly if dust or debris is identified. All the waste and contaminated items will be placed in a sealed container in a secured area for appropriate off-site disposal.

Asbestos surveys have been conducted for MHS and asbestos-containing building materials (ACBM) are being managed in place following the procedures in the Asbestos Operations and Maintenance Plan (O&M Plan). When damaged building material is an ACBM, repair or patch will only be conducted by asbestos certified workers. When damaged building material is not identified in the O&M Plan but is suspected to contain asbestos, the material will be sampled and will be analyzed by a qualified laboratory for asbestos. If confirmed by laboratory analyses, the repair or patch will only be conducted by asbestos certified workers.

C.1.2.5.2(b) Encapsulation of PCB Building Materials

Encapsulation is a commonly used abatement technique that is intended to reduce PCB exposure in buildings. Encapsulation is accomplished by covering the surface(s) of PCB building materials with a coating material that serves as a barrier to minimize the release of a contaminant from a source.

Effective encapsulants can reduce PCB concentrations at the exposed surfaces and eventually in indoor air.[4] Generally, coating materials that are better at resisting the migration of PCBs from the source tend to perform better at reducing the concentrations of PCBs on the surfaces and in indoor air. Resistance to PCB migration is the key in selecting the most effective encapsulants for PCB sources. Prior to the use of encapsulants, the District will confer with USEPA on this matter. If encapsulants are proposed, the District will follow procedures outlined in Appendix F of this plan and will develop a continued schedule for collection of air and wipe samples, in consultation with USEPA, to verify encapsulant effectiveness.

On-site encapsulation would generally be an interim solution, and appropriate disposal of any remaining PCB wastes would be required upon removal of the material or at the time of structure renovation or demolition.

C.1.2.5.2(c) Protocols Applicable to Removal of PCB-Impacted Building Materials

If it is decided not to repair deteriorated PCB building materials, they will be encapsulated or removed following the procedures described in Appendix F.

C.1.2.6 Post-Cleaning Validation and Corrective Action

C.1.2.6.1 Validation

Post-cleaning validation, which can be performed by the Manager of Facilities or designees, will be conducted to evaluate the effectiveness of the BMP Plan. After each monthly cleaning, the post-cleaning validation will include the following activities in representative locations:

- Observe if there is any visible dust accumulation in the rooms. If dust is observed, the surface(s) will be re-cleaned.
- Upon passing the visual inspection, assess the cleanness of the surface by swiping the surfaces with a hand wearing a white glove to assist in visual assessment. If dust or discoloration is observed on the glove, the surface(s) will be re-cleaned.
- White-glove inspections will be conducted after each monthly cleaning.

Validation of this approach is being conducted as part of the proposed BMP pilot study described in Section 1.2.3.

C.1.2.6.2 Corrective Actions

Surfaces that do not pass the white-glove test will be re-cleaned.

C.1.2.7 PCB Waste Disposal

PCB wastes generated during implementation will primarily consist of cleaning dust, cleaning materials (i.e. rags, etc.) and cleaning water. The used HEPA filters for the vacuum cleaners and collected dusts will be stored in designated containers. Other PCB waste, such as debris, could be also generated when repairing or encapsulating damaged PCB materials.

[4] Laboratory Study of Polychlorinated Biphenyl (PCB) Contamination and Mitigation in Buildings, Part 3. Evaluation of the Encapsulation Method. EPA/600/R-11/156B, April 2012.

NRC did test the dust collected during their cleaning conducted at MHS in January for PCBs. The results showed a total PCB (all was Aroclor-1254) amount of 1.1 ppm (see Attachment C-1).

A pilot study will be conducted during the BMP cleaning at MHS during June through August 2014 to identify the applicable waste disposal requirements under TSCA 40 CFR 761 and California hazardous waste regulations set forth in Title 22, Division 4.5 of the California Code of Regulations, which will be followed to handle the waste.

C.1.2.8 Communication and Education, Training, and Recordkeeping

Refer to the BMP Plan in ENVIRON's April 2014 Comprehensive PCB-Related Building Materials Inspection, Management, and Removal Plan for a detailed discussion on Communication and Education, Training, and Recordkeeping procedures to be followed at MHS associated with PCBs. Communication and education related to reducing exposure potential is described in Section 1.2.1.

C.1.3 Air and Wipe Sampling MHS Pilot Study on BMPs

See Section 1.2.3 for description.

C.1.4 Proposed Cleanup Levels for Air and Wipe Samples

See Sections 1.2.3.a and 1.2.3.2 for further description.

C.1.5 Reporting Requirements

For any building investigations or sampling done in the Library or Building E Rooms 1, 5, and 8, a report that contains a summary of all of the inspection and sampling results, conclusions from the data, and any recommendations would be provided to USEPA within 45 days of completion of the field efforts and receipt of the laboratory data.

Enviro – Chem, Inc.
1214 E. Lexington Avenue, Pomona, CA 91766 Tel (909) 590-5905 Fax (909) 590-5907

Date: December 31, 2013

Mr. Frank Garrett
NRC Environmental Services
3777 Long Beach Blvd., Suite 100
Long Beach, CA 90807
Tel(310)629-0859 Email:fgarrett@nrcc.com

Project: **SMMUSD Job #79563**
Lab I.D.: **131230-2**

Dear Mr. Garrett:

The **analytical results** for the solid sample, received by our laboratory on December 30, 2013, are attached. The sample was received intact, accompanying chain of custody.

Enviro-Chem appreciates the opportunity to provide you and your company this and other services. Please do not hesitate to call us if you have any questions.

Sincerely,

Curtis Desilets
Vice President/Program Manger

Andy Wang
Laboratory Manager

Enviro – Chem, Inc.
1214 E. Lexington Avenue, Pomona, CA 91766 Tel (909) 590-5905 Fax (909) 590-5907

LABORATORY REPORT

CUSTOMER: **NRC Environmental Services**
3777 Long Beach Blvd., Suite 100
Long Beach, CA 90802
Tel(310)629-0859 Email:fgarrett@nrcc.com

PROJECT: **SMMUSD Job #79563**
MATRIX:SOLID
DATE SAMPLED:12/29/13
REPORT TO:MR. FRANK GARRETT

DATE RECEIVED:12/30/13
DATE EXTRACTED:12/30/13
DATE ANALYZED:12/30/13
DATE REPORTED:12/31/13

PCBs ANALYSIS
METHOD: EPA 8082
UNIT: mg/Kg = MILLIGRAM PER KILOGRAM = PPM

SAMPLE I.D.	LAB I.D.	PCB-1016	PCB-1221	PCB-1232	PCB-1242	PCB-1248	PCB-1254	PCB-1260	TOTAL PCBs*	DF
#79563	131230-2	ND	ND	ND	ND	ND	1.10	ND	1.10	20
Method Blank		ND	ND	ND	ND	ND	ND	ND	ND	1
	PQL	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	

COMMENTS
DF = Dilution Factor
PQL = Practical Quantitation Limit
Actual Detection Limit = DF X PQL
ND = Non-Detected Or Below the Actual Detection Limit
* = Sum of the PCB 1016, 1221, 1232, 1242, 1248, 1254 and 1260
*** = The concentration exceeds the TTLC Limit of 50, and the sample is defined as hazardous waste as per CCR-TITLE 22 (if marked)

Data Reviewed and Approved by: _____
CAL-DHS ELAP CERTIFICATE No.: 1555

Enviro-Chem, Inc.
1214 E. Lexington Avenue, Pomona, CA 91766 Tel (909)590-5905 Fax (909)590-5907

QA/QC Report

Analysis: EPA 8082 (PCB)

Matrix: **Soil/Solid/Liquid/Sludge** Date Analyzed: **12/30/2013**

Unit: mg/Kg (PPM)

Matrix Spike (MS)/Matrix Spike Duplicate (MSD)

Spiked Sample Lab I.D.: 131230-LCS1/2

Analyte	S.R.	spk conc	MS	%REC	MSD	%REC	%RPD	ACP % RPD	ACP %REC
PCB (1016+1260)	0.00	0.100	0.096	**96%**	0.098	**98%**	**2%**	**0-20%**	**70-130**

LCS STD RECOVERY:

Analyte	spk conc	LCS	% REC	ACP %REC
PCB (1016+1260)	0.100	0.120	**120%**	**75-125**

S.R. = Sample Result
spk conc = Spike Concentration
%REC = Percent Recovery
ACP %RPD = Acceptable Percent RPD Range
ACP %REC = Acceptable Percent Recovery Range

Analyzed and Reviewed By: _____

Final Reviewer: _____

Enviro-Chem, Inc. Laboratories
1214 E. Lexington Avenue,
Pomona, CA 91766
Tel: (909) 590-5905 Fax: (909) 590-5907
CA-DHS ELAP CERTIFICATE #1555

Turnaround Time
- O Same Day
- O 24 Hours
- ~~O 48 Hours~~
- O 72 Hours
- O 1 Week (Standard)
- Other: By 1/2/13

RUSH

Misc. PO# 13531

SAMPLE ID	LAB ID	SAMPLING DATE	SAMPLING TIME	MATRIX	No. OF CONTAINERS	TEMPERATURE	PRESERVATION	Analysis Required: PCB	COMMENTS
# 79563	131230-2	12/29/13	1500	S	1	N	N	X	
					bag				

Company Name: NRC ENVIRONMENTAL SERVICES
Address: 3777 LONG BEACH BLVD. SUITE 100
City/State/Zip: LONG BEACH, CA.

Project Contact: FRANK GARRETT
Tel: 310-629-0859
email. ~~Fax:~~ fgarrett@nrcc.com

Sampler's Signature:
Project Name/ID: SMMUSD
Job# 79563
PO# 13531

Relinquished by:	Received by:	Date & Time: 12/30/13 0810
Relinquished by:	Received by:	Date & Time:
Relinquished by:	Received by:	Date & Time:

Instructions for Sample Storage After Analysis:
~~O Dispose of~~ O Return to Client O Store (30 Days)
O Other:

CHAIN OF CUSTODY RECORD

Date: _____

WHITE WITH SAMPLE • YELLOW TO CLIENT

Appendix D

Air and Wipe Sampling MHS Pilot Study Sampling Plan

June 18, 2014

MEMORANDUM

To: Tom Huetteman, Assistant Director, RCRA Branch, Land Division, EPA Region IX

From: Doug Daugherty, Eric Wood, Yi Tian, ENVIRON

Cc: Steve Armann and Carmen Santos, EPA Region IX
Sandra Lyon and Jan Maez, SMMUSD

Re: Additional Information on the Selection of Representative Rooms for Air/Wipe Testing – Revision 2

The following was prepared by ENVIRON and is intended to provide additional information on the collection of air and wipe samples at Malibu High School (MHS)[1]during the summer of 2014 (June 16 through August 8) as requested by EPA in its June 4, 2014 letter to SMMUSD (specifically, the request related to the sampling plan for MHS and comments A.2 and A.3).

The goal is to obtain samples from a sufficient number of locations and site-specific conditions to:

1) Serve as representative of the variety of potentially PCB-containing materials[2], conditions, and possible exposure pathways (inhalation, dermal, and incidental ingestion);
2) Address specific concerns of the community and staff at MHS;
3) Evaluate previous sampling efforts;
4) Assess effectiveness of Best Management Practices cleaning; and
5) Draw scientific conclusions on the potential presence of PCB-containing building materials and the potential for exposures to PCBs at MHS.

I. <u>Overall Process for MHS</u>

a. Schedule needs to be based on a Building (or Room Group) by Building basis in a rolling parallel process to accommodate the scale of the work to be conducted during the summer (from June 16 to August 8) – see accompanying schedule.

b. General Sequence for a Building/Room Group

i. Building Inspection by Building or Room Groups

ii. Determine representative rooms in that Building or Room Groups for pre-cleaning air and wipe sampling

iii. Conduct pre-cleaning air and wipe sampling in representative rooms in that Building or Room Groups

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[1] Although not part of the EPA's June 4th request involving MHS, the process outline in this document also covers the work to be conducted at Juan Cabrillo Elementary School (JCES) that will be conducted during the same time period as the MHS efforts.

[2] For purposes of this document, PCB-containing shall mean materials that contain any measurable concentration of PCBs detectable using common analytical procedures for air and wipe samples.

ENVIRON International Corp. 18100 Von Karman Avenue, Suite 600, Irvine, CA 92612
V +1 949.261.5151 F +1 949.261.6202

environcorp.com

iv. HVAC/Duct cleaning

v. Room BMP cleaning

vi. Conduct post-cleaning air and wipe sampling in representative rooms in that Building or Room Groups. Post-cleaning sampling will be conducted in the same rooms as the pre-cleaning sampling, but post-cleaning sampling may also include additional rooms or locations without pre-cleaning sampling, as recommended by EPA[3], since those results are expected to be more representative of exposure levels that will remain following building re-occupancy.

vii. Schedule also includes accommodations for some re-cleaning and additional testing as needed, including rooms not sampled if the data suggests the need to expand the sampling.

c. Current assumption is that up to 1/3 of all rooms (inclusive of both MHS and JCES) will be sampled (subject to change based on information/experience during the summer inspections)

i. Up to approximately 45 pre-BMP air samples and up to approximately 65 post-BMP air samples. Outdoor/background, field blanks, and duplicates are included in the counts. Additional samples will be collected if the initial samples exceed relevant health-based benchmarks.

ii. Up to approximately 60 pre-BMP wipe samples and up to approximately 230 post-BMP wipe samples, assuming two to five wipe samples per room selected. Field blanks and duplicates are included in the counts. Additional samples will be collected if the initial samples exceed relevant health-based benchmarks

iii. Per EPA's recommendation[4], pre-cleaning sampling will be conducted in a smaller subset of representative rooms than post-cleaning sampling, as described in b.vi above.

iv. All pre-1981 buildings will be sampled.

v. All air sampling will be conducted with the windows closed and HVAC off.

d. Methods to be used

i. Air samples will be collected using the general methods previously approved by EPA for testing done in January. The air samples will be collected without a pre-filter and will be analyzed for Aroclors using EPA Method TO-10A[5], which is approved by EPA in its January 27, 2014 letter to the SMMUSD. The laboratory method reporting limit for each of the aroclors is 500 ng/PUF, which translates into approximately 0.07 µg/m^3 assuming a sample flow rate of 5 liters per minute (L/min) collected over 24 hours. Per EPA's recommendation[6], the laboratory will follow QA/QC procedures similar to those outlined in EPA Method 8082A.

ii. Wipe samples will be collected on gauze pads using the Standard Wipe Test described in 40 CFR 761.123 and will be analyzed using EPA Method 8082 for Aroclors. This method was used by EPA when its staff collected wipe samples from MHS, as indicated in EPA's letter to the SMMUSD, dated March 21, 2014. The laboratory method reporting limit for

[3] June 11, 2014 email from T. Huetteman of EPA to D. Daugherty of ENVIRON.
[4] Ibid.
[5] June 12, 2014 email from T. Huetteman of EPA to D. Daugherty of ENVIRON.
[6] June 12, 2014 phone conversation between T. Huetteman of EPA and Y. Tian of ENVIRON.

each of the aroclors is 0.1 µg/sample (except for Aroclor 1221, which is 0.2 µg/sample), which translates into approximately 0.1 ug/100cm^2 (or 0.2 ug/100cm^2 for Aroclor 1221).

1. As many samples require next day service, wipe samples will be sonicated in the extraction solvent rather than using the soxhlet extraction procedure. Based on information from ALS Laboratory in Salt Lake City, Utah, the spike recoveries are essentially identical for either method. The laboratory will aim to achieve a surrogate recovery of at least 65% and a matrix spike recovery on the same wipe type of at least 75%. If the results are below these targets (i.e., low biased), the validity and acceptability of the data will be evaluated,

2. Representative materials and types of surfaces for wipe samples

   – Caulk and glazing on windows and doors (deteriorating and in good condition)
   – Vertical surfaces (e.g., walls) with lower exposure potential
   – Horizontal surfaces with higher exposure potential

   The intent of these samples is to measure dust for assessing exposures due to direct contact with the material/surface. Note that the use of hexane rather than other solvents (e.g., HPLC grade 2-propanol) may cause PCBs to be more readily extracted from certain materials such as caulk and glazing. At the recommendation of EPA[7], gauze pads used to collect surface wipe samples from caulk and glazing will be wetted with HPLC grade 2-propanol, and all other wipe samples will be collected with gauze pads wetted with hexane.

II. <u>Factors to be considered in selecting representative rooms for air and wipe testing</u>

a. Information obtained through meetings with MHS[8] Staff conducted on May 21, 2014.
   i. Information ranged from cleanliness of rooms to heath concerns in various rooms.

b. Results of prior sampling.
   i. Sampling (air and wipe) will include Library, Rooms 1, 5, 8, where previous caulk sample results indicated PCB concentrations greater than 50 ppm.
   ii. Rooms that were sampled previously by The Phylmar Group will be included during the selection process.

c. Room usage
   i. Frequency of occupation
   ii. Age of occupants
   iii. Exposure potential to surfaces in room

d. Building materials that may potentially contain PCBs identified during the Building Inspections
   i. Results of the inventory effort on the types and locations of potential PCB-containing materials

[7] June 11, 2014 email from T. Huetteman of EPA to D. Daugherty of ENVIRON.
[8] And JCES staff.

ii. Similarities in construction (e.g., bathrooms, classrooms, lab classrooms, administrative rooms, etc.)

iii. Number, location, and type of windows in room

iv. Type of fixtures in room (e.g., presence of sinks)

v. Layout of room in regards to exposure potential

vi. Condition of building materials (e.g., flaking caulk, oily stains in light fixtures, other indications of potential PCB contamination)

vii. Characteristics of HVAC system

viii. Construction year

ix. Renovation records, if available

III. Documentation of information and rationale for selection of sampling locations

a. Information described in Section II will be documented in a matrix during the pre-inspection and building inspection phase of the work. ENVIRON will collect photographic and/or video documentation during the inspection and sampling activities.

b. Selection of representative rooms will be based on this information and both the conclusions and rationale for selection will be documented between the end of the inspection and prior to the collection of any pre-cleaning samples in each Building or Room Groups

    i. Note that higher selection ranking consideration will be given to factors that could indicate higher exposure potential (e.g., types of PCB-containing materials, conditions of the material, exposure potential or concerns, etc).

IV. Documentation of sampling results

a. Sampling results will be summarized in tabular format over the course of the summer.

b. Results will be compared to relevant health-based criteria.

c. If any of the post-cleaning sample results exceed relevant health-based criteria, the schedule allows for some second round of cleaning and then re-testing. All of these results will be presented in the final report.

d. At the end of the summer effort, ENVIRON will prepare a report that contains a summary of all of the inspection and sampling results, ENVIRON's conclusions from the data, and any recommendations, including additional testing or follow up work if warranted based on the data.

Appendix E

Site Characterization

E.1. Site Characterization

Once renovation/demolition at MHS is scheduled within the areas previously confirmed to contain ≥50 ppm PCBs (Library, Building E (Blue Building) Rooms 1, 5 and 8), additional characterization of building materials will be conducted, as described below.

Given that PCB-impacted materials may remain in place for up to 15 years and the technologies available for site characterization and the regulations that will be in effect at the time of site characterization cannot be predicted at this time, a site-specific characterization plan providing details regarding the general approach described below will be provided to USEPA for approval at least 180 days prior to the planned renovation/demolition.[22] The plan is anticipated to include a description of the sampling procedures, media to be sampled, sampling locations within each medium, sampling of adjacent substrates, and waste management.

A building inspection, including a visual survey, will be conducted first. Representative samples of building materials will be collected for laboratory analysis prior to commencement of renovation/demolition work. In accordance with USEPA regulations and guidance documents, this section provides a description of the materials to be analyzed, sample collection methods, and laboratory analytical methods to be implemented.

During PCB characterization activities, representative samples may be collected, as necessary, from the following media: caulk, paint, mastics, sealants, wood, brick, concrete, nonporous building materials and any other building material suspected to contain PCBs based on the Building Inspection results to be completed by August 2014.

PCB characterization sampling will be conducted to evaluate the nature and extent of PCBs present in buildings materials. Based on the results of characterization sampling, specific areas will then be targeted for PCB remediation, as appropriate based on the concentrations of PCBs identified.

A flow chart detailing the procedures associated with Characterization is included within Figure 6.

The following sections describe the general sampling procedures, sampling locations and sampling of adjacent substrates that are anticipated to be implemented based upon current regulatory requirements and USEPA guidance. Actual procedures for site characterization will be developed based upon the applicable regulations and USEPA guidance in effect at the time the site-specific characterization plan is developed. The site-specific characterization plan will be submitted to USEPA for approval prior to implementation.

E.1.1 Sampling Procedures

All sampling locations will be kept wet and polyethylene drop cloths will be used to minimize accidental contamination of surrounding building materials during the sampling process.

[22] The 180-day period is intended to allow sufficient time: 1) for sampling to occur following USEPA approval, 2) for the District to develop a site-specific remedial work plan for USEPA approval based on the sampling results, and 3) for the District to commence remedial activities within that 180-day period.

Durable field sampling equipment will be decontaminated prior to each sample location to mitigate the potential for cross-contamination of samples. Each component of the sampling device will be decontaminated or replaced with a new, dedicated or disposable component prior to collecting samples for laboratory analysis. All non-disposable sampling equipment will be subject to decontamination procedures prior to sampling, consistent with 40 CFR 761.79. If gloves come into contact with sample media, a new pair of clean, nitrile gloves will be used at each location.

Porous surfaces, including soft porous surfaces (e.g. caulk, mastic and sealants), and hard porous surfaces (e.g. wood, concrete, brick), will be sampled in accordance with the USEPA Region I Standard Operating Procedure (SOP) for Sampling Porous Surfaces for Polychlorinated Biphenyls (May 2011), included as Appendix C of this document. In accordance with this SOP, at least three samples will be collected from each porous surface from each location identified.

Soft porous surfaces will be collected at 0.5-inch depth intervals using a metal chisel or sharp knife. The chisel or knife will be decontaminated between samples. If adjacent media is inadvertently removed in the process of sample collection, this media will be physically removed from the soft porous material prior to placement in the sample container.

Hard porous surfaces will be ground into powder using an impact hammer drill with a carbide drill bit. Powdered sample will be collected and placed in a sample container. Samples will be collected in 0.5-inch depth intervals and powder from adjacent holes may be composited to ensure sufficient sample volume. The drill bit will be decontaminated between samples.

All samples will be logged on standard chain-of-custody forms and stored on ice for delivery to an approved laboratory. All samples will be extracted using USEPA Method 3540C (Soxhlet Extraction) and analyzed for PCBs using USEPA Method 8082. In addition to the primary samples, a field duplicate, a matrix spike and matrix spike duplicate (MS/MSD), and an equipment blank will be collected at a frequency of 1 per 20 primary samples, which is consistent with USEPA protocol for quality assurance/quality control (QA/QC) purposes.

E.1.2 Sampling Locations

Sampling locations will be selected based on the removal or renovation/demolition work proposed. When an area has been selected for removal or renovation/demolition, all building materials in the work area will be inspected and inventoried. Representative samples of each building material type will be collected with a minimum frequency of one sample per material per room.

Where the age or type of material varies within a single room (i.e. different color paints or caulking), a sample of each type of material will be collected and submitted for analysis.

E.1.3 Sampling of Adjacent Substrate

If porous materials are adjacent to confirmed ≥50 ppm PCB-impacted materials (i.e. concrete adjacent to window caulking), a sample of the adjacent substrate will be collected and submitted for analysis. Samples of the adjacent porous substrate will be collected in accordance with the

USEPA Region I Standard Operating Procedure (SOP) for Sampling Porous Surfaces for Polychlorinated Biphenyls (May 2011), included as Appendix C of this document. At least one sample per room will be collected where similar porous materials are adjacent to similar ≥50 ppm PCB-impacted materials.

Appendix F

Proposed ≥50 ppm PCB Removal/Remediation Procedures

F.1. Proposed ≥50 ppm PCB Removal/Remediation Procedures

Given that PCB-impacted materials may remain in place for up to 15 years and the technologies available for remediation and the regulations that will be in effect at the time of remediation cannot be predicted at this time, a site-specific remediation work plan providing details regarding the general approach described below will be provided to USEPA for approval at least 60 days prior to the planned renovation/demolition.[1] The plan is anticipated to include a description of cleanup goals as well as the following remedial activities: 1) engineering controls, 2) air monitoring for workers, 3) remediation procedures for each medium, 4) encapsulation, 5) verification (confirmatory) sampling, 6) contingency planning, 7) waste management and disposal, and 8) recordkeeping and documentation.

This plan has been developed to establish procedures for removing, cleaning up, and disposing of PCB-impacted media in the Library and Building E Rooms 1, 5, and 8 at MHS. Throughout implementation and upon its completion, each step of the remediation will be evaluated to determine whether any plan modifications should be made prior to continuing with the remedy implementation in other areas. This section describes the proposed remedial activities anticipated to be implemented for each of the potentially affected media.

Building materials containing PCBs at concentrations ≥50 ppm in the Library and Building E Rooms 1, 5, and 8 will be remediated in accordance with the procedures in this plan when building renovations are planned and funded. Currently, the timing for beginning removal of ≥50 ppm PCB-impacted building materials identified at MHS is anticipated to begin within 9-12 months after a Coastal Commission Permit for the demolition and renovation is issued to the District. However, it is not clear how long it will take for that permit to be issued. It is likely that the intended remediation of ≥50 ppm PCB-impacted building materials would not be completed within the June 4, 2015 timeframe specified in USEPA's June 4, 2014 letter to the District. Therefore, the District proposes to manage this material in place (in the Library and Building E Rooms 1, 5, and 8) for up to 15 years or until removal/remediation of ≥50 ppm PCB-impacted materials occur, whichever is sooner. The District will maintain management in place BMPs as described in this plan during this time period. The District also proposes an option to extend this period, if needed, with concurrence with USEPA. This approach is consistent with USEPA Region I's agreement with the University of Massachusetts.[2]

This appendix describes the general remedial activities that are anticipated to be implemented based upon current regulatory requirements and USEPA guidance. These procedures for site remediation will be revised, as needed, to address applicable regulations and USEPA guidance in effect at the time the site-specific remedial work is to be conducted. Thus, the following sections are provided to describe the general approach and should be used for reference only.

[1] The 60-day time period is intended to allow sufficient time: 1) for USEPA approval of the site-specific remedial work plan based on the sampling results and 2) for the District to commence remedial activities within that 60-day period.

[2] 2012. Consent Agreement and Final Order from USEPA Region I to University of Massachusetts System. TSCA-01-2012-036.

A site-specific remedial work plan updated with then current USEPA regulations and guidance will be submitted to USEPA for approval prior to implementation.

Based on the results of the characterization of building materials and adjacent substrates, and in consultation with USEPA-Region IX, PCB-impacted materials will be sorted and classified into the following four categories, as defined in 40 CFR 761.3:

- PCB Bulk Product Waste - caulk, paint, mastic and sealants containing ≥50 ppm;
- Excluded PCB Product - caulk, paint, mastic and sealants containing <50 ppm PCBs;
- ≥50 ppm PCB Remediation Waste - building materials (e.g. concrete, brick, etc.) containing ≥50 ppm PCBs; and
- <50 ppm PCB Remediation Waste – building materials (e.g. concrete, brick, etc.) containing >1 ppm and <50 ppm PCBs.

Nonporous building materials formerly in direct contact with PCB Bulk Product Waste may be decontaminated consistent with 40 CFR 761.79.

Residual concentrations of PCBs on surfaces made of porous building materials may remain in place if remediation goals are not achieved and would be encapsulated by a protective coating (following PCB Bulk Product Waste removal) to minimize direct contact with PCBs and/or potential migration effects to other media. Use of encapsulants implemented as a long-term remedial action would only be anticipated for situations where removal of building materials might impair the structural integrity of a building or its components or if remediation goals cannot reasonably be achieved. Prior to such use of encapsulants as a long-term remedial action, the District will confer with USEPA on this matter. If encapsulants are proposed, the District will follow procedures outlined in Appendix F of this plan and will develop a continued schedule for collection of air and wipe samples, in consultation with USEPA, to verify encapsulant effectiveness.

A flow chart detailing the procedures associated with remediation is included within Figure 6.

F.1.1 Cleanup Goals

The remediation plan proposed herein is a combination of a removal and off-site disposal of PCB Bulk Product Waste under 40 CFR 761.62 with a self-implementing cleanup and disposal of PCB Remediation Waste under 40 CFR 761.61(a) and (c). Proposed cleanup levels for bulk PCB remediation waste, air and wipe samples are presented below.

F.1.2 Bulk PCB Remediation Waste Clean-up Levels

The cleanup level for total PCBs in bulk PCB remediation waste will be 1 ppm.

F.1.2.1 Air Sampling

The cleanup level for air sampling will be 200 ng/m^3, which is lower than the health-protective USEPA Public Health Levels of PCBs in School Indoor Air[3] for teachers and elementary schools students and above[4], but consistent with the threshold for MHS cited by USEPA Region IX.

F.1.2.2 Wipe Sampling

Based on our discussions with USEPA Region IX, we understand that a comparison threshold of 1 µg/100 cm^2 consistent with USEPA Region I should be used for wipe samples taken at MHS. If results are above this threshold, we would contact USEPA to discuss the potential development of more site-specific risk exposure values.

F.1.3 Engineering Controls

Prior to implementing removal or remediation procedures, engineering controls will be put in place to prevent the migration of PCBs and PCB-impacted materials from work areas. Engineering controls will include polyethylene sheeting to control and catch debris, wetting material prior to handling, and work practices to minimize dust generation.

An integral step in implementing protective measures is to assign a containment area for each distinct abatement area. The containment area size and construction will be proportionate to the activities that will be conducted (i.e., amount of dust generation expected). Containment structures will be constructed within the containment area at each location where abatement is performed and in a manner that minimizes airborne dust from spreading outside the abatement area. For example, a containment structure can be constructed of poly sheeting draped over existing building features and/or support frames built specifically for the containment area. The containment area will be maintained under negative air pressure by installing an induced draft fan equipped with HEPA filters to minimize dust particles from being carried out of the containment area. The filtered exhaust from the fan will be routed outside the containment area and vented outside of the building.

When significant dust is produced by the abatement activities, dust monitoring outside the containment structures will be conducted. All powered tools will also be equipped with appropriate tool guards and dust/debris collection systems with HEPA filters.

Specific engineering controls for each type of removal activity are described in more detail in Section F.1.4.

F.1.3.1 Air Monitoring for Remediation Workers

In order to verify the effectiveness of dust minimization engineering controls, air monitoring for respirable airborne particulates will be conducted using data-logging, real time monitors. The following the California Division of Occupational Safety and Health (Cal/OSHA) permissible exposure limits (PELs), based on an 8-hour, time-weighted average (8-hour TWA) will be considered applicable to this work:

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[3] http://www.epa.gov/pcbsincaulk/maxconcentrations.htm.

[4] 300, 450, 600, and 450 ng/m^3 for elementary school, middle school, high school, and faculty, respectively[4]

- Total Dust: 10 milligrams per cubic meter (mg/m^3)
- Respirable Fraction: 5 mg/m^3
- PCBs (42% Chlorine): 1 mg/m^3
- PCBs (54% Chlorine): 0.5 mg/m^3

A total airborne particulate action limit has been established for the PCB remediation work to be conducted at the site with consideration of the specific receptors, PCB concentrations, work activities, and Cal/OSHA permissible exposure limits. The action limit applies only to air monitoring at the perimeter of the work zone; an action limit has not been set for the active work zones (exclusion zones) as engineering controls will be used within these zones.

An action limit of 0.1 mg/m^3 above background will be maintained during site work. Air monitoring at a location representative of background air conditions (i.e. a location upwind of the work area) will be conducted at the same frequency as the monitoring to obtain data representative of real-time background conditions. The action limit will be used to determine if and when additional engineered controls and/or work stoppages would be necessary.

Should the action level be exceeded during remediation, ENVIRON will evaluate work procedures and recommend additional engineering controls or modified work practices to control dust generation. Any recommended changes to work practices will be documented. It is noted that the Cal/OSHA standards are based on an 8-hour TWA. Therefore, instantaneous exceedances of the action level and/or the standards listed above will not necessarily indicate an exceedance of the PEL.

Air monitoring stations will be established at the perimeter of, and within, the designated work area. Air monitoring will be conducted at all times during PCB remediation activities. ENVIRON will review monitoring data a minimum of once per hour during the work. The logged data will be downloaded and reviewed daily, so that changes to the work practices can be recommended based on observable trends in airborne dust concentration.

If monitoring indicates that particulate matter concentrations are not maintained below the action level, remediation activities shall cease until work practices can be evaluated and adjusted.

Air monitoring equipment will be calibrated according to manufacturer's specifications.

F.1.4. Summary of Remediation Procedures by Media

This section describes the specific remediation procedures that have been established for each type of PCB impacted material.[5]

[5] As discussed in Section 1, regulatory oversight of investigation and potential remediation of PCB-impacted soils at MHS is to be managed separately through the Preliminary Environmental Assessment (PEA) process under the California Department of Toxic Substances Control (DTSC). Therefore, discussion related specifically to soil at MHS is not included in this section.

F.1.4.1 Caulking and Glazing

The caulking and glazing removal task described below includes the removal and off-site disposal of source materials identified during characterization activities at MHS.

- Surface preparation for caulking and glazing removal will include surficial wetting of visibly dry and/or deteriorating material to minimize dust generation.
- At locations where caulking or glazing will be removed from vertical joints (e.g., between a retaining wall and a building), polyethylene sheeting will be placed on the ground surface and removal will be conducted using hand tools to achieve removal to the maximum extent practicable while minimizing dust or other airborne particulates generated from caulking, glazing, or adjacent materials. This will not include mechanical grinding or saw cutting any concrete or brick in direct contact with the caulking or glazing.
- Upon the completion of the initial removal activities, the joints will be visually inspected for the presence of any residual caulking or glazing. If residual caulking or glazing is observed, it will be removed from the adjacent material to the maximum extent practicable. This may include scraping or chemical means to remove the visible remnants from the concrete or brick.
- Wet wiping and/or vacuuming of all tools and equipment in the work area will be performed at the completion of the work activity.
- During the project, equipment and tools used in the process will be decontaminated through spraying and wet wiping. At the completion of the project, any non-disposable equipment and tools that handled PCB material will be decontaminated following the procedures described in 40 CFR 761.79.
- Any debris collected on the polyethylene sheeting will be gathered and placed in PCB Bulk Product Waste containers at the end of each work day. After use, disposable PPE and poly sheeting used to collect debris will be placed in the appropriate containers for disposal as PCB Remediation Waste.
- All removed caulking, glazing, and associated debris will be transported for off-site disposal as PCB Bulk Product Waste.

F.1.4.2 Paint and Other Surface Coatings

The paint removal task described below includes the removal and off-site disposal of source materials identified during characterization activities at MHS. Note that any other surface coatings (i.e. varnishes, lacquers, etc.) will be handled using the same protocols for paint removal outlined below.

- Surface preparation for paint or another surface coating removal will include surficial wetting of visibly dry and/or deteriorating material to minimize dust generation.
- At locations where paint or another surface coating will be removed from vertical surface, polyethylene sheeting will be placed on the ground surface and removal will be conducted using hand tools to achieve removal to the maximum extent practicable while minimizing dust or other airborne particulates generated from the coating or adjacent materials.

Mechanical grinding or saw cutting of surfaces coated with PCB-impacted materials may be needed.

- Upon the completion of the initial removal activities, the surfaces will be visually inspected for the presence of any residual paint or other surface coating. If residual coating is observed, it will be removed from the adjacent material to the maximum extent practicable. This may include scraping or chemical means to remove the visible remnants from the surface.
- Wet wiping and/or vacuuming of all tools and equipment in the work area will be performed at the completion of the work activity.
- During the project, equipment and tools used in the process will be decontaminated through spraying and wet wiping. At the completion of the project, any non-disposable equipment and tools that handled PCB material will be decontaminated following the procedures described in 40 CFR 761.79.
- Any debris collected on the polyethylene sheeting will be gathered and placed in PCB Bulk Product Waste containers at the end of each work day. After use, disposable PPE and poly sheeting used to collect debris will be placed in the appropriate containers for disposal as PCB Remediation Waste.
- All removed paint or other surface coating and associated debris will be transported for off-site disposal as PCB Bulk Product Waste.

F.1.4.3 Concrete and Brick

The concrete and brick removal task described below includes the removal and off-site disposal of PCB-impacted materials identified during characterization activities at MHS.

- Surface preparation for concrete and brick removal will include surficial wetting of visibly dry and/or deteriorating material to minimize dust generation.
- Concrete and brick on either side of a joint containing PCB-impacted caulk or glaze will be removed to a distance determined by characterization sampling described in Appendix E. Removed material will be managed as PCB Bulk Product Waste.
- Wet wiping and/or vacuuming of all tools and equipment in the work area will be performed at the completion of the work activity.
- At the completion of the project, any non-disposable equipment and tools that handled PCB material will be decontaminated following the procedures described in 40 CFR 761.79.
- All removed materials will be stored on site in lined, marked, and covered roll-off containers or Department of Transportation (DOT) 55-gallon drums prior to off-site disposal.

F.1.5. Proposed Procedures for Decontamination of Substrate in Contact with ≥50 ppm Materials

The task described below includes decontamination of nonporous materials adjacent to ≥50 ppm PCB-impacted materials identified during characterization activities at MHS.

- When possible, all nonporous materials to be decontaminated will be disassembled and transported to a secure decontamination area and staged on polyethylene sheeting. If the material cannot be easily removed, the decontamination area will be lined with polyethylene sheeting in a manner designed to contain all liquids generated from the decontamination process.
- Material will be decontaminated via chemical washing with a chemical extraction solvent following the manufacturer's recommended procedures for hand applications: the product will be applied and scrubbed using hand brushes; during the agitation, the surface of the material will be kept wet with the chemical extraction solvent at all times. Following the five-minute dwell time, all free liquid will be vacuumed from the surface; a layer of rinse water will be applied to the material and then vacuumed; this procedure will be repeated three times followed by a triple water rinse after the final application.
- Surface wipe samples will then be collected in accordance with the standard wipe test as defined in 40 CFR 761.123.

F.1.6. Proposed Procedures for Encapsulation of Porous Building Materials

Given the limitations of certain structures, extensive building material removal may not be a feasible remedial alternative. In this case, upon approval by USEPA, porous building materials may be encapsulated and left in place in accordance with the procedure below. Encapsulation would be a short-term alternative to minimize exposure to PCBs. Such alternative would be subject to approval by USEPA and contingent upon a schedule for ultimate removal of the PCB-impacted caulk. The use of encapsulation will require continued implementation of BMPs, collection of surface wipe samples, and air samples to verify encapsulate effectiveness. Proposed encapsulation procedures are further described below.

Where ≥50 ppm PCB-impacted joint materials are identified, the plan is to remove those materials by physical means and to containerize them for off-site disposal as PCB Bulk Product Waste. Following removal, the joint will be visually inspected to ensure that all caulking is removed to the maximum extent practicable.

The second component of the plan involves preparing the surfaces for repainting. Surfaces will be prepared by applying a leveling base, washing, and cleaning with a wire brush (or equivalent). If this preparation method does not provide a suitable base for an epoxy coating, surfaces may be sandblasted. Sandblasting will be accomplished by:

- providing PCB awareness training for the sandblasting workers (workers must use respirators and already be entered into a respirator program),
- totally encapsulating the area with polyethylene sheeting, and
- collecting all sand blast media and paint residuals with the polyethylene sheeting and managing this material as PCB Bulk Product Waste.

The porous materials in former direct contact with ≥50 ppm PCB-impacted caulking or glazing will be encapsulated with two coats of an epoxy coating, followed by new caulking. The extent of impacted porous materials located on both sides of the joint will be covered with two coats of

contrasting color of an encapsulant to eliminate the direct exposure pathway and leaching transport pathway from residual PCBs.

The elimination of this exposure pathway mitigates both the potential for PCB transfer via direct contact and the material's potential as a source to other media/materials. Selection of the encapsulant and development of a periodic monitoring plan, including surface wipe samples, will be implemented in consultation with USEPA to assess potential PCB concentrations on the exposed outer surfaces.

The following describes the proposed remedial activities for the porous surfaces that will not be removed:

- Prior to application of the protective coating, all surfaces will be prepared so that they are dry, clean, and sound (as described above).
- Two coats of the epoxy will be applied to interior joints, and two coats in contrasting colors of an encapsulant will be directly applied to the appropriate distance on either side of the joint.

All generated waste material (PPE, application tools, etc.) will be containerized in an appropriate waste container for subsequent off-site disposal. PPE will be wet wiped and containerized for off-site disposal.

F.1.7. Post-Remediation Confirmatory Sampling Program

Upon removal of PCB-impacted media, verification sampling of the underlying building materials beyond the extent of removal will be conducted.

Analytical results from the verification samples will be evaluated to determine whether or not this task is complete as follows:

F.1.8. Porous Building Materials (e.g. wood, concrete, brick, etc.)

- Analytical results ≤ 1 ppm – task complete; no additional cleanup required and/or no disposal restrictions will apply to the underlying or adjacent materials.
- Analytical results > 1 ppm – additional removal and off-site disposal as <50 ppm PCB Remediation Waste (assuming the data indicate the materials are <50 ppm) will be conducted and the sampling process will be repeated until the cleanup level of 1 ppm is met.

F.1.9. Nonporous Building Materials

For nonporous surfaces that are decontaminated, surface wipe samples will be collected in accordance with the standard wipe test (40 CFR 761.123) from locations on the material formerly in contact with the PCB impacted waste. If results indicate that the PCB concentration is less than the cleanup level, then no additional cleanup is required. If a verification sample is reported with PCB concentrations above, this surface will be cleaned again. All samples will be extracted using USEPA Method 3540C (Soxhlet Extraction) and analyzed for PCBs using USEPA Method 8082.

F.1.10. Encapsulated Porous Surfaces

For porous surfaces that are encapsulated, baseline verification wipe samples of the encapsulated surface will be collected from random locations. If analytical results indicate PCB concentration less than 1 µg/100 cm^2, this area will transition into a maintenance and monitoring program as discussed in the main text of this plan. If analytical results indicate PCB concentrations greater than 1 µg/100 cm^2, an additional coating may be applied and additional testing conducted, after consultation with USEPA.

F.1.11. Post-Remediation Confirmatory Air and Wipe Samples

After PCB impacted building materials have been removed or encapsulated, additional air and wipe samples will be collected from the renovated rooms.

F.1.11.1 Air Sampling

Air samples will be collected using the same procedures previously approved by USEPA for MHS. The air samples will be collected without a pre-filter and will be analyzed for Aroclors using USEPA Method TO-10A, which is approved by USEPA in its January 27, 2014 letter to the SMMUSD.

The cleanup level for air sampling will be 200 ng/m^3, which is lower than the health-protective USEPA Public Health Levels of PCBs in School Indoor Air[6] for teachers and elementary schools students and above[7], but consistent with the threshold for MHS cited by USEPA Region IX.

F.1.11.2 Wipe Sampling

Wipe samples will be collected on gauze pads using the Standard Wipe Test described in 40 CFR 761.123 and will be analyzed using USEPA Method 8082 for Aroclors.

In each room, an air sample will be collected over 24 hours with the doors and windows closed and the HVAC system turned off. Also in each room, at least two PCB wipe samples will be collected, one from a window sill and one from an interior floor tile.

Based on our discussions with USEPA Region IX, a comparison threshold of 1 µg/100 cm^2 consistent with USEPA Region I should be used for wipe samples taken at MHS. If results are above this threshold, we would contact USEPA to discuss the potential development of more site-specific risk exposure values.

F.2. Contingency Plan

If unanticipated higher PCB concentrations or wider distributions of PCB remediation waste are found, or other obstacles force changes in the cleanup approach, remediation contingencies will be developed in consultation with USEPA Region IX and included in the remediation plan submitted to USEPA for approval prior to implementation.

[6] http://www.epa.gov/pcbsincaulk/maxconcentrations.htm.

[7] 300, 450, 600, and 450 ng/m^3 for elementary school, middle school, high school, and faculty, respectively[7]

F.3. Data Validation

A data quality and data usability assessment of all samples will be completed. The data review will be conducted by ENVIRON in accordance with USEPA protocols. This review will include a completeness check of field documentation including sample collection and preservation methods, a completeness check of the laboratory data and documentation, a review of the internal laboratory QA/QC procedures and results including surrogate recoveries, MS/MSD results, blank results, and laboratory control standard results, and an evaluation of sample holding times, and field duplicate results. Upon receiving the data validation summaries, any qualifiers applied to the data will be added to the data summary tables presented in the final report.

F.4. Waste Management and Disposal

Waste management and disposal includes onsite handling, accumulation, containerizing, and labeling, and offsite transporting (including providing and preparing manifests, bills of lading, etc.) and disposing of PCB waste streams. The PCB waste streams will be transported via a licensed waste hauler to a permitted hazardous waste disposal facility as outlined below.

Secure, lined, and covered waste containers (roll-off containers or equivalent) or 55-gallon DOT-approved steel containers will be staged for the collection of PCB wastes generated during the work activities in accordance with applicable requirements in 40 CFR 761.65 and 40 CFR 761, Subpart K. All containers will be properly labeled and marked in accordance with 40 CFR 761.40 and 22 CCR 66262.34.

Upon completion of waste profiling and acceptance at the respective facilities, PCB wastes will be loaded into transportation vehicles for shipment to the disposal facility.

- PCB Bulk Product Waste will be segregated for disposal and transported under a manifest to a disposal facility in accordance with 40 CFR 761.62 and 22 CCR 66262.23.
- ≥50 ppm PCB Remediation Waste will be segregated for disposal and transported under a hazardous waste manifest to a hazardous waste landfill in accordance with 40 CFR 761.61 and 22 CCR 66262.23.
- <50 ppm PCB Remediation Waste (e.g. concrete, brick, etc.) <50 ppm PCBs will be segregated, further evaluated for other potential hazardous waste characteristics unrelated to PCB concentration, as applicable, and transported offsite under manifest or bill of lading to an appropriate hazardous or nonhazardous waste disposal facility. .
- Excluded PCB Product (e.g. caulk, paint, mastic and sealants) containing <50 ppm PCBs will be segregated, further evaluated for other potential hazardous waste characteristics unrelated to PCB concentration, as applicable, and transported offsite under manifest or bill of lading to an appropriate hazardous or nonhazardous waste disposal facility..

Water generated during decontamination (or as part of dust suppression) that is collected on polyethylene sheeting will be containerized onsite, sampled for PCBs other potential constituents, and designated for offsite disposal in accordance with 40 CFR 761.79 and/or

California hazardous waste regulations, as applicable. Polyethylene sheeting, PPE, and non-liquid cleaning materials will be managed and disposed of offsite in accordance with 40 CFR 761.61(a)(5)(v).

Waste determinations will be made in consultation with USEPA Region IX.

F.4.1 Recordkeeping and Documentation

Following completion of the work activities, applicable records and documents per 40 CFR 761 will be generated and maintained at one location. A post-remediation report will be prepared which will contain a detailed description of remediation activities, post cleanup samples, appropriate figures and drawings, and analytical data tables presenting results of post-cleanup samples. In addition, the report will include volumes of disposed materials, and all waste disposal records. The post-remediation report will be prepared to provide a full accounting of all activities performed and documentation necessary to support the conclusion that the remedial activities met the objectives of the project. The report will be submitted to USEPA-Region IX for review and ultimate approval.

The final post-remediation report will also be available to the public upon request.

F.4.2 Certification

As required by 40 CFR 761.61(a)(3)(i)(E), a written certification is provided in Appendix A. This certification is signed by both the owner of the property where the cleanup site is located, and the party conducting the cleanup, and states that all sampling plans, sample collection procedures, sample preparation procedures, extraction procedures, and instrumental/chemical analysis procedures used to assess or characterize the PCB contamination at the cleanup site, are on file at the location designated in the certificate, and are available for USEPA inspection.

Attachment B

Fourth Update on Recent Building Inspections Activities Related to Polychlorinated Biphenyls (PCBs)

September 5, 2014

MEMORANDUM

To: Sandra Lyon, SMMUSD Superintendent

From: ENVIRON International Corporation

Re: Fourth Update on Recent Building Inspection Activities Related to Polychlorinated Biphenyls (PCBs)

This fourth and final summer progress report is submitted to the Santa Monica-Malibu Unified School District (SMMUSD or District) to summarize ENVIRON's activities related to building inspections and implementation of Best Management Practices (BMPs), conducted in accordance with the General Plan[1] and the July 3rd MHS Specific Plan[2], at Malibu High School (MHS) and Juan Cabrillo Elementary School (JCES), since June 16, 2014. In addition, we discuss major activities planned for the coming weeks.

Significant progress was made in the weeks leading up to the first day of school. The coming weeks will involve developing a report to conclude the assessments performed this summer. We look forward to continuing to work with you, your staff, the community, and the U.S. Environmental Protection Agency (USEPA) to ensure that the schools satisfy health-based criteria for PCBs established by USEPA.

It is important to note when reviewing the results of the testing conducted at MHS and JCES that the thresholds requested by USEPA for MHS, for both air and surface wipe samples, are more conservative (health protective) than those used by New York City (NYC) Schools in their studies.[3,4,5]

- The air health benchmark for MHS and JCES is 33% to 67% lower, depending on age group for elementary or high school students and faculty. The benchmark for MHS and JCES is 200 ng/m^3 for these populations versus 300 to 600 ng/m^3 for NYC Schools (depending on population age).[6]
- The surface wipe threshold for MHS and JCES is 90% lower than that used by NYC schools. The threshold for MHS and JCES is 1 µg/100 cm^2 versus 10 µg/100 cm^2 for NYC Schools.

ENVIRON's risk assessors and toxicologists have reviewed these benchmarks and thresholds and concur, based on the current science, that they are health protective.

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1 2014. Draft *Comprehensive PCB-Related Building Materials Inspection, Management, and Removal Plan*. Prepared for SMMUSD by ENVIRON. April 25. Accessed here.

2 2014. *Site-Specific PCB-Related Building Materials Management, Characterization and Remediation Plan for the Library and Building E Rooms 1, 5, and 8 at Malibu High School*. Prepared for SMMUSD by ENVIRON. July 3. Accessed here.

3 2013. *Summary Report for the New York City School Construction Authority Pilot Study to Address PCB Caulk in New York City School Buildings.* Prepared for New York City School Construction Authority by TRC Engineers, Inc. May 24. Accessed here.

4 2012. *Final Remedial Investigation Report for the New York City School Construction Authority Pilot Study to Address PCB Caulk in New York City School Buildings.* Prepared for New York City School Construction Authority by TRC Engineers, Inc. August 21. Accessed here.

5 2011. *Interim Remedial Investigation Report for the New York City School Construction Authority Pilot Study to Address PCB Caulk in New York City School Buildings.* Prepared for New York City School Construction Authority by TRC Engineers, Inc. June 15. Accessed here.

6 Note that a threshold of 100 ng/m^3 is recommended by USEPA for children 3 to less than 6 years old. This threshold was used for the sampled JCES classrooms that are regularly occupied by children less than 6 years old.

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Executive Summary

Key milestones and findings based on the work conducted to date include[7]:

- All nine pre-1981 buildings at MHS—Building J (Building 700, Old Gymnasium), Building A (Building 800, Great White Shark), Building B/C (Building 900, Whale Shark), Building H (Cafeteria/Auditorium), Building E (Blue Shark), Building F (Building 300, Thresher Shark), Building D (Building 100 & 200, Mako Shark), Building G (Building 500, Angel Shark), and Building I (Building 400, Leopard Shark)—have been reopened by the District based on investigation results and findings to date.
  - Currently, the District has conservatively kept Room 506 (woodshop) in Building G closed to teachers and students because this room is undergoing further evaluation. Pre- and post-cleaning air samples in this room were below USEPA's recommended health benchmark of 200 ng/m^3. A total of 16 surface wipe samples were collected from this room (including before and after cleaning) and all but five samples were either non-detect for PCBs or less than USEPA's recommended threshold of 1 µg/100 cm^2. The five surface wipe samples with PCB detections greater than 1 µg/100 cm^2 were all collected from interior door caulking surfaces and these results are being evaluated further with USEPA.
- All six pre-1981 buildings at JCES—Building A (Administration), Building B, Building C, Building D, Building E, and Building F—have been reopened by the District based on investigation results and findings to date.
  - Currently, the District has conservatively kept Room 6 (office) in Building C closed to teachers and students because this room is undergoing further evaluation. Pre- and post-cleaning air samples in this room were below USEPA's recommended health benchmark of 200 ng/m^3. A total of 15 surface wipe samples were collected from this room (including before and after cleaning) and all but four samples were non-detect for PCBs and therefore less than USEPA's recommended threshold of 1 µg/100 cm^2. PCBs reported in one surface wipe sample above 1 µg/100 cm^2 was collected from caulking adjacent to the sink, but the area was subsequently re-cleaned and sample results after the re-cleaning indicate that surface had a PCB concentration less than 1 µg/100 cm^2. The other three surface wipe samples were collected from a wall surface near a window and a sink and were above 1 µg/100 cm^2 but less than 10 µg/100 cm^2. As per Section 1.2.3.2 of the July 3rd MHS Specific Plan, ENVIRON is currently in discussions with USEPA on whether further actions are needed given the results and the likely low contact frequency of this surface.
- Many of the pre-1981 buildings tested to date have airborne levels of total PCBs below USEPA's recommended health benchmark of 200 ng/m^3 and surface concentrations of total PCBs below 1 µg/100 cm^2 **before implementation of BMP cleaning**.
  - This includes all of the buildings at JCES[8], as well as Building E (Blue Shark, which was part of the December 2013 cleaning activities), Building H (Auditorium/Cafeteria), Building D (Mako Shark, 100 and 200 Rooms), and Building I (Building 400, Leopard Shark Building) at MHS.
  - Since pre-cleaning sampling results were below USEPA thresholds, the results would indicate that BMP cleaning was not needed to address any residual PCB concentrations. Despite these

[7] Data are currently undergoing Level III/IV third party data validation, as described in the USEPA Contract Laboratory Program National Functional Guidelines (USEPA 2008).

[8] Note that a threshold of 100 ng/m^3 is recommended by USEPA for children 3 to less than 6 years old. This threshold was used for the sampled JCES classrooms known to be regularly occupied by children older than 3 and less than 6 years old. This applies to certain classrooms in Buildings B (Rooms 1, 2, and 5), C (Room 8), and F (Room 21) that contain either kindergarten or special education classes. Based on known planned use of JCES, classrooms routinely occupied with children older than 3 and less than 6 years old tested to date did not exceed this threshold of 100 ng/m^3 recommended by USEPA.

results, the District proceeded with BMP cleaning of these buildings. ENVIRON also continued with its post-cleaning sampling investigation in these buildings.

- Airborne levels of PCBs in all sampled rooms (62 pre-cleaning samples and 101 post-cleaning sample results to date) are either not detected or less than USEPA's recommended health benchmark of 200 ng/m^3 (or 100 ng/m^3 benchmark for regularly occupied classrooms with children aged 3 to less than 6 years old)[8], except one pre-cleaning sample in Room 303 in Building F (Building 300, Thresher Shark).[9] The post BMP-cleaning air sample in Room 303 was non-detect for PCBs.
- Pre-cleaning (pre-BMP) surface wipe sample results (136 pre-cleaning samples and 368 post-cleaning sample results to date) indicate that nearly 78 percent (%) of the pre-cleaning samples are below the detection limit and another 16% of pre-cleaning samples have total PCB concentrations that are below USEPA's recommended threshold of 1 µg/100 cm^2. Nearly 90% of the initial (before any re-cleaning) post-cleaning samples are below the detection limit and another 7% of initial post-cleaning samples have total PCB concentrations that are below USEPA's recommended threshold of 1 µg/100 cm^2.
- ENVIRON has completed the inspections of all pre-1981 buildings at MHS and JCES.
- The District has made significant progress implementing the BMPs described in the General Plan in pre-1981 school buildings at MHS and JCES. HVAC cleaning has been completed in all pre-1981 school buildings and the annual BMP cleaning has been completed in all regularly occupied rooms, and is ongoing for the remaining low-occupancy rooms in most pre-1981 buildings.

Additional Information on Key Work Conducted Since June 16

While USEPA reviews the July 3rd plan for MHS Library, and Blue Shark Building Rooms 1, 5, and 8 (MHS Specific Plan), important work on both MHS and JCES campuses has been proceeding. In addition to preparation of the General Plan and MHS Specific Plan for USEPA, our work since we commenced onsite activities on June 16, 2014, has included the following:

Building Inspections

- ENVIRON has conducted building inspections in all pre-1981 buildings at MHS and JCES per Section 2 of our General Plan to inventory building materials that may potentially have been impacted by PCBs.
- During the inspections, ENVIRON documented the types, locations, and conditions of materials that could potentially have been impacted by PCBs.
- Following careful and rigorous inspections of all of the rooms at the two campuses, ENVIRON noted evidence of past ballast leaks that the SMMUSD is currently taking action on as previously described in our July 11, 2014 update, click here.

BMPs – Annual Cleaning

- The District has been implementing the BMPs described in the General Plan in pre-1981 school buildings.

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[9] The one result above USEPA's threshold is in a room where built-in orchestra risers (building materials) were removed with damage to surrounding building materials just prior to the start of investigation even though District Facility's staff had requested that the school and parents not remove these building materials until after the planned summer investigation. It is likely that this activity impacted the results seen in this room. Thus, this finding is not typical of conditions in any other rooms at MHS or JCES.

- Annual HVAC cleaning has been completed in all pre-1981 school buildings.
- Annual BMP cleaning has been completed in all pre-1981 school buildings except for some low occupancy rooms (e.g., electrical rooms) in most pre-1981 buildings, in which cleaning is ongoing.

BMPs – Air and Wipe Sampling MHS Pilot Study on BMPs

- ENVIRON is conducting a sampling pilot study on BMPs as described in our July 3rd MHS Specific Plan, and with USEPA concurrance.
- ENVIRON has collected pre-cleaning (pre-BMP) and post-cleaning (post-BMP) air and surface wipe samples in all pre-1981 buildings at MHS and JCES. Preliminary results for all buildings are currently available.
- Overall across all pre-1981 buildings, approximately 40% of regularly occupied rooms (e.g., classrooms and offices) have been sampled before cleaning. Post-cleaning sampling was completed on approximately 60% of regularly occupied rooms.
- Preliminary review and analysis of air sample results[10] collected before and after BMP cleaning indicates that airborne levels of PCBs in the sampled rooms are either not detected or below USEPA's recommended health benchmark of 200 ng/m^3 (or 100 ng/m^3 benchmark for regularly occupied classrooms with children aged 3 to less than 6 years old)[8] in all samples, except a pre-BMP cleaning sample in Room 303 in Building F (Building 300, Thresher Shark Building).[9] The post BMP-cleaning air sample in Room 303 was non-detect for PCBs.

Preliminary (Un-Validated[10]) Air Sampling Results To Date

School	Building	BMP Cleaning	Number of Indoor Samples	Below Detection Limit (DL)[11]	Above DL and Below 200 ng/m^3	Above 200 ng/m^3
MHS	Building J (Old Gym)	Pre-BMP	6	2	4 (max:110 ng/m^3)	None
		Post-BMP	7	2	5 (max: 180 ng/m^3)	None
MHS	Building A (Great White Shark)	Pre-BMP	4	4	None	None
		Post-BMP	4	1	3 (max: 92 ng/m^3)	None
MHS	Building B/C (Whale Shark)	Pre-BMP	3	2	1 (84 ng/m^3)	None
		Post-BMP	7	1	6 (max: 83 ng/m^3)	None

[10] Data are currently undergoing Level III/IV third party data validation, as described in the USEPA Contract Laboratory Program National Functional Guidelines (USEPA 2008).

[11] The laboratory reporting limit for the samples in this table ranges from 64 ng/m^3 to 75 ng/m^3.

Preliminary (Un-Validated[10]) Air Sampling Results To Date						
School	**Building**	**BMP Cleaning**	**Number of Indoor Samples**	**Below Detection Limit (DL)[11]**	**Above DL and Below 200 ng/m^3**	**Above 200 ng/m^3**
MHS	Building H (Cafeteria/ Auditorium)	Pre-BMP	3	3	None	None
		Post-BMP	5	5	None	None
MHS	Building F (Thresher Shark)	Pre-BMP	6	2	3 (max: 85 ng/m^3)	1 (480 ng/m^3)[9]
		Post-BMP	9	5	4 (max: 150 ng/m^3)	None
MHS	Building E (Blue Shark)	Pre-BMP	12	11	1 (82 ng/m^3)	None
		Post-BMP	14	12	2 (max: 84 ng/m^3)	None
MHS	Building D (Mako Shark – 100 Rooms)	Pre-BMP	7	6	1 (110 ng/m^3)	None
		Post-BMP	10	9	1 (110 ng/m^3)	None
MHS	Building D (Mako Shark – 200 Rooms)	Pre-BMP	4	4	None	None
		Post-BMP	8	8	None	None
MHS	Building I (Leopard Shark)	Pre-BMP	1	1	None	None
		Post-BMP	4	4	None	None
MHS	Building G (Angel Shark)	Pre-BMP	5	3	2 (max: 170 ng/m^3)	None
		Post-BMP	4	2	2 (max: 150 ng/m^3)	None
JCES	Building A	Pre-BMP	1	1	None	None
		Post-BMP	3	3	None	None
JCES	Building B[8]	Pre-BMP	3	3	None	None
		Post-BMP	7	7	None	None
JCES	Building C[8]	Pre-BMP	2	1	1 (Office: 120 ng/m^3)[12]	None
		Post-BMP	5	4	1 (Office: 110 ng/m^3)[12]	None
JCES	Building D	Pre-BMP	1	1	None	None
		Post-BMP	2	2	None	None

[12] PCBs were detected in the pre-cleaning and post-cleaning air samples in Room 6 with concentrations of 120 ng/m^{3}and 110 ng/m^3, respectively. Room 6 is not regularly occupied by children ages 3 to less than 6 years old.

Preliminary (Un-Validated[10]) Air Sampling Results To Date						
School	**Building**	**BMP Cleaning**	**Number of Indoor Samples**	**Below Detection Limit (DL)[11]**	**Above DL and Below 200 ng/m^3**	**Above 200 ng/m^3**
JCES	Building E	Pre-BMP	1	1	None	None
		Post-BMP	3	3	None	None
JCES	Building F[8]	Pre-BMP	3	1	2 (max: 120 ng/m^3)[13]	None
		Post-BMP	9	6	3 (max: 160 ng/m^3)[14]	None

- Preliminary review and analysis of all pre-BMP surface wipe sample results indicates that nearly 78% of the pre-cleaning samples are below the detection limit and another 16% of pre-cleaning samples have total PCB concentrations that are below USEPA's recommended threshold of 1 µg/100 cm^2. Nearly 90% of the initial (before any re-cleaning) post-cleaning samples are below the detection limit and another 7% of post-cleaning samples have total PCB concentrations that are below USEPA's recommended threshold of 1 µg/100 cm^2.

Preliminary (Un-Validated[10]) Surface Wipe Sampling Results To Date						
School	**Building**	**BMP Cleaning**	**Number of Samples**	**Below Detection Limit (DL)[15]**	**Above DL and Below 1 µg/100 cm^2**	**Above 1 µg/100 cm^2**
MHS	Building J (Old Gym)	Pre-BMP	14	13	None	1 (40 µg/100 cm^2)[16]
		Post-BMP	27	23	3 (max: 0.27 µg/100 cm^2)	1 (6.5 µg/100 cm^2)[17]
		Post-BMP[18]	1	1	None	None
MHS	Building A (Great White Shark)	Pre-BMP	6	5	None	1 (1.8 µg/100 cm^2)
		Post-BMP	16	16	None	None

[13] The two air samples with detections of PCBs had reported concentrations of 120 ng/m^3. These air samples—which were collected from Room 19 and Room 23—were collected from rooms that are not regularly occupied by children ages 3 to less than 6 years old.

[14] The three air samples with detections of PCBs had reported concentrations of 88 ng/m^3 (Room 19), 110 ng/m^3 (Room 23), and 160 ng/m^3 (Room 22). These rooms are not regularly occupied by children ages 3 to less than 6 years old.

[15] The laboratory reporting limit for all but two surface wipe samples in Building G ranges from 0.1 µg/100 cm^2 to 0.2 µg/100 cm^2. The other two surface wipe samples, which were collected on door caulking in Room 506, had method reporting limits of 1.0 µg/100 cm^2 and 10 µg/100 cm^2 due to sample dilutions.

[16] Pre-cleaning and post-cleaning wipe samples were taken on window caulk that was damaged (both samples were taken at the same location). This area was re-cleaned and repaired by SMMUSD in accordance with the July 3rd MHS Specific Plan.

[17] After additional cleaning per the protocol, the wipe result was below the detection limit.

[18] Results for sampling after re-cleaning and repairs to window caulking.

Preliminary (Un-Validated[10]) Surface Wipe Sampling Results To Date						
School	**Building**	**BMP Cleaning**	**Number of Samples**	**Below Detection Limit (DL)[15]**	**Above DL and Below 1 µg/100 cm^2**	**Above 1 µg/100 cm^2**
MHS	Building B/C (Whale Shark)	Pre-BMP	8	6	1 (0.85 µg/100 cm^2)	1 (1.1 µg/100 cm^2)
		Post-BMP	26	20	2 (max: 0.28 µg/100 cm^2)	4 (max: 2.2 µg/100 cm^2)[19]
		Post-BMP[20]	11	6	5 (max: 0.62 µg/100 cm^2)	None
MHS	Building H (Cafeteria/ Auditorium)	Pre-BMP	6	6	None	None
		Post-BMP	19	16	3 (max: 0.56 µg/100 cm^2)	None
MHS	Building F (Thresher Shark)	Pre-BMP	11	2	5 (max: 0.99 µg/100 cm^2)	4 (max: 2.7 µg/100 cm^2)
		Post-BMP	33	26	6 (max: 0.60 µg/100 cm^2)	1 (1.1 µg/100 cm^2)[21]
		Post-BMP[22]	5	4	1 (0.30 µg/100 cm^2)	None
MHS	Building E (Blue Shark)	Pre-BMP	31	31	None	None
		Post-BMP	56	53	3 (max: 0.74 µg/100 cm^2)	None
MHS	Building D (Mako Shark – 100 Rooms)	Pre-BMP	17	8	9 (max: 0.42 µg/100 cm^2)	None
		Post-BMP	26	25	1 (max: 0.15 µg/100 cm^2)	None
MHS	Building D (Mako Shark – 200 Rooms)	Pre-BMP	6	6	None	None
		Post-BMP	21	21	None	None
MHS	Building I (Leopard Shark)	Pre-BMP	2	1	1 (0.31 µg/100 cm^2)	None
		Post-BMP	12	9	3 (max: 0.28 µg/100 cm^2)	None

[19] After additional cleaning per the protocol, the wipe results were below 1 µg/100 cm^2.
[20] Results for sampling after re-cleaning.
[21] After additional cleaning per the protocol, the wipe results were below 1 µg/100 cm^2.
[22] Results for sampling after re-cleaning.

Preliminary (Un-Validated[10]) Surface Wipe Sampling Results To Date						
School	**Building**	**BMP Cleaning**	**Number of Samples**	**Below Detection Limit (DL)[15]**	**Above DL and Below 1 µg/100 cm^2**	**Above 1 µg/100 cm^2**
MHS	Building G (Angel Shark)	Pre-BMP	13	6	6 (max: 0.67 µg/100 cm^2)	1 (71 µg/100 cm^2)
		Post-BMP	13	10	2 (max: 0.84 µg/100 cm^2)	1 (62 µg/100 cm^2)
		Post-BMP[23]	7	2	2 (max: 0.20 µg/100 cm^2)	3 (max: 94 µg/100 cm^2)
JCES	Building A	Pre-BMP	2	2	None	None
		Post-BMP	8	8	None	None
JCES	Building B	Pre-BMP	5	5	None	None
		Post-BMP	21	20	1 (0.13 µg/100 cm^2)	None
JCES	Building C	Pre-BMP	4	4	None	None
		Post-BMP	18	17	None	1 (1.8 µg/100 cm^2)[24]
		Post-BMP[25]	3	2	None	1 (5.6 µg/100 cm^2)
		Post-BMP[26]	8	6	None	2 (max: 2.6 µg/100 cm^2)
JCES	Building D	Pre-BMP	2	2	None	None
		Post-BMP	6	6	None	None
JCES	Building E	Pre-BMP	3	3	None	None
		Post-BMP	8	8	None	None
JCES	Building F	Pre-BMP	6	6	None	None
		Post-BMP	23	23	None	None

- The following buildings did not require further actions based on initial post-cleaning results: MHS Buildings A, D, E, H, and I and JCES Buildings A, B, D, E, and F
- Post-cleaning results that required further actions in accordance with Appendix D of the July 3rd MHS Specific Plan include the following:
  - One pre-cleaning surface wipe sample collected on window caulking at MHS in Building J (Room 722) had a total PCB concentration that was above USEPA's recommended threshold

[23] Results for sampling after re-cleaning and repairs to door caulking. The three surface wipe samples with PCB concentrations above 1 µg/100 cm^2 were all collected from interior door caulking in Room 506.
[24] The one surface wipe sample with a PCB concentration above 1 µg/100 cm^2 was collected from caulking near a sink. The caulking was subsequently cleaned and re-tested, with re-testing results non-detect for PCBs.
[25] Results for sampling after re-cleaning. The one surface wipe sample with a PCB concentration above 1 µg/100 cm^2 was collected from textured wallpaper in Room 6.
[26] Results for sampling after second round of re-cleaning. The two surface wipe samples with a PCB concentration above 1 µg/100 cm^2 were collected from textured wallpaper in Room 6.

of 1 µg/100 cm^2, but this area was repaired, re-cleaned then re-tested, with re-testing results indicating a total PCB concentration below USEPA's recommended threshold.

- One pre-cleaning surface wipe sample and four post-cleaning wipe samples in Building B/C (Building 900, Whale Shark) had total PCB concentrations above USEPA's recommended threshold of 1 µg/100 cm^2. The post-cleaning sample results were in less accessed areas (window sills and top of a bookshelf) in the Attendance and Principal offices. The number of post-cleaning samples (26) was larger than the pre-cleaning samples (8). The sampled areas that have total PCB concentrations above the threshold were re-cleaned and re-tested with results below the USEPA threshold.
- Four pre-cleaning surface wipe samples (window sills in Rooms 301 and 303 and wood surfaces in Rooms 301C and 303) collected in Building F were above the USEPA threshold. Those areas were re-cleaned and tested with re-testing results indicating that those areas have total PCB concentrations below USEPA's recommended threshold.
- A total of 16 surface wipe samples were collected from Room 506 (woodshop) in Building G (Building 500, Angel Shark) (including before and after cleaning) and all but five samples were either non-detect for PCBs or less than USEPA's recommended threshold of 1 µg/100 cm^2. The five surface wipe samples with PCB detections greater than 1 µg/100 cm^2 were all collected from interior door caulking surfaces and the results are being evaluated further with USEPA. Currently, the District has conservatively kept Room 506 (woodshop) in Building G closed to teachers and students because this room is undergoing further evaluation.
- A total of 15 surface wipe samples were collected from Room 6 in Building C at JCES (including before and after cleaning) and all but four samples were non-detect for PCBs and therefore less than USEPA's recommended threshold of 1 µg/100 cm^2. PCBs reported in one surface wipe sample above 1 µg/100 cm^2 was collected from caulking adjacent to the sink, but the area was subsequently re-cleaned and sample results after the re-cleaning indicate that surface had a PCB concentration less than 1 µg/100 cm^2. The other three surface wipe samples were collected from a wall surface near a window and a sink and were above 1 µg/100 cm^2 but less than 10 µg/100 cm^2. As per section 1.2.3.2 of the July 3rd MHS Specific Plan, ENVIRON is currently in discussions with USEPA on whether further actions are needed given the results and the low contact frequency of this surface. Currently, the District has conservatively kept Room 6 (office) in Building C closed to teachers and students because this room is undergoing further evaluation.

BMPs – PEER's Reported Sampled Rooms

- ENVIRON's testing has included rooms reported by PEER and Malibu Unites as having unverified[27] elevated PCB concentrations in caulk and air vent "dirt". ENVIRON's sampling results from the rooms with the four interior samples described by PEER in their July 17th memorandum[28] are summarized below:

[27] In a July 23, 2014 email from ENVIRON to Kurt Fehling, Jennifer DeNicola of Malibu Unites, and Paula Dinerstein of PEER, ENVIRON requested additional information and clarification on the sampling conducted by Malibu Unites/PEER that was missing, not readily discernible, or apparent from the materials provided by them to date. This included missing sample location information, any photos of sampled areas, a complete chain of custody, and missing but cited third party validation report. ENVIRON has not received a response to date.

[28] Public Employees for Environmental Responsibility (PEER), *Malibu Unites and Public Employees for Environmental Responsibility's Comments on ENVIRON's "Site-Specific PCB-Related Building Materials Management, Characterization and Remediation Plan"* July 17, 2014. Accessed here.

- MHS Building E Room 1 was identified by PEER and Malibu Unites as a room with elevated concentrations of PCBs in dirt. The pre- and post-cleaning air sample results for this room (maximum: 84 ng/m^3) are below USEPA's benchmark and the eight wipe samples in this room are non-detect for PCBs.
- MHS Building E Room 2 was identified by PEER and Malibu Unites as a room with elevated concentrations of PCBs in dirt. The pre- and post-cleaning air sample results for this room as well as the eight wipe samples in this room are non-detect for PCBs.
- MHS Building G Room 506 was identified by PEER and Malibu Unites as a room with elevated concentrations of PCBs in caulk. The pre- and post-cleaning air sample results for this room as well as most of the wipe samples in this room are below the USEPA threshold; three wipe samples near interior doors remain above the USEPA threshold after re-cleaning. This room is currently undergoing further evaluation, as discussed above.
- JCES Building F Room 19 was identified by PEER and Malibu Unites as a room with high concentrations of PCBs in caulk. The pre- and post- cleaning air sample results for this room are below USEPA's benchmark and the five wipe samples in this room are non-detect for PCBs.

Summary of Key Work Planned Over the Coming Weeks

Our key planned activities over the coming weeks include the following:

- The District will continue to implement BMP annual cleaning for the remaining low-occupancy rooms in pre-1981 buildings across both campuses. The District will continue with weekly and monthly BMP cleaning as per the July 3rd MHS Specific Plan.
- ENVIRON and the District will further evaluate, in conjunction with USEPA, MHS Building G Room 506 (woodshop) and JCES Building C Room 6 (office), which have a few post-cleaning wipe sample results above USEPA's recommended threshold of 1 µg/100 cm^2 as discussed above.
- ENVIRON will provide data validation reports to the District in building groups (all pre- and post-cleaning results together) when available.
- As data validation efforts are completed, ENVIRON will start preparing a report summarizing inspection observations, sampling locations and results, and conclusions as per our July 3rd MHS Specific Plan. The report will be posted on the District's website once it is complete. Schedule depends on receipt of the final data validation reports.

Thank you for your attention to these matters.