COMMITMENT & INTEGRITY DRIVE RESULTS

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March 15, 2017

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

Re: PCB Remediation Plan – Patterson and MacKimmie Concrete Pads
Southwest Concourse Area
University of Massachusetts – Amherst

Dear Ms. Tisa:

This polychlorinated biphenyl (PCB) remediation plan has been prepared by Woodard & Curran on behalf of the University of Massachusetts Amherst (UMass) to propose additional remediation within an area on the UMass Amherst campus that is adjacent to and consistent with the United States Environmental Protection Agency (EPA) PCB Cleanup and Disposal Approval granted under 40 CFR 761.61 (a) and (c) and 761.79 (h) dated August 30, 2010. A copy of the approval is provided as Attachment 1.

The PCB remediation activities proposed in this modification are associated with access upgrades to the east sides of the Patterson and MacKimmie Houses through the removal and replacement of two concrete pads where caulking sealants assumed to contain ≥ 50 parts per million (ppm) PCBs have been identified within the work areas.

The proposed remediation is consistent with the conditions of the Approval and the June 2010 PCB Remediation Plan for the Southwest Concourse Area. In addition, this plan is consistent with that implemented by UMass and Approved by EPA for the remediation of ≥ 50 ppm PCB containing caulking sealants associated with concrete decking within the Southwest Concourse Area on three occasions since the original scope of PCB remediation activities was completed. The three previous areas were:

- 2011 - Crampton and MacKimmie Dormitory ADA renovations; EPA approval issued on May 18, 2011;
- 2012 - Emerson/James/Melville/Thoreau Sprinkler and Life Safety Upgrades; EPA approval issued on July 9, 2013; and
- 2016 – John Adams North ADA Entry renovations; EPA approval issued on June 21, 2016

Regulatory Summary

In preparation for the removal of the concrete pads, a survey of caulking within the removal areas was conducted. One type of caulking was observed within the removal areas. The caulking was present along approximately 20 linear feet (l.f.) of masonry joints at MacKimmie House pad and approximately 35 l.f. of masonry joints at the Patterson House pad. Based on the known presence of ≥ 50 ppm PCBs in previously remediated caulked joints within Southwest Concourse, UMass has elected to proceed under the assumption that the caulking contains ≥ 50 ppm PCBs. Removal and off-site disposal of the caulking and surrounding materials are proposed to be conducted in accordance with EPA's Approval of the PCB Remediation Plan for the Southwest Concourse Area dated June 25, 2010 and subsequent addendums (July 27, 2010 and August 24, 2010).

The overall approach for the remediation is to follow a waste segregation approach for all materials scheduled for removal and off-site disposal, including removal of the concrete decking. The sections of exterior wall, concrete retaining walls, and the bottom of the stairs at Patterson and MacKimmie Houses along the caulked

joints that are not scheduled for removal and that contain residual PCBs > 1 ppm will be managed in-place through the application of a liquid encapsulant.

The removal areas, including the location of the caulked joints, are presented on Figures 1 and 2.

Characterization Sampling Program – Prior to Removals

Prior to implementation of the proposed remediation, characterization samples will be collected to determine the extent of PCB impacts > 1 ppm in the surrounding masonry. A summary of the characterization samples to be collected is as follows:

- Concrete Decking – Samples will be collected from the concrete decking in support of the waste segregation cut line approach at a distance of 12 inches from the caulked joints. Samples will be collected at a frequency of 1 sample per 10 l.f. of joints for a total of 2 samples from the MacKimmie pad and 4 samples from the Patterson Pad. Analytical results will be evaluated as follows:
    - Total PCBs ≤ 1 ppm – the waste segregation cut-line is confirmed, materials beyond the cut line to be disposed of as general demolition debris.
    - Total PCBs > 1 ppm – additional verification samples collected at a greater distance from the joints at off-set locations and the waste segregation cut-line for the pad adjusted accordingly.
- Remaining Concrete and Masonry Surfaces – Samples will be collected from masonry materials at a distance of approximately 3 to 4 inches above the existing joint, a point corresponding to the planned installation height of the replacement pads. Two samples will be collected from each pad area for a total of 4 samples. Results of the verification samples will be compared to the high occupancy clean up level as follows:
    - Total PCBs ≤ 1 ppm – two coats of Sikagard 62 liquid epoxy to be applied to materials former in direct contact with the caulking and to materials above the joints as describe below.
    - Total PCBs > 1 ppm – additional verification samples collected at a greater distance above the caulked joint and the application of the liquid encapsulant extended accordingly. Materials that will be located above the final concrete decking will be coated with two coats of Sikagard 670W clear acrylic coating, if applicable.

Concrete samples will be collected to a depth of 0.5 inches in accordance with EPA Region 1 Standard Operating Procedure for Sampling Porous Surfaces for PCBs (May 2011) using a rotary impact hammer drill. Samples will be placed on ice and transported to the analytical laboratory for extraction via USEPA method 3540C (Soxhlet Extraction) and PCB analysis via USEPA method 8082. In addition to the primary samples described above, one duplicate sample and one equipment blank sample will also be collected. All samples will be submitted under a standard 5-business day turn-around time.

Results of the characterization sampling will be used to finalize the extents of remediation on the surrounding masonry.

Site Preparation and Controls

Prior to initiating the remediation activities, the following controls will be implemented:

- The contractor will develop a Health & Safety Plan specific to the work activities. All workers will follow applicable Federal and State regulations regarding the work activities, including but not limited to OSHA regulations, respiratory protection, and personal protective equipment (PPE), etc.
- Access to the active work areas will be controlled by the contractor through fencing, posting of signs, or other equivalent means.

- Engineering controls and/or containment measures will be implemented to control any dust or debris generated during removal activities.
- All work surfaces will be wetted to minimize dust during removal.

Dust levels and exposures to dust will be minimized by implementing a combination of engineering controls, wet work techniques, and personal protective equipment (e.g., respirators) as described above. Dust monitoring within the support work zone and perimeter to this zone will be conducted during active removal of caulking, concrete, and soil excavation to monitor for respirable dust at a frequency of once every two hours during active removal. Dust monitoring as part of the PCB monitoring activities will not be conducted during the initial saw cutting of the concrete as the cut line will be established outside the limits of PCB impacts.

PCB Remediation

A summary of the remedial approach to be implemented (and consistent with the approach previously implemented and approved for the Southwest Concourse area) is as follows:

Material Removal

- Caulking along 20 l.f. of concrete decking joints at MacKimmie House and approximately 35 l.f. of joints at Patterson House are to be removed for off-site disposal as PCB Bulk Product wastes;
- Concrete decking in direct contact with the caulking and to a distance of 12 inches from the caulked joints is to be removed for off-site disposal with the caulking as PCB Bulk Product Waste (approximately 55 square feet [sq ft]). Remaining portions of the concrete decking are to be removed for disposal as general demolition debris based on the results of the verification samples to be collected (see below); and
- Soils within the limits of the PCB concrete removal areas (i.e., 12 inches laterally from the former joints) and to a depth of 12 inches below the base of the concrete decking are to be removed for off-site disposal as ≥ 50 ppm PCB Remediation Waste (approximately 4 cubic yards of material). Remaining soils are to be managed per the project design plans without PCB restrictions, pending verification sample results (see below).

Encapsulation

- Masonry materials formerly in direct contact with the caulking and below the joints to a distance of 12 inches are to be coated with two coats of Sikagard 62 liquid epoxy. Masonry materials above the joints to be encapsulated with two coats of Sikagard 62 liquid epoxy coating to a distance equivalent to the final finish grade (i.e., that will be below the replacement pad). Areas of concrete above the finish pad level identified as containing PCBs > 1 ppm through characterization sampling described above will be coated with two coats of a Sikagard 670W clear acrylic coating or other equivalent coating.

Verification Sampling Approach

Verification samples will be collected in support of the PCB Remediation activities as follows:

- Remaining Concrete and Masonry Surfaces – Following removal of the caulking and concrete decking, two samples will be collected from each area at a distance of 12 inches below each joint (4 samples). Samples will be collected and submitted for PCB analysis as described above. In addition to the primary samples, one duplicate sample and one equipment blank sample will be collected and submitted for analysis. Results of the verification samples will be compared to the high occupancy clean up level as follows:
    - Total PCBs ≤ 1 ppm – two coats of Sikagard 62 liquid epoxy to be applied to materials former in direct contact with the caulking and to materials below the joints as describe above; and

- Total PCBs > 1 ppm – additional verification samples collected at a greater distance below the caulked joint and the application of the liquid encapsulant extended accordingly.

- Underlying Soils – Soil samples will be collected following removal of the concrete decking and the initial 12 inches of soils to verify removal of PCB impacted soils > 1 ppm. Consistent with the 2010 PCB Remediation Plan, verification soil samples will be collected from 0 to 3 inches below the base of the excavation at a frequency of 1 sample per 10 l.f. of joints for a total of 2 samples from below the MacKimmie pad and 4 samples from below the Patterson Pad. In addition to the primary samples, one duplicate sample will be submitted for PCB analysis. Results of the samples will be compared to the high occupancy clean up level as follows:
  - Total PCBs ≤ 1 ppm – excavation complete, no additional actions; and
  - Total PCBs > 1 ppm – additional excavation conducted and follow up verification samples collected at off-set locations.
- Baseline Wipe Samples – following application of the liquid coatings and visual inspection to confirm a smooth uniform coating, one wipe samples will be collected from epoxy encapsulated masonry surfaces at each pad area for a total of 2 wipe samples. Samples will be collected using a hexane saturated gauze pad over a 100 cm^2 area in accordance with the standard wipe test methodology of 40 CFR 761.123. Results of the baseline wipe sampling will be evaluated as follows:
  - Total PCBs ≤ 1 μg/100 cm^2 – encapsulation complete, surfaces to be incorporated into the existing annual long term monitoring program for the Southwest Concourse; and
  - Total PCBs > 1 μg/100 cm^2 – additional coating to be applied and follow up samples collected from off-set locations.

  If clear acrylic coating is required to be applied to surfaces above finish grade, one wipe sample will be collected from each pad area, submitted for analytical testing, and evaluated as described above (up to 2 additional samples).

Waste Storage and Disposal

The following activities will be completed with regard to the proper storage and disposal of PCB waste:

- Secure, lined, covered, and marked waste containers (i.e., 55-gallon DOT-approved steel containers or roll-off container) will be staged for the collection of PCB wastes generated during the work activities in accordance with 40 CFR 761.65.
- All containers will be properly labeled and marked in accordance with 40 CFR 761.40.
- Additional waste disposal characterization sampling (for other parameters) will be conducted as part of the disposal facility acceptance, as needed.
- All caulking, concrete, and soils will be managed as a single ≥ 50 ppm PCB waste stream for disposal in a hazardous waste landfill (e.g., US Ecology's Wayne Disposal facility in Belleville, Michigan, or equivalent).
- If any soils are found to contain PCBs > 1 and < 50 ppm after the first round of removal and verification sampling, then this material will either be disposed of as ≥ 50 ppm PCB wastes as outlined above or in a landfill permitted to accept PCB waste > 1 and < 50 ppm (e.g., the Waste Management facility located in Rochester, NH, or equivalent).
- Upon completion of the work or when a container is considered full, the waste will be transported off-site for disposal at the landfill specified above.
- All polyethylene sheeting, PPE, and other non-liquid materials generated during the work will be placed in the same container as the associated PCB waste for off-site disposal.

- Copies of all manifests, waste shipment records, and certificates of disposal will be collected and maintained as part of the final report.

Schedule

The removal of the caulking and PCB containing concrete decking is scheduled to be conducted beginning in May of 2017 and to be completed prior to the beginning of the 2017 fall semester.

If you have any questions or require further information, please feel free to contact me at (978) 482-7867 or at gfranklin@woodardcurran.com.

Sincerely,

WOODARD & CURRAN INC.

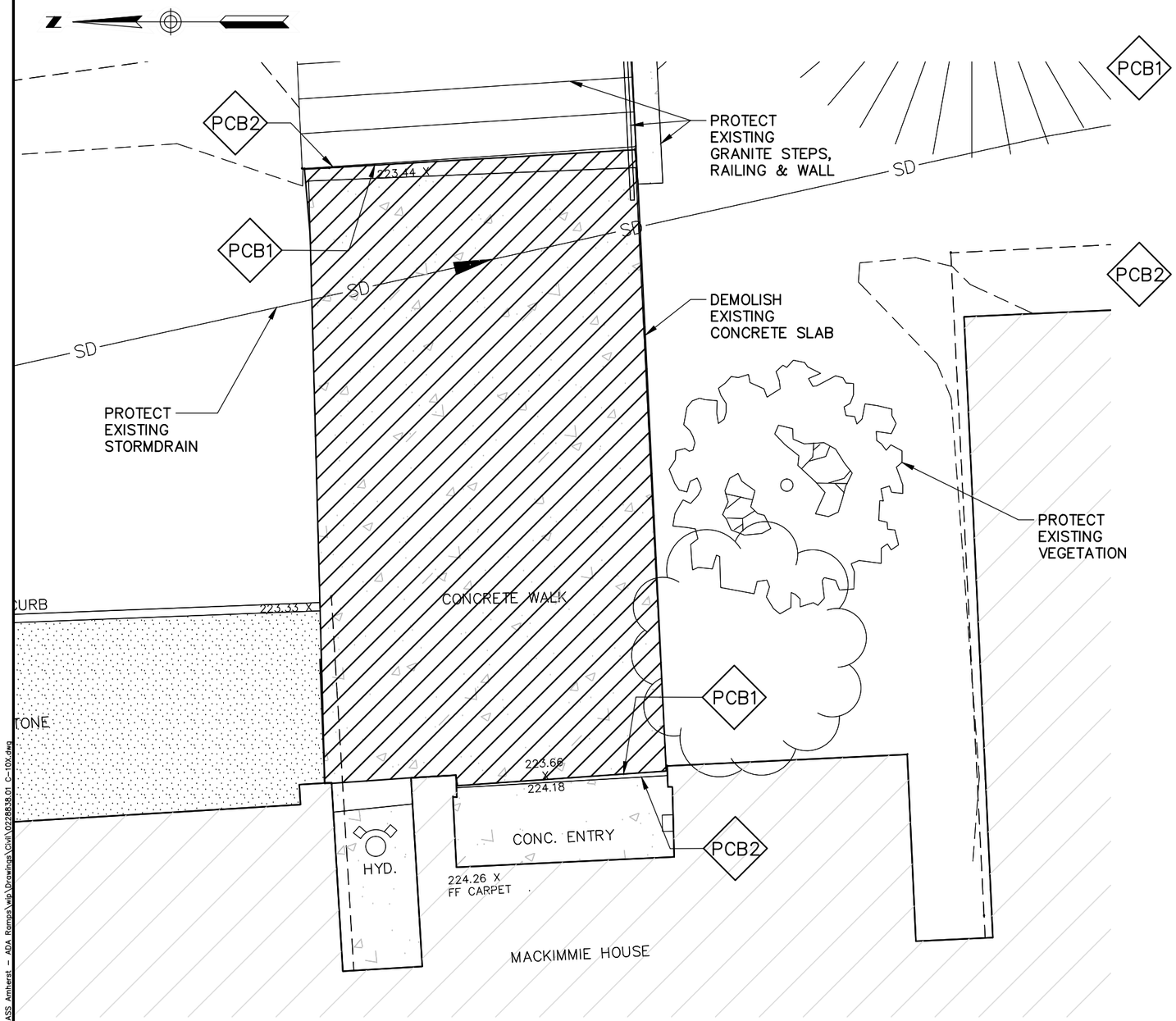
George J. Franklin, CHMM
Technical Manager

Jeffrey A. Hamel, LSP, LEP
Senior Principal

cc: Rebecca Ducharme, University of Massachusetts
Teresa Wolejko, University of Massachusetts

Enclosures:

Figure 1 – MacKimmie House Concrete Pad Removal Area
Figure 2 – Patterson House Concrete Pad Removal Area
Attachment 1 – EPA PCB Cleanup and Disposal Approval granted under 40 CFR 761.61 (a) and (c) and 761.79 (h) - August 30, 2010



SITE PLAN

SCALE: 1"=5'

DEMOLITION NOTES:

PCB1

CAULKING/SEALANTS TO BE REMOVED FOR OFF-SITE DISPOSAL AS PCB BULK PRODUCT WASTE. CONCRETE AND MASONRY MATERIALS SCHEDULED TO BE REMOVED AND LOCATED IN DIRECT CONTACT WITH AND TO A MINIMUM DISTANCE OF 12 INCHES FROM THE CAULKED JOINTS TO BE REMOVED WITH THE CAULKING FOR OFF-SITE DISPOSAL AS PCB BULK PRODUCT WASTE. SOILS TO A MINIMUM DEPTH OF 12 INCHES BELOW THE CONCRETE PADS AND LATERALLY WITHIN THE LIMITS OF THE CONCRETE SEGREGATION/CUT-LINE (MINIMUM OF 12 INCHES FROM THE FORMER JOINTS) TO BE REMOVED FOR OFF-SITE DISPOSAL AS ≥ 50 PPM PCB REMEDIATION WASTES. ALL REMOVED MATERIALS TO BE MANAGED AS A SINGLE WASTE STREAM FOR DISPOSAL AS ≥ 50 PPM PCB WASTES.

PCB2

CONCRETE AND MASONRY MATERIALS SCHEDULED TO REMAIN IN PLACE TO BE ENCAPSULATED AS FOLLOWS:

- CONCRETE BUILDING FACADE, RETAINING WALL, AND GRANITE STAIR MATERIALS FORMERLY IN DIRECT CONTACT WITH THE CAULKED JOINTS TO BE ENCAPSULATED WITH TWO COATS OF A LIQUID EPOXY COATING.
- CONCRETE BUILDING FACADE, RETAINING WALL, AND GRANITE STAIR MATERIALS TO A DISTANCE OF 12 INCHES BELOW THE FORMER CAULKED JOINTS TO BE ENCAPSULATED WITH TWO COATS OF A LIQUID EPOXY COATING.
- CONCRETE BUILDING FACADE, RETAINING WALLS, AND GRANITE STAIR MATERIALS ABOVE THE FORMER JOINTS TO BE ENCAPSULATED WITH TWO COATS OF A LIQUID EPOXY COATING TO A DISTANCE EQUIVALENT TO THE FINAL FINISH GRADE (I.E., MATERIALS THAT WILL BE BELOW THE REPLACEMENT PAD).
- IF REQUIRED BASED ON THE RESULTS OF VERIFICATION SAMPLING, CONCRETE BUILDING FACADE, RETAINING WALLS, AND GRANITE STAIR MATERIALS ABOVE THE FINAL FINISH PAD ELEVATION AND CONTAINING RESIDUAL PCBS > 1 PPMTO BE ENCAPSULATED WITH TWO COATS OF A CLEAR ACRYLIC COATING.

5' 0 5' 10'

BAR SCALE
1" = 5'
CHECK GRAPHIC SCALE BEFORE USING

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Andover, Massachusetts 01810
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COMMITMENT & INTEGRITY DRIVE RESULTS
WOODARD & CURRAN

MACKIMMIE HOUSE CONCRETE PAD REMOVAL AREA

DESIGNED BY:
DRAWN BY: BCM
CHECKED BY:
02228838.01C-10X.dwg

UNIVERSITY OF MASSACHUSETTS
360 CAMPUS CENTER WAY
AMHERST, MA

PCB REMEDIATION PLAN

JOB NO: 0228838.03
DATE: FEBRUARY 2017
SCALE: 1"=5'

FIG. 1

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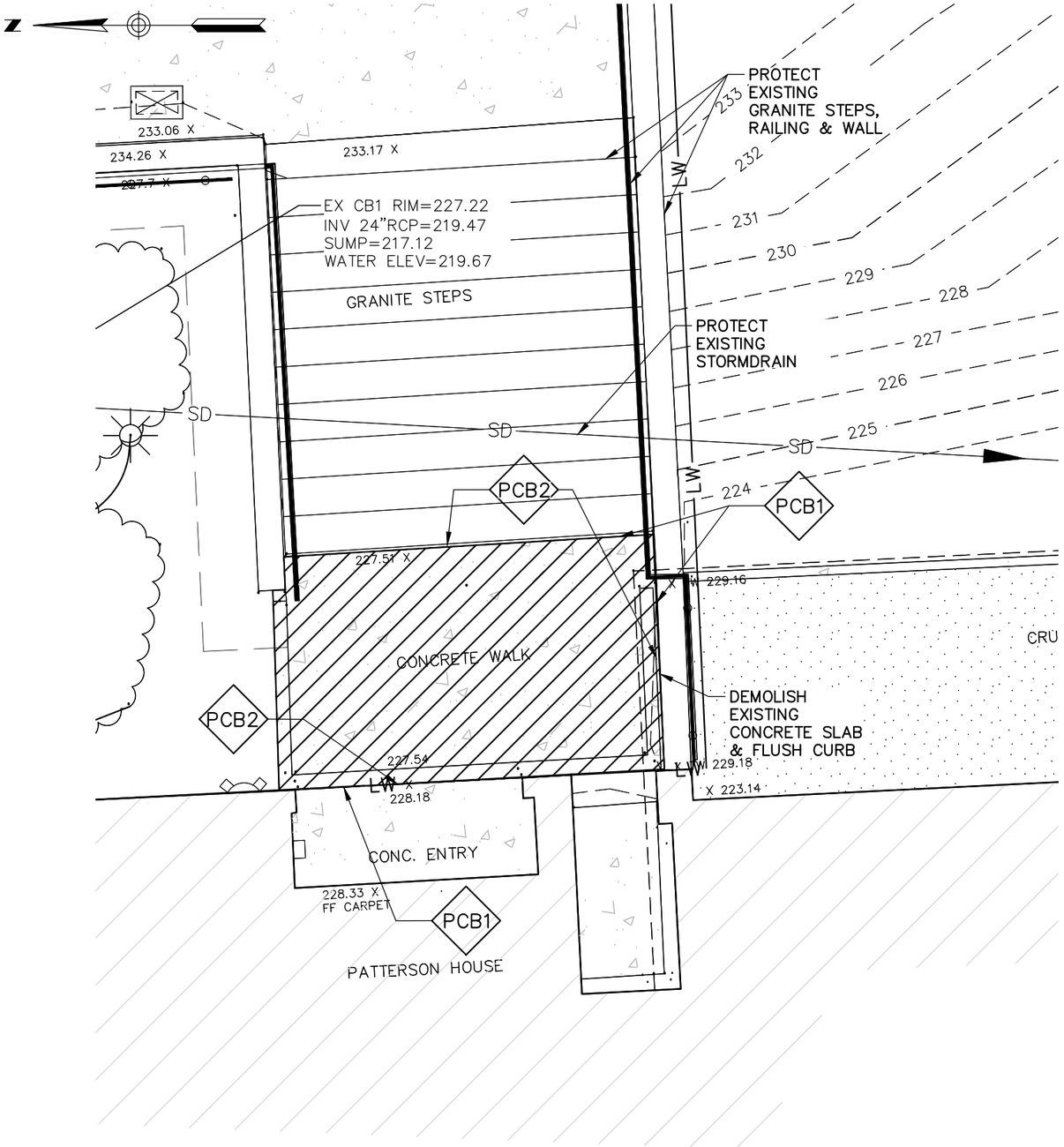

SITE PLAN

SCALE: 1"=5'

DEMOLITION NOTES:

PCB1 CAULKING/SEALANTS TO BE REMOVED FOR OFF-SITE DISPOSAL AS PCB BULK PRODUCT WASTE. CONCRETE AND MASONRY MATERIALS SCHEDULED TO BE REMOVED AND LOCATED IN DIRECT CONTACT WITH AND TO A MINIMUM DISTANCE OF 12 INCHES FROM THE CAULKED JOINTS TO BE REMOVED WITH THE CAULKING FOR OFF-SITE DISPOSAL AS PCB BULK PRODUCT WASTE. SOILS TO A MINIMUM DEPTH OF 12 INCHES BELOW THE CONCRETE PADS AND LATERALLY WITHIN THE LIMITS OF THE CONCRETE SEGREGATION/CUT-LINE (MINIMUM OF 12 INCHES FROM THE FORMER JOINTS) TO BE REMOVED FOR OFF-SITE DISPOSAL AS ≥ 50 PPM PCB REMEDIATION WASTES. ALL REMOVED MATERIALS TO BE MANAGED AS A SINGLE WASTE STREAM FOR DISPOSAL AS ≥ 50 PPM PCB WASTES.

PCB2 CONCRETE AND MASONRY MATERIALS SCHEDULED TO REMAIN IN PLACE TO BE ENCAPSULATED AS FOLLOWS:

- CONCRETE BUILDING FACADE, RETAINING WALL, AND GRANITE STAIR MATERIALS FORMERLY IN DIRECT CONTACT WITH THE CAULKED JOINTS TO BE ENCAPSULATED WITH TWO COATS OF A LIQUID EPOXY COATING.
- CONCRETE BUILDING FACADE, RETAINING WALL, AND GRANITE STAIR MATERIALS TO A DISTANCE OF 12 INCHES BELOW THE FORMER CAULKED JOINTS TO BE ENCAPSULATED WITH TWO COATS OF A LIQUID EPOXY COATING.
- CONCRETE BUILDING FACADE, RETAINING WALLS, AND GRANITE STAIR MATERIALS ABOVE THE FORMER JOINTS TO BE ENCAPSULATED WITH TWO COATS OF A LIQUID EPOXY COATING TO A DISTANCE EQUIVALENT TO THE FINAL FINISH GRADE (I.E., MATERIALS THAT WILL BE BELOW THE REPLACEMENT PAD).
- IF REQUIRED BASED ON THE RESULTS OF VERIFICATION SAMPLING, CONCRETE BUILDING FACADE, RETAINING WALLS, AND GRANITE STAIR MATERIALS ABOVE THE FINAL FINISH PAD ELEVATION AND CONTAINING RESIDUAL PCBS > 1 PPMTO BE ENCAPSULATED WITH TWO COATS OF A CLEAR ACRYLIC COATING.

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WOODARD & CURRAN

PATTERSON HOUSE CONCRETE PAD REMOVAL AREA

DESIGNED BY:
DRAWN BY: BCM
CHECKED BY:
02228838.01C-10X.dwg

UNIVERSITY OF MASSACHUSETTS
360 CAMPUS CENTER WAY
AMHERST, MA

PCB REMEDIATION PLAN

JOB NO: 0228838.03
DATE: FEBRUARY 2017
SCALE: 1"=5'

FIG. 2

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ATTACHMENT 1: EPA PCB CLEANUP AND DISPOSAL APPROVAL

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION I
5 POST OFFICE SQUARE, SUITE 100
BOSTON, MASSACHUSETTS 02109-3912

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Donald A. Robinson, Ph.D.
Director of Environmental Health & Safety
Draper Hall Room 117
University of Massachusetts
40 Campus Center Way
Amherst, Massachusetts 01003-9244

Re: University of Massachusetts - Amherst
Southwest Residential Area Concourse PCB Cleanup and Disposal Approval under 40 CFR §§ 761.61(a) and (c) and § 761.79(h)

Dear Mr. Robinson:

This is in response to University of Massachusetts (UMASS) Notification[1] for approval of a proposed PCB cleanup for the Southwest Residential Area Concourse located on the University of Massachusetts – Amherst campus (the Site). The Site contains PCB-contaminated materials that exceed the allowable PCB levels under the federal PCB regulations at 40 CFR §§ 761.20, 761.61(a), and 761.62. Specifically, PCBs have been identified in caulk; in surrounding concrete, brick, and asphalt substrates; on *non-porous surfaces* (i.e. granite stairs); and in soils.

In the Notification, UMASS has requested cleanup of the PCB contamination under the self implementing cleanup and disposal option (SIP) at § 761.61(a); the risk-based disposal option at § 761.61(c); and, the alternative decontamination option at § 761.79(h). UMASS is proposing the following PCB cleanup standards and activities under this project:

- For substrates that will be removed and/or encountered as part of the revitalization within the concourse project area, the caulk will be removed under § 761.62, and PCB-contaminated concrete and pavers, bedding sand beneath granite stairs, and, the PCB-contaminated asphalt and soils will be decontaminated under §§ 761.61(a) and 761.79(h) to achieve a *high occupancy area* cleanup standard of less than or equal to (≤) 1 ppm;

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[1] Information was submitted on behalf of UMASS by Woodward and Curran to satisfy the notification requirements under 40 CFR §§ 761.61(a)(3) and (c), and 761.79(h). Information was provided dated June 2010 (PCB Remediation Plan); July 7, 2010 (update of PCB sampling results); July 27, 2010 (Addendum 1 to Remediation Plan); August 18, 2010 (granite stairs data); and August 24, 2010 (Addendum 2 to Remediation Plan). These submissions will be referred to as the "Notification."

- Soils not planned for removal as part of the revitalization project will meet the ≤1 ppm PCB standard without further restriction or the ≤10 ppm beneath a compliant cap under § 761.61(a)(7);

- The soil area located north face wall of the John Quincy Adams at approximately 5 feet below ground surface (bgs) will be cleaned to a PCB cleanup standard of less than (<) 25 ppm;

- Certain PCB-contaminated substrates, including certain concrete retaining walls, building walls, and a pedestrian tunnel ceiling will be encapsulated under the risk-based option at § 761.61(c) with long term maintenance and monitoring of the encapsulated surfaces;

- *Non-porous surfaces* (e.g. granite stairs) will be removed or decontaminated to a ≤10 $\mu g/100\ cm^2$;

- Disposal of approximately 45 rolloffs of PCB wastes in a TSCA-approved disposal facility or RCRA hazardous waste landfill in accordance with § 761.61(a)(5)(i)(B)(2)(*iii*);

- Disposal of approximately 77 rolloffs in a RCRA non-hazardous waste landfill as a less than (<) 50 ppm PCB waste in accordance with § 761.61(a)(5)(i)(B)(2)(*ii*); and,

- Implementation of long term maintenance and monitoring of the *encapsulated porous surfaces*; and,

- Recording of a deed notice to document the PCB concentrations at the Site and to document the long-term maintenance and monitoring requirements.

Based on the EPA's review, the information provided in the Notification meets the notification requirements under 40 CFR §§ 761.61(a)(3), 761.79(h), and § 761.61(c) for *PCB remediation waste* and the disposal requirements under § 761.62 for *PCB bulk product waste*. Based on the information provided, EPA has determined that the abatement plan proposed by UMASS will not result in an unreasonable risk to public health or the environment when implemented in accordance with the Notification and the conditions specified in this Approval.

UMASS may proceed with its cleanup in accordance with 40 CFR §§ 761.61(a); 761.61(c); 761.62; 761.79(h); its Notification; and this Approval, subject to the conditions of Attachment 1.

Questions and correspondence regarding this Approval should be directed to:

Kimberly N. Tisa, PCB Coordinator
United States Environmental Protection Agency
5 Post Office Square, Suite 100 (OSRR07-2)
Boston, Massachusetts 02109-3912
Telephone: (617) 918-1527
Facsimile: (617) 918-0527

This Approval does not release UMASS from any applicable requirements of federal, state or local law, including the requirements related to cleanup and disposal of PCBs or other contaminants under the Massachusetts Department of Environmental Protection (MassDEP) regulations.

EPA shall not consider this project complete until it has received all submittals required under this Approval. Please be aware that upon EPA receipt and review of the submittals, EPA may request any additional information necessary to establish that the work has been completed in accordance with 40 CFR Part 761, the Notification, and this Approval.

Sincerely,

James T. Owens, Director
Office of Site Remediation and Restoration

Attachment 1

cc: J. Hamel, Woodward & Curran
MassDEP RTN: 1-17872
File

ATTACHMENT 1.

PCB CLEANUP AND DISPOSAL APPROVAL CONDITIONS
SOUTHWEST RESIDENTIAL AREA CONCOURSE ("the Site")
THE UNIVERSITY OF MASSACHUSETTS - AMHERST

GENERAL CONDITIONS

1. This Approval is granted under the authority of Section 6(e) of the Toxic Substances Control Act (TSCA), 15 U.S.C. § 2605(e), and the PCB regulations at 40 CFR Part 761, and applies solely to the *PCB bulk product waste* and the *PCB remediation waste* located at the Site and identified in the Notification.

2. The University of Massachusetts – Amherst (UMASS) shall conduct on-site activities in accordance with the conditions of this Approval and with the Notification.

3. In the event that the cleanup plan described in the Notification differs from the conditions specified in this Approval, the conditions of this Approval shall govern.

4. The terms and abbreviations used herein shall have the meanings as defined in 40 CFR § 761.3 unless otherwise defined within this Approval.

5. UMASS must comply with all applicable federal, state and local regulations in the storage, handling, and disposal of all PCB wastes, including PCBs, PCB Items and decontamination wastes generated under this Approval. In the event of a new spill during PCB cleanup and disposal activities authorized under this Approval, UMASS shall contact EPA within 24 hours for direction on PCB cleanup and sampling requirements.

6. UMASS is responsible for the actions of all officers, employees, agents, contractors, subcontractors, and others who are involved in activities conducted under this Approval. If at any time UMASS has or receives information indicating that it or any other person has failed, or may have failed, to comply with any provision of this Approval, it must report the information to EPA in writing within 24 hours of having or receiving the information.

7. This Approval does not constitute a determination by EPA that the transporters or disposal facilities selected by UMASS are authorized to conduct the activities set forth in the Notification. UMASS is responsible for ensuring that its selected transporters and disposal facilities are authorized to conduct these activities in accordance with all applicable federal, state and local statutes and regulations.

8. This Approval does not: 1) waive or compromise EPA's enforcement and regulatory authority; 2) release UMASS from compliance with any applicable requirements of federal, state or local law; or 3) release UMASS from liability for, or otherwise resolve, any violations of federal, state or local law.

CERTIFICATION AND NOTIFICATION CONDITIONS

9. This Approval may be revoked if the EPA does not receive written notification from UMASS of its acceptance of the conditions of this Approval within 10 business days of receipt.

CLEANUP AND DISPOSAL CONDITIONS

10. PCB-contaminated materials shall be decontaminated as described below:

    a. The decontamination standard for building *non-porous surfaces* (i.e. granite stairs) shall be as follows:

        i) All visible residues of PCB caulk shall be removed to the extent practical, and surface wipe samples shall be collected in accordance with the frequency specified in the Notification.

            (1) The decontamination wipe standard for *non-porous surfaces* shall be less than or equal to (≤) 10 $\mu g/100\ cm^2$.

            (2) All post-decontamination verification sampling of *non-porous surfaces* shall be performed on a surface area basis by the standard wipe test as specified in 40 CFR § 761.123 (i.e. $\mu g/100\ cm^2$).

            (3) Chemical extraction for PCBs shall be conducted using Methods 3500B/3540C of SW-846 and chemical analysis for PCBs shall be conducted using Method 8082 of SW-846, unless another method(s) is validated according to Subpart Q.

        ii) For decontaminated *non-porous surfaces* that have PCB concentrations exceeding the decontamination standard, UMASS may conduct additional decontamination to achieve the required decontamination standard or must store and dispose of these materials as TSCA-regulated waste in accordance with 40 CFR Part 761.

b. The PCB cleanup standard for *porous surfaces* (e.g. concrete, brick, etc.) shall be ≤ 1 part per million (ppm) with the exception of encapsulated *porous surfaces*.

i) All visible residues of PCB caulk shall be removed, to the extent practical.

ii) All post-decontamination verification sampling of *porous surfaces* shall be performed on a bulk basis (i.e. mg/Kg) and analytical results shall be reported on a dry weight basis. Samples shall be collected according to EPA's *draft* Standard Operating Procedure For Sampling Concrete in the Field, dated 12/30/97 to a maximum depth of 0.5 inches. Samples shall be collected as described in the Notification.

iii) Chemical extraction for PCBs shall be conducted using Methods 3500B/3540C of SW-846 and chemical analysis for PCBs shall be conducted using Method 8082 of SW-846, unless another extraction and/or analytical method(s) is validated according to Subpart Q.

iv) For decontaminated *porous surfaces* that have PCB concentrations exceeding the decontamination standard, UMASS may conduct additional decontamination to achieve the required decontamination standard.

c. Encapsulated *porous surfaces*

i) All visible PCB caulk shall be removed, to the extent practical.

ii) Following encapsulation of PCB-contaminated *porous surfaces*, initial surface sampling for PCBs shall be conducted to determine effectiveness of the encapsulation procedure.

(1) Wipe sampling shall be performed on a surface area basis by the standard wipe test as specified in 40 CFR § 761.123 (i.e. μg/100 cm^2). Chemical extraction for PCBs shall be conducted using Methods 3500B/3540C of SW-846 and chemical analysis for PCBs shall be conducted using Method 8082 of SW-846, unless another method(s) is validated according to Subpart Q.

(2) In the event that PCB concentrations in the wipe samples are greater than (>) 1 μg/100 cm^2, UMASS shall contact EPA for further discussion and direction on alternatives.

iii) UMASS shall submit a monitoring and maintenance implementation plan (MMIP) to monitor the long-term effectiveness of the encapsulants. (see Condition 13).

d. The PCB cleanup standard for soils and/or asphalt shall be ≤1 ppm or ≤10 ppm with a § 761.61(a)(7) compliant cap, as applicable, and except as provided in subsection iii, below.

i) Soil samples shall be collected on a bulk basis (i.e. mg/Kg) and PCB analytical results shall be reported on a dry weight analysis. Sampling shall be conducted in accordance with 40 CFR Part 761 and with the sampling frequency described in the Notification.

ii) Chemical extraction for PCBs shall be conducted using Method 3500B/3540C of SW-846 and chemical analysis for PCBs shall be conducted using Method 8082 of SW-846, unless another method(s) is validated according to Subpart Q.

iii) Soils located on the north face wall of the John Quincy Adams building at approximately 5 feet below ground surface (bgs) shall meet a less than (<) 25 ppm PCB cleanup standard.

11. To the maximum extent practical, engineering controls, such as barriers, and removal techniques, such as the use of HEPA ventilated tools, shall be utilized during removal processes. In addition, to the maximum extent possible, disposable equipment and materials, including PPE, will be used to reduce the amount of decontamination necessary.

12. All PCB waste (regardless of concentration) generated as a result of the activities described in the Notification, excluding any decontaminated materials, shall be marked in accordance with § 761.40; stored in a manner prescribed in § 761.65; and, disposed of in accordance with 40 CFR § 761.61(a)(5) and § 761.62, unless otherwise specified below:

a. Decontamination wastes and residues shall be disposed of in accordance with 40 CFR § 761.79(g).

b. Moveable equipment, tools, and sampling equipment shall be decontaminated in accordance with either 40 CFR § 761.79(b)(3)(i)(A), § 761.79(b)(3)(ii)(A), or § 761.79(c)(2).

c. PCB-contaminated water generated during decontamination shall be decontaminated in accordance with 40 CFR §761.79(b)(1) or disposed of under § 761.60.

INSPECTION, MODIFICATION AND REVOCATION CONDITIONS

13. Within sixty (60) days of completion of the activities authorized under this Approval, UMASS shall submit for EPA's review and approval, a detailed long-term monitoring and maintenance implementation plan (MMIP) for the encapsulants.

    a. The MMIP shall include: a description of the activities that will be conducted, including inspection criteria and frequency; surface sampling locations; sampling protocols, sampling frequency, and analytical criteria; and reporting requirements.

    b. The MMIP shall include a communications component which details how the maintenance and monitoring results will be communicated to the building users.

    c. UMASS shall submit the results of these long-term monitoring and maintenance activities to EPA. Based on its review of the results, EPA may determine that modification to the MMIP is necessary in order to insure long-term effectiveness of the physical barriers.

    d. UMASS shall incorporate any changes to the MMIP required by EPA. Activities required under the MMIP shall be conducted until such time that EPA determines, in writing, that such activities are no longer necessary.

14. UMASS shall allow any authorized representative of the Administrator of the EPA to inspect the Site and to inspect records and take samples as may be necessary to determine compliance with the PCB regulations and this Approval. Any refusal by UMASS to allow such an inspection (as authorized by Section 11 of TSCA) shall be grounds for revocation of this Approval.

15. Any proposed modification(s) in the plan, specifications, or information in the Notification must be submitted to EPA no less than 14 calendar days prior to the proposed implementation of the change. Such proposed modifications will be subject to the procedures of 40 CFR § 761.61(a)(3)(ii).

    If such modification involves a change which results in exposures not considered in the Notification, the EPA may revoke, suspend, and/or modify this Approval upon finding that this risk-based cleanup and disposal action may pose an unreasonable risk of injury to health or the environment due to said change. EPA may take similar action if the EPA does not receive requested information needed from UMASS to make a determination regarding potential risk.

16. Any departure from the conditions of this Approval without prior, written authorization from the EPA may result in the revocation, suspension and/or modification of the Approval, in addition to any other legal or equitable relief or remedy the EPA may choose to pursue.

17. Any misrepresentation or omission of any material fact in the Notification or in any records or reports may result in the EPA's revocation, suspension and/or modification of the Approval, in addition to any other legal or equitable relief or remedy the EPA may choose to pursue.

RECORDKEEPING AND REPORTING CONDITIONS

18. UMASS shall prepare and maintain all records and documents required by 40 CFR Part 761, including but not limited to the records required under Subparts J and K. A written record of the decontamination and the analytical sampling shall be established and maintained by UMASS in one centralized location, until such time as EPA approves in writing a request for an alternative disposition of such records. All records shall be made available for inspection to authorized representatives of EPA.

19. UMASS shall submit a Final Completion Report (Report) to the EPA within 120 days of completion of the activities described under this Approval. At a minimum, this Report shall include: a discussion of the project activities; characterization and confirmation sampling analytical results; copies of the accompanying analytical chains of custody; field and laboratory quality control/quality assurance checks; an estimate of the quantity of PCBs removed and disposed off-site; copies of manifests and/or bills of lading; and, copies of certificates of disposal or similar certifications issued by the disposer, if applicable. The Report shall also include a copy of the recorded deed restriction and a certification signed by a UMASS official verifying that the authorized activities have been implemented in accordance with this Approval and the Notification.

20. As required under Condition 13 of this Approval, UMASS shall submit the results of the long-term monitoring and maintenance activities to EPA as specified in the final MMIP to be approved by EPA.

21. Required submittals shall be mailed to:

    Kimberly N. Tisa, PCB Coordinator
    United States Environmental Protection Agency
    5 Post Office Square, Suite 100 (OSRR07-2)
    Boston, Massachusetts 02109-3912
    Telephone: (617) 918-1527
    Facsimile: (617) 918-0527

22. No record, report or communication required under this Approval shall qualify as a self-audit or voluntary disclosure under EPA audit, self-disclosure or penalty policies.

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END OF ATTACHMENT 1