



PCB REMEDIATION PLAN

**CHENOWETH LAB ADDITION
(ROOM 219)**

**HEALTH & WELLNESS CENTER &
ELECTRICAL UPGRADES**



PREPARED FOR:

**UNIVERSITY OF MASSACHUSETTS
40 CAMPUS CENTER WAY
AMHERST, MASSACHUSETTS**

MAY 25, 2010

PREPARED BY:

**ATC ASSOCIATES, INC.
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1. Introduction and Scope of Work

ATC Associates Inc (ATC) on behalf of the University of Massachusetts – Amherst (UMASS) has prepared the following PCB Remediation Plan for removal of window glazing compound at Chenoweth Laboratory Addition.

Chenoweth Laboratory Addition is a 4 story building constructed in 1966 on the University of Massachusetts Amherst campus. The building consists of laboratories, classrooms and offices.

A project at Chenoweth Lab was bid for an interior renovation of Room 219 located at the 2nd Floor. The scope included a full gut of the room in order to convert the area to a new research laboratory space and offices. As part of the work, five (5) window units were to be retrofitted with new glass and one (1) exterior vent was to be replaced to support laboratory operations. The Contract was awarded to Souliere & Zepka Construction in February 2010.

2. The Nature of the Contamination

ATC Associates Inc. performed testing of the window glazing compound and caulking on the exterior vent on March 24, 2010 for the presence of PCB's. The samples were analyzed by New England Testing Laboratory, Inc., using EPA SW-846 Method 8082 and Method 3540C. See Appendix B for the PCB analytical report.

Sample ID	Description/Location	Aroclor	Result	Detection Limit
CH-01	Room 219, Flat Window Glazing Compound	1260	750 ppm	1.0 ppm
CH-02	Room 219, Thick Window Glazing Compound	1260	2,600 ppm	1.0 ppm
CH-03	Exterior Vent Caulking – Rear Exit	1016/1242	6.6 ppm	1.0 ppm

The analytical result for the exterior caulking located on the vent was not at or above the associated TSCA defined level of 50 ppm that would characterize this material as a PCB Bulk Product Waste. The vent caulking was a different color and textured as compared to the window glazing compound and its use was different from the uses where the glazing compound was found to contain PCB's. Furthermore, there was no evidence of a spill or release of PCB oil at this location. Therefore, the detectable concentration of PCB's in the caulking were most likely a result of the manufacturing process and the material is considered an "Excluded PCB Product" under 40 CFR 761.3 (iii).

3. The Location and Extent of the Identified Contaminate Area

The window glazing replacement will be limited to five (5) window units located in Room 219 (Refer to Attachment C). The two samples of window glazing compound reported concentrations of ≥ 50 ppm and based on these results, it is assumed that all five windows have glazing compound ≥ 50 ppm. Adjacent to the glazing compound is the glass pane and the raw aluminum window frame. Per 40 CFR 761.123, these are impervious solid surfaces. Thus the extent of PCB contamination is limited to the glazing compound and the PCBs should not migrate into the glass and aluminum frame. The glass panes will be disposed of with the PCB caulk and the raw aluminum window frames will be cleaned per 40 CFR 761.61 (a) (4)(ii) non-porous surfaces to $10 \mu\text{g}/100 \text{ cm}^2$.

4. Remediation Plan

The following section provides a summary of the remediation plan proposed.

- The window glazing compound is considered a PCB bulk product waste as defined under 40 CFR 761.3 and has a no authorized use limitation. The glazing compound will be removed and disposed of in accordance with 40 CFR 761.62.
- The window frame adjacent to the window glazing compound will be decontaminated via an alternative standard under 40 CFR 761.79(h) which is based on visual removal and post decontamination surface wipe sampling.

Previous testing of the windows glazing compound indicated that the material also contains asbestos. Removal of the is material will be performed by a Massachusetts licensed Asbestos Abatement Contractor in accordance with federal Occupational Safety and Health Administration (OSHA) 29 CFR 1926.1101 Regulations, Massachusetts Department of Labor and Industry (DLWD) 453 CMR 6.0 Regulations, Massachusetts Department of Environmental Protection (DEP) 310 CMR 7.15 Regulations and the PCB Standard 40 CFR 761. ATC will oversee the abatement and monitor the job. The following summarizes the scope for remediation:

4.1 Site Preparation and Controls

Prior to initiating the removal of any of the glazing compound, the following site controls will be implemented:

- A Health and Safety Plan will be developed 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, asbestos standards, fall protection standards, respiratory protection, ladder safety, personal protective equipment, etc.

- Critical Barriers: Prior to masking and sealing operations which will designate the asbestos and PCB containing material removal work area, windows, doors, openings, ducts, drains, and vents will be masked and sealed with a minimum of one layer of six mil polyethylene sheeting. Voids in the walls, ceiling, or roof systems will be sealed with fire retardant spray foam. In addition, the exterior side of the windows to be remediated will also be sealed with one layer of six mil polyethylene sheeting for the duration of the entire remediation project.
- Full enclosure procedures as defined by 453 CMR 6.14 will be required for the work site. Post the work area entrances outside the actual enclosure with Asbestos warning labels and barricade tape. Completely isolate the work areas from other parts of the building which includes the interior and exterior sides of the window, so as to prevent asbestos- containing and PCB containing dust or debris from passing beyond the isolated area. Clean all surfaces in enclosure within a 20 foot radius from the window with a HEPA vacuum and wet wiping prior to the installation of plastic sheets. Provide mechanically supported plastic sheet barrier between work area and all other sections of the building. Floors shall be masked and sealed with two layers of six mil plastic sheeting with a minimum overlap of two feet at seams and up walls. Walls shall be covered with two layers of six mil polyethylene sheeting arranged so each layer overlaps on the outside of the respective layer of floor polyethylene sheeting that has been run up the wall. The containment shall remain up during all phases of the remediation project and will not be torn down until clearance criteria has been met for both asbestos and PCB's as specified herein.
- Decontamination Chambers will be provided by the Contractor which consists of an equipment room, shower and clean room.
- HEPA Filtration Requirements: After masking and sealing is completed, the Contractor and Project Monitor shall smoke test to confirm negative pressure inside the contained worksite. The volume of air within the contained worksite shall be changed at least four times per hour or once every fifteen minutes. The Contractor shall be responsible for the use of negative air pressure with continuous recording charts to confirm a negative air pressure of at least 0.02 inches of water column per full containment.

4.2 Removal and Cleaning

The following summarizes the activities to be conducted as part of the removal task:

- Wetting of asbestos and PCBs is to be done with low pressure spray equipment, using water amended with a wetting agent/surfactant containing fifty percent polyoxyethylene ether and fifty percent polyoxyethylene ester, or the equivalent, mixed one ounce to five gallons of water.
- A DOT-approved steel container will be staged for the collection of PCB wastes generated during the work activities in accordance with 40 CFR 761.65. The sash

- will be removed and the window pane with glazing compound will be disposed of into this drum. The remaining compound on the frame will be initially removed using a combination of mechanical and physical means and disposed of in the same drum. All containers will be properly labeled and marked in accordance with 40 CFR 761.40.
- Upon completion of the initial removal activities, the frames will be visually inspected for the presence of any residual glazing compound. Given that the glazing is visually apparent, this visual inspection will be the primary verification method for the removal. If residual glazing compound is observed, then any residual glazing compound will be removed from the adjacent frame using a combination of mechanical and physical means until the residual glazing compound has been removed to the maximum extent practical.
 - Containerized waste will be removed from the work area through the decontamination chamber. All tools and equipment will be removed from the work area and decontaminated in the decontamination chamber. Cloth, mops and other cleaning aids will be disposed of as asbestos containing and PCB containing waste material.
 - The Contractor will then clean the window frame using a double wash/rinse to meet the cleanup standards under 40 CFR 761.61(a) for non-porous surfaces. "Double wash/rinse means a minimum requirement to cleanse solid surface (both impervious and nonimpervious) two times with an appropriate solvent or other material in which PCBs are at least 5 percent soluble (by weight). A volume of PCB-free fluid sufficient to cover the contaminated surface completely must be used in each wash/rinse. The wash/rinse requirement does not mean the mere spreading of solvent or other fluid over the surface, nor does the requirement mean a once-over wipe with a soaked cloth. Precautions must be taken to contain any runoff resulting from the cleansing and to dispose properly of wastes generated during the cleansing.
 - After completion of the cleaning by the Contractor, ATC personnel will allow sufficient time for the metal window frame to adequately dry before performing PCB clearance wipe sampling. A minimum of three samples per window and a field blank will be collected per 40 CFR 761.123 Standard Wipe Tests for spills of high-concentration PCBs on solid surfaces and shall be extracted/analyzed using EPA Methods 3540C/8082. The windows are 4 feet-3 ¾ inches wide by 5 feet- 2 5/8 inches high, thus the linear footage per window is approximately 19 feet. The clearance criteria will be $\leq 10 \mu\text{g} / 100 \text{cm}^2$. If a window does not meet the clearance criteria the entire window will undergo another double wash/rinse and the clearance wipe sampling will be repeated. Although not anticipated and after cleaning efforts have been exhausted, if PCB levels are not measured lower in subsequent testing, window frames may be required to be removed and disposed of as PCB remediation waste.

- ATC will perform air monitoring for asbestos outside the containment area during active removal of the glazing compound. All air samples shall be analyzed by Phase Contrast Microscopy (PCM) in accordance with the NIOSH 7400 Method. Acceptable airborne concentrations for asbestos shall be less than 0.01 fibers per cubic centimeter of air (<0.01 f/cc).
- Final air clearance testing for asbestos shall also be performed prior to tear down of the containment. All final air clearance testing shall be performed in accordance with state of Massachusetts Regulations and the work area shall be considered complete if the airborne fiber concentration of all air samples analyzed by Phase Contrast Microscopy (PCM) is <0.01 fibers per cubic centimeter.

4.3 Disposal

The following activities will be completed with regard to the proper disposal of PCB wastes:

- All PCB containing glazing compound, window panes, glass and associated wastes will be designated for disposal as PCB Bulk Product Waste in accordance with 40 CFR 761.62.
- All containers will be properly labeled and marked in accordance with 40 CFR 761.40
- Upon completion of the work, the PCB bulk product waste will be transported under manifest, off-site for disposal to a TSCA approved landfill.
- Copies of all manifests, waste shipment records, and certificates of disposal will be collected and provided as part of the final report to EPA.

5. Recordkeeping and Documentation

Following completion of the work activities, records and documents per 40 CFR 761 will be generated and maintained at one location. These documents will be made available to EPA upon request. A final report documenting the completion of the work activities and including but not limited to a description of the work activities, verification analytical results, volumes of disposed materials, and waste disposal documentation will be prepared and submitted to EPA.

6. Schedule

The asbestos and PCB abatement project is scheduled to begin in June 2010 upon receipt of Notification for Approval from the EPA.

Appendix A

Written Certification

Certification

The undersigned owner of the property where the cleanup site is located and the party conducting the cleanup certify that all sampling plans, sampling 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 indicated below and are available for EPA inspection, as set forth below.

PCB Abatement Location:

Chenoweth Lab Addition (Room 219)

Document Location:

Environmental Health and Safety
117 Draper Hall
University of Massachusetts
40 Campus Center Way
Amherst, MA 01003

Authorized Signature:

Property Owner: The University of Massachusetts

Authorized Signature: _____ Date: _____

Name of Authorized
Representative (print):

Donald A. Robinson, CSP, P.E., Ph.D.

Director, Environmental Health and Safety Special
Assistant to Vice Chancellor of Administration and Finance
for Emergency Management



Appendix B
PCB Analytical Report

Appendix C

Floor Plan