

**United States Environmental Protection Agency**  
**Region I**  
**POLLUTION REPORT**

**Date:** Tuesday, September 26, 2006

**From:** Elise Jakabhazy

**Subject:** RISD Mercury Release - FINAL POLREP

RI School of Design Mercury Release

212 Union Street, Providence, RI

Latitude: 41.8225000

Longitude: -71.4122000

<b>POLREP No.:</b>	2	<b>Site #:</b>	
<b>Reporting Period:</b>	5/15/06 - 09/13/06	<b>D.O. #:</b>	
<b>Start Date:</b>	5/14/2006	<b>Response Authority:</b>	CERCLA
<b>Mob Date:</b>	5/14/2006	<b>Response Type:</b>	Emergency
<b>Demob Date:</b>	5/19/2006	<b>NPL Status:</b>	Non NPL
<b>Completion Date:</b>	9/13/2006	<b>Incident Category:</b>	
<b>CERCLIS ID #:</b>		<b>Contract #</b>	
<b>RCRIS ID #:</b>			

#### Site Description

The Site, located at the corner of Union and Weybosset Streets, (address 212 Union Street and at Lat. 41° 49' 19" N, Long. 71° 24' 43" W), consists of two 6-story commercial buildings that house Rhode Island School of Design (RISD) graduate student studios, classrooms, continuing education program and faculty offices with several tenants on the ground floor. This RISD graduate complex, located in downtown Providence Rhode Island, was formed in the early part of this century from two separate buildings: 1) an 1800s-era historic building called The Fletcher Building ("Fletcher"); and 2) a mid-1900s-era building called The Mason Center for Integrative Technologies Building ("Mason").

An indoor release of elemental mercury of on a second floor hallway was reported on Sunday May 14, 2006 at 1645 hours; the Providence Fire Department (PFD) were the first responders and secured the site. Environmental response actions were initiated by the Rhode Island Department of Environmental Management (RIDEM), who conducted preliminary site monitoring with a mercury vapor analyzer. During the first few hours of the incident, the RISD administration immediately hired an environmental services contractor to recover the free mercury and commence cleanup activities.

EPA assistance was requested for additional air monitoring assets. OSC Mike Barry arrived on scene (with contractor assets) at 2145 hours and commenced air monitoring. The size of the initial mercury release was estimated at approximately 2' x 2' and 1/4' to 1/8' thick for a quantity of approximately 0.25 to 0.5 pounds (the CERCLA reportable quantity is 1 pound). Initial monitoring results after removal of the free mercury indicated mercury vapors widespread throughout the building below occupational levels, but above re-occupancy levels (several 100 to 50,000 nanograms/cubic meter).

#### Current Activities

Following the initial emergency response, EPA's continued assistance was requested by RIDEM due to a regional unavailability of low-level mercury detection screening devices (such as Lumex Mercury Analyzers) to assist with screening and oversight of the PRP (RISD). May 15, 2006 - May 19, 2006 - OSC Elise Jakabhazy replaced OSC Mike Barry in unified command for the duration of the response.

RISD hired two cleanup contractors to perform the work: Clean Ventures and Clean Harbors (eventually, Clean Harbors assumed the role as Prime, and continued to sub-contract to Clean Ventures). Initially, Clean Ventures performed the work of cleaning the shoes of affected students who had unknowingly walked through and tracked mercury contamination throughout the two buildings. Also, Clean Ventures worked to bag, document, and screen several pieces of graduate student artwork that were determined essential for immediate recovery (due to their affiliation with a high-profile art show in New York City). Clean Harbors was hired due to the increasing scope of the project, and their role was to screen rooms and common spaces to ensure that both the Fletcher and Mason buildings met the <300 ng/m<sup>3</sup> mercury readings (initially they only had 1 Lumex until May 19, 2006).

The basis for the screening techniques were derived using the U.S. EPA ERT Metallic Mercury Spill Response Guide by Raj Singhvi and their efficacy was evaluated by a third independent contractor, OccuHealth, Incorporated (industrial hygienists).

Due to the size of the buildings, and the relative complexity of the floor plans (individual graduate art spaces and offices had been built three years ago - some with only  $\frac{3}{4}$  height walls that allow air flow creating larger spaces impacted by circulating HVAC air), EPA, RIDEM and EPA contractors remained on-site until May 19, 2006 to assist with the low-level mercury screening regimen. Since initially the mercury levels were not decreasing below 300 ng/m<sup>3</sup> throughout the buildings, it was decided to seal off the buildings and bring in an external HVAC unit to pump in hot air (>80F) during the evening hours (venting occurred during daylight hours).

During day time operations, once EPA/RIDEM and/or Clean Harbors identified rooms or public areas that still did not meet the residential re-occupancy thresholds, Clean Ventures followed behind these two teams and cleaned the areas with mercury vacuum cleaners and/or specialized chemical cleaners (all wastewater was containerized and disposed of in accordance with state and federal regulations). Porous items (such as rugs near the elevators) were removed to the secured out-side staging area and cleaned and screened before replacing them in clean areas. All the areas that had undergone cleaning techniques were then re-screened to determine if the cleanup procedures were sufficient.

On May 18, 2006, following the screening and cleaning in Mason (this was not the building where the spill originated), several seven hour mercury vapor samples were collected on hopcalite filters by RISD's hired industrial hygienist. On May 19, 2006, the samples were analyzed at a certified laboratory and the results indicated that there were no levels of Mercury (non-detect) – and the Mason building was determined eligible for re-occupancy.

During the evening hours on May 19, 2006, RISD Public Safety employees isolated the Mason building by securing the connecting stairwells between the Fletcher and Mason buildings with new locks. Next, they placed heavy-mil plastic with duct tape up on the doorways between the two buildings on the Fletcher side of the stairwells. By 18:00, the student population was notified via email that the Mason building ONLY was safe to re-enter. (Unfortunately, a large fire starting in a local restaurant on the same block as these two buildings occurred on May 20, 2006 – and re-occupancy of Mason was delayed for several more days after the building burned down completely and was demolished.) In the interim, while fire fighting activities occurred at the end of the block, Clean Harbors' crews continued to heat the building with the external HVAC system and cleaned some of the areas of concern in the Fletcher building.

Work within the Fletcher building continued for several more weeks until May 26, 2006. Several of the upper floors were re-screened, cleaned, sampled (with hopcalite filters which were then analyzed in a certified laboratory) and then cleared for re-occupancy. RISD instituted a partial re-occupancy plan that allowed for the upper floors to be opened, while the lower floors were isolated (the lower floors were found to have some areas of concern that chronically yielded Lumex readings at > 300 ng/m<sup>3</sup>).

Throughout the summer, the Fletcher building continued to have two areas of concern where the mercury levels continued to exceed the re-occupancy standard based upon Lumex readings. These areas were: the site of the initial spill on the second floor landing; and the corner of room 306B. After cleaning and mercury vacuuming proved unsuccessful, it was decided to demolish: the 2nd floor stairwell floorboards; a 6' x 6' section of flooring in room 306B; plus a 6' x 6' section of the ceiling in the room below 306B on the second floor.

Once the floorboards in these areas of concern were removed, no free product was discovered (however, the screening revealed 20,000 – 30,000 ng/m<sup>3</sup> of mercury in the areas). The area between the floor joists was cleaned; mercury vacuum cleaners were employed; and the areas were finally sprayed with an adhesive paint to further seal the surface. The floors and ceiling were ultimately re-built and then painted; and the rooms were caulked to further seal the areas. All waste was collected and disposed of by Clean Harbors. Following the completion of this work, the areas were re-screened and then hopcalite samples were taken for verification.

On September 12, 2006 RISD notified RIDOH and RIDEM that the work was complete, and that all areas met the re-occupancy standards of >300 ng/m<sup>3</sup> mercury (almost all areas were completely non-detect). On September 13, 2006 RISD notified the students and faculty that the un-restricted re-occupancy of the Fletcher building had been achieved.

#### **Planned Removal Actions**

As of September 13, 2006 - both the Fletcher Building and the Mason Building have been 100% cleared

for re-occupancy based upon residential cleanup levels. Both buildings have been cleaned, screened and sample have been taken and analyzed).

No further removal actions are planned.

There are no current removal/remediation activities at this location anymore.

### **Next Steps**

There are no next steps.

Case closed.

### **Key Issues**

Using the U.S. EPA Environmental Response Team Metallic Mercury Spill Response Guide by Raj Singhvi was very crucial to the success of this cleanup. It is key for environmental responders to understand the relationship between the screening results obtained from an Ohio Lumex Mercury Analyzer and the clearance samples (taken and analyzed on hopcalite filters) to determine if buildings are safe for re-occupancy.

Another key thing to note was that for this mercury spill, residential re-occupancy levels were used at the RISD complex instead of commercial re-occupancy levels. (RIDEM, EPA and RIDOH all agreed that graduate students in the arts tend, on average, to spend most of their working and free time in their studios – and thus, the residential standard was most applicable to this scenario.)

[response.epa.gov/RISD](https://response.epa.gov/RISD)