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: Alternative Decontamination Approval under 40 CFR §§761.61(a), 761.62, and 761.79(h)

Dear Mr. Robinson:

This is in response to the University of Massachusetts Amherst (UMASS) Application¹ for approval of a proposed PCB cleanup for structures identified as Tower A and the Low-Rise Building (together, "the Sites") located within the Lederle Graduate Research Center on the University of Massachusetts-Amherst campus. The Sites contain PCB-contaminated materials that exceed the allowable PCB levels under the federal PCB regulations at 40 CFR §761.61 and §761.62. Samples collected from indoor air also have identified PCB contamination inside Tower A and in the Low-Rise.

UMASS has requested an approval to decontaminate porous surfaces and non-porous surfaces contaminated with PCB-contaminated caulking (i.e. PCB bulk product waste) under 40 CFR §761.79(h). UMASS has also requested approval to clean up PCB-contaminated asphalt where a dumpster was previously located, and to remove and replace carpeting located in the Library. UMASS is proposing the following PCB cleanup standards and activities under this project:

- Decontamination of porous surfaces (i.e. concrete) and non-porous surfaces (i.e. metal window frames) located on the first floor of Tower A and the Low-Rise to less than or equal to (≤) 1 part per million (ppm) and to ≤ 10 µg/100 cm², respectively, which is consistent with the decontamination requirements for a high occupancy area under §761.61(a)(4);

¹ The decontamination plan was prepared by Environmental Health & Engineering on your behalf to satisfy the requirements under 40 CFR §§761.61(a), 761.62 and 761.79(h). A comprehensive listing of submitted documents is contained in Attachment 1. This Administrative Record comprises and will be referred to as the “Application.”
Decontamination of porous surfaces (i.e. concrete) and non-porous surfaces (i.e. metal window frames) on floors located above the first floors of Tower A and the Low-Rise to \( \leq 25 \text{ ppm} \) and to \( \leq 100 \mu g/100 \text{ cm}^2 \), respectively, which is consistent with the decontamination requirements for a low occupancy area under §761.61(a)(4);

Post-abatement indoor air sampling in Tower A and the Low-Rise, to verify that PCB indoor air concentrations have been reduced to less than \(< 0.29 \mu g/m^3\);

Removal of PCB-contaminated asphalt and associated soils with a PCB concentration greater than \( > 1 \text{ ppm} \); and,

Disposal of all wastes in a TSCA-approved disposal facility.

In a September 19, 2006 letter to EPA, UMASS determined that the caulking located in Towers B and C, which contains PCBs at \(< 50 \text{ ppm} \), is not a PCB bulk product waste, and meets the criteria of an Excluded PCB Product as defined at 40 CFR §761.3. As such, cleanup and disposal of this caulking is not addressed in this Approval. Should UMASS determine that the caulking containing \(< 50 \text{ ppm} \) does not meet these criteria, it shall be regulated as PCB bulk product waste or as a PCB remediation waste, as applicable.

Based on the EPA’s review, the information provided in the Application meets the requirements under 40 CFR §761.61, §761.62, and §761.79(h) for decontamination of porous and non-porous surfaces. Further, the proposed decontamination and disposal activities are consistent with the requirements and standards established under §761.61(a), §761.62, §761.79 for similar types of PCB-contaminated materials. The EPA finds that the activities proposed by UMASS will create no unreasonable risk when conducted in accordance with the Application and this Approval. UMASS may proceed with its cleanup in accordance with 40 CFR §761.61(a); §761.62; §761.79(h); its Application; and this Approval, subject to the conditions of Attachment 2. Of particular importance are the following items required under Attachment 2, Remedial and Disposal Conditions:

1. Indoor Air Monitoring Methods (Remedial and Disposal Condition 13.f) – In its Application, UMASS proposed NIOSH Method 5503 for post-remediation air monitoring. However, based on the limitations of this proposed method, EPA is requiring that post-decontamination air sampling be conducted in accordance with EPA Method TO-10A. This method provides a more flexible approach for measurement of PCBs in air and typically provides higher quality data to meet the majority of risk assessment needs.

2. Carpet Removal and/or Sampling – The Application proposes to remove and replace only the carpet in the Library. Given the concentration of PCBs in the carpet dust, there is potential for contamination to other carpeted areas inside the Low-Rise. Accordingly, this Approval requires UMASS to evaluate the carpeted areas in the Low-Rise and to develop a plan (or modify its Application) to clean and/or replace PCB-impacted carpeting (Remedial and Disposal Condition 13.e).
In its Application, UMASS indicates that the PCB contamination to the indoor air is believed to be associated with the initial rehabilitation activities when pressure washing was used around window openings. UMASS has proposed a risk-based standard for indoor air of 0.29 μg/m³.

Please note that at this time EPA is not approving the indoor air risk-based standard for the following reasons. While some of the indoor air PCB concentrations are likely attributable to the pressure washing around the windows, PCB contamination also was found in carpeting in the Library, which has elevated PCB indoor air levels. As such, following completion of the abatement activities proposed under this Approval, including replacement of PCB-contaminated carpeting, EPA anticipates that PCB indoor air concentrations should substantially decrease. However, there is also the potential that other sources of PCBs may be present. As such, this Approval does not address cleanup of the indoor air, but rather addresses removal of known PCB sources (e.g. caulking, carpeting, etc.). Under this Approval, EPA is reserving its right to require additional investigation or mitigation measures should indoor air concentrations not show substantial improvement.

Please also note that this Approval does not address cleanup of potential PCB-contaminated soils located within the proposed caulking removal areas around the building exteriors. Following completion of the activities authorized under this Approval, UMASS shall be responsible for investigating PCB contamination in these areas. In the event that this sampling identifies PCB contamination > 1 ppm, UMASS must submit a plan to address the PCB contamination in accordance with 40 CFR Part 761 and in accordance with applicable state, local, and/or other federal regulations.

EPA shall not consider the work authorized under this Approval to be complete until it has received all submittals required under this Approval. Should you have any questions on this matter, please contact Kimberly Tisa at (617) 918-1527.

Sincerely,

Robert W. Varney  
Regional Administrator

cc   Brian Fitzpatrick, UMASS  
     M. Chang, EH&E  
     Tony Kurpaska, MADEP

Attachment 1  
Attachment 2
UMASS AMHERST ALTERNATIVE DECONTAMINATION PLAN
ADMINISTRATIVE RECORD

Brian Fitzpatrick (UMASS) to Don Robinson (UMASS), Summary of Lederle Waterproofing Project, July 26, 2006

Results of ATC July 26, 2006 Site Sampling

Marianne Milette (EPA), Update on Site Referral, August 2, 2006

Gate Associates to Henry Merriman (UMASS), Summary of August 7, 2006 EPA Site Meeting, August 8, 2006

Kimberly Tisa to Gale Associates via e-mail, August 10, 2006. Clarification on August 8, 2006 Site Meeting Summary

EPA Summary of Telephone Conversation with EH&E, September 12, 2006

Max Chang (EH&E) to Kimberly Tisa (EPA) via e-mail, September 13, 2006. Update on interim measures for Engineering Library at UMASS Amherst.

Max Chang (EH&E) to Kimberly Tisa (EPA), Findings of Polychlorinated Biphenyls (PCBs) in Caulking from Towers B and C, Lederle Graduate Research Center, University of Massachusetts, Amherst, Massachusetts, September 19, 2006

Henry Merriman (UMASS) to Kimberly Tisa (EPA), Statement of Condition regarding Towers B and C, September 27, 2006

Lorraine Clark (Gale Associates) to Kimberly Tisa (EPA) via e-mail, October 4, 2006. Transmittal of October 3, 2006 Construction Conference Meeting Minutes

Preliminary Report of Building-Related Polychlorinated Biphenyls Assessment, Lederle Graduate Research Complex, University of Massachusetts, Amherst, Massachusetts. October 12, 2006

EPA Summary of Telephone Conversation with EH&E, November 13, 2006

Lederle Graduate Research Center Tower A and Low-Rise, University of Massachusetts, Amherst, Massachusetts. Plan for Removal and Abatement of Building-Related Polychlorinated Biphenyls (PCBs), February 21, 2007

Additional Indoor Sample Results Lederle Graduate Research Complex, University of Massachusetts, Amherst, Massachusetts, February 21, 2007
Max Chang (EH&E) to Kimberly Tisa (EPA) via e-mail, February 22, 2007. Notification on submittal of Abatement Plan for the University of Massachusetts

Max Chang (EH&E) to Kimberly Tisa (EPA) via e-mail, February 27, 2007. Summary of conversation for LGRC abatement plan

Kimberly Tisa (EPA) to Max Chang (EH&E). Comments on Removal and Abatement Plan for PCBs, March 7, 2007

Addendum to Comments for the Alternative Abatement Application Under 40 CFR §761.79(h) for Tower A and the Low-rise Building of the Lederle Graduate Research Center, Amherst, Massachusetts, March 22, 2007

Max Chang (EH&E) to Kimberly Tisa (EPA) via e-mail, April 10, 2007. Summary of conversation for LGRC abatement plan

Kimberly Tisa (EPA) to Max Chang (EH&E) via e-mail April 16, 2007. Summary of outstanding issues on PCB decontamination plan

Max Chang (EH&E) to Kimberly Tisa (EPA) via e-mail April 18, 2007. Clarification on library carpet removal

Versar Inc. to Laura Casey (EPA), April 24, 2007. Review of “Lederle Graduate Research Center Tower A and Low-Rise, University of Massachusetts, Amherst, Massachusetts: Plan for the Removal and Abatement of Building-Related Polychlorinated Biphenyls (PCBs)” (February 21, 2007).

Max Chang (EH&E) to Kimberly Tisa (EPA) via e-mail April 25, 2007. Transmittal of Table 6 TEQ Calculations

Versar Inc. to EPA via e-mail April 25, 2007. Summary of April 25, 2007 telephone calls with EPA

Kimberly Tisa (EPA) to Versar Inc. via e-mail April 26, 2007. Clarification of April 25, 2007 Telephone Summary

Kimberly Tisa (EPA) to File. Clarification on Risk Assessment Comments, April 30, 2007

Versar Inc. to Laura Casey (EPA). Review of Additional Data Submitted in Spreadsheet “092206 Homolog Samples updated TEFs.xls” for “Lederle Graduate Research Center Tower A and Low-Rise, University of Massachusetts, Amherst, Massachusetts: Plan for the Removal and Abatement of Building-Related Polychlorinated Biphenyls (PCBs)”, May 1, 2007

Max Chang (EH&E) to Kimberly Tisa (EPA) via e-mail May 10, 2007. Transmittal of Table 6 spreadsheet for risk characterization. (Response to Versar May 1, 2007 comments)
EH&E Presentation on Lederle Graduate Research Center Abatement Project, Tower A and Low-rise. May 23, 2007

Max Chang (EH&E) to Kimberly Tisa (EPA) via e-mail May 24, 2007. Follow-up activities from May 23, 2007 site visit at contractor staging area


Max Chang (EH&E) to Kimberly Tisa (EPA) via e-mail June 7, 2007. Response to Versar’s May 31, 2007 comments

Max Chang (EH&E) to Kimberly Tisa (EPA) via e-mail June 8, 2007. Transmittal of UMass draft communications plan


Max Chang (EH&E) to Kimberly Tisa (EPA) via e-mail June 13, 2007. Façade Rinsate PCB Calculations

Kimberly Tisa (EPA) to Max Chang (EH&E) via e-mail June 13, 2007. Clarification on Façade Rinsate PCB concentration requirements

Max Chang (EH&E) to Kimberly Tisa (EPA) via e-mail June 14, 2007. Façade Rinsate Revised PCB Calculations
ATTACHMENT 2: PCB ALTERNATIVE DECONTAMINATION APPROVAL
TOWER A AND THE LOW-RISE BUILDING ("the Sites")
LEDERLE GRADUATE RESEARCH CENTER (LGRC)
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 Sites and identified in the Application, which includes the following:

   a. PCB-contaminated caulking;
   b. PCB-contaminated building materials, including windows and the concrete panel joints;
   c. PCB-contaminated carpeting;
   d. PCB-contaminated interior building surfaces; and,
   e. PCB-contaminated asphalt and/or soil located within the former dumpster storage area.

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

3. 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.

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

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

6. 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 response actions, UMASS shall contact EPA within 24 hours for direction on PCB cleanup and sampling requirements.
7. 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 UMASS 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.

8. 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 Application. 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.

9. UMASS shall notify EPA in writing of the scheduled date of commencement of on-site activities at least 5 business days prior to conducting any work under this Approval.

10. This Approval does not waive or compromise EPA's enforcement and regulatory authority, nor release UMASS from any applicable requirements of federal, state or local law.

**REMEDIAL and DISPOSAL CONDITIONS**

11. Prior to initiating onsite work under this Approval, UMASS shall submit the following information for EPA review and/or approval:

a. a certification signed by its selected demolition and/or remediation contractor, stating that the contractor(s) has read and understands the Application, and agrees to abide by the conditions specified in this Approval;

b. a certification signed by the selected analytical laboratory, stating that the laboratory has read and understands the analytical and quality assurance requirements specified in the Application and in this Approval; and,

c. a perimeter air monitoring plan which will be implemented during abatement work. The air monitoring plan shall include information on air monitoring procedures and analytical methods, air action levels, and procedures that will be employed if action levels are exceeded.

12. 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.
13. PCB-contaminated materials shall be decontaminated and confirmatory sampling and analysis shall be conducted as described below:

a. All visible residues of PCB-contaminated caulking (i.e. PCB bulk product waste) shall be removed as described in the Application.

b. The decontamination standard for building porous surfaces (i.e. concrete) shall be less than or equal to 1 part per million (≤ 1 ppm) PCBs for the first floors of Tower A and the Low Rise (i.e. the high occupancy areas) and ≤ 25 ppm for the floors located above the first floors (i.e. the low occupancy areas).

   i) All post-decontamination verification sampling of porous surfaces shall be performed on a bulk basis (i.e. mg/Kg). 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.

   ii) For the initial decontamination activities, the minimum confirmatory sampling frequency shall be 1 sample per every 50 linear feet for the first 1,000 feet of decontaminated porous surfaces. For purposes of demonstrating the effectiveness of the decontamination process, the confirmatory sampling frequency for the initial decontamination must be conducted in both the high occupancy area and low occupancy area.

   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 method(s) is validated according to Subpart Q.

   iv) Upon completion of the initial decontamination, UMASS shall submit all analytical results to EPA for a determination on the appropriate confirmatory sampling frequencies for the remaining porous surfaces. Otherwise, UMASS shall continue to use the initial confirmatory sampling frequency for the remainder of the project.

c. The decontamination standard for non-porous surfaces (i.e. metal frames) shall be ≤ 10 µg/100 cm² PCBs for the first floors of Tower A and the Low Rise (i.e. the high occupancy areas) and ≤ 100 µg/100 cm² for the floors located above the first floors (i.e. the low occupancy areas).

   i) 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. µg/100 cm²) and samples shall be collected as described in the Application.
ii) For the initial decontamination activities (i.e. the first 20 windows), the minimum confirmatory sampling frequency shall be a minimum of 50% (i.e. 10 windows). For purposes of demonstrating the effectiveness of the decontamination process, the confirmatory sampling frequency for the initial decontamination must be conducted in both the high occupancy area and low occupancy area.

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 method(s) is validated according to Subpart Q.

iv) Upon completion of the initial decontamination, UMASS shall submit all analytical results to EPA for a determination on the appropriate confirmatory sampling frequencies for the remaining non-porous surfaces. Otherwise, UMASS shall continue to use the initial confirmatory sampling frequency for the remainder of the project.

v) In lieu of conducting decontamination, PCB-contaminated non-porous surfaces may be disposed of in accordance with §761.61(b).

d. The decontamination standard for asphalt and for soils located in the former dumpster storage area shall be ≤ 1 ppm.

i) Asphalt 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 and in accordance with 40 CFR Part 761, Subpart O sampling frequency requirements.

ii) Bulk PCB remediation waste samples (i.e. soils) 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, Subpart O.

iii) 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.
e. UMASS shall conduct an investigation of carpeting inside the Low-Rise to ascertain the location of carpeting with PCB concentrations at greater than (>) 1 ppm. Upon completion of this investigation, UMASS shall submit the results of the sampling to EPA and shall submit its plan for decontamination and/or removal of the carpeting if PCBs at > 1 ppm are present. In lieu of undertaking this investigation or limiting its scope, UMASS may opt to remove and replace the carpeting.

i) 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.

f. Post-abatement indoor air sampling and indoor surface sampling for PCBs shall be conducted to determine the impact of the abatement activities.

i) Indoor air sampling shall be conducted in accordance with EPA Method TO-10A. Sufficient sample volumes shall be collected to provide a minimum laboratory reporting limit of < 0.1 µg/m³. Higher sample volumes (lower laboratory reporting limits) may be necessary for PCB congener analysis to support the risk-based air cleanup standard and to evaluate the contribution of dioxin-like PCB congeners.

ii) Wipe sampling of indoor surfaces shall be performed on a surface area basis by the standard wipe test as specified in 40 CFR §761.123 (i.e. µg/100 cm²). 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.

iii) PCB analysis shall be conducted for PCB homologues and/or PCB congeners by EPA Method 680 or EPA Method 1668, and/or for PCB Aroclors by EPA Method 8082, as appropriate.

g. For decontaminated porous and 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.

h. As UMASS has proposed pressure washing of abated porous surfaces, which will have residual PCB concentrations > 1 ppm, a pilot test shall be conducted to determine the PCB concentration in the water from the pressure washing. Laboratory analytical results shall be submitted to EPA. In the event that PCB concentrations in the water are ≥ 0.50 parts per billion (µg/L), UMASS shall be required to develop a plan for capture and management of the water.
14. PCB waste generated as a result of the activities described in the Application, excluding any decontaminated materials, shall be marked in accordance with CFR 40 CFR §761.40; stored in a manner consistent with 40 CFR §761.65; and, disposed of in accordance with 40 CFR §761.61 or §761.62, unless otherwise specified below.

a. Non-liquid cleaning materials, PPE and similar materials resulting from decontamination may be disposed of in accordance with 40 CFR §761.79(g)(6).

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 or dewatering shall be decontaminated in accordance with 40 CFR §761.79(b)(1) or disposed of under §761.70.

INSPECTION, MODIFICATION AND REVOCATION CONDITIONS

15. 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.

16. Any proposed modification(s) in the plan or specifications contained in the Application or 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 Application 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 report to the EPA within 60 days of completion of the activities authorized under this Approval. At a minimum, this final report shall include: a short narrative of the project activities; characterization and confirmation sampling analytical results, including indoor air sampling results; copies of the accompanying analytical chains of custody; field and laboratory quality control/quality assurance checks; an estimate of the quantity of PCB waste disposed of and the size of the decontaminated area(s); copies of manifests and bills or lading; and copies of certificates of disposal or similar certifications issued by the disposer.

20. Within 60 days of completion of the cleanup activities described in the Application and authorized by this Approval, and as required under §761.61(a)(8)(i)(B), UMASS shall submit to EPA a certification, signed by a UMASS approving official, that it has recorded the notation on the deed as required under §761.61(a)(8)(i)(A). A copy of the notation on the deed must also be submitted.

21. Required submittals shall be mailed to:

   Kimberly N. Tisa, PCB Coordinator
   United States Environmental Protection Agency
   1 Congress Street, Suite 1100 – CPT
   Boston, Massachusetts 02114-2023
   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 2