

United States Environmental Protection Agency
Region IV
POLLUTION REPORT

Date: Thursday, April 13, 2006

From: Kevin Misenheimer

Subject: Initial / Final Pollution Report

Montessori Community School Mercury Release

4512 Pope Road, Chapel Hill, NC

Latitude: 55.3000000

Longitude: -55.1000000

POLREP No.:	1	Site #:	
Reporting Period:	April 9 to April 11, 2006	D.O. #:	
Start Date:	4/10/2006	Response Authority:	CERCLA
Mob Date:	4/9/2006	Response Type:	Emergency
Demob Date:	4/11/2006	NPL Status:	Non NPL
Completion Date:	4/11/2006	Incident Category:	Removal Action
CERCLIS ID #:		Contract #	
RCRIS ID #:			

Site Description

The Montessori Community School is located at 4512 Pope Road in Chapel Hill, Durham County, North Carolina. A release of mercury occurred on 4 April 2006 at approximately 1700 hours when a maintenance worker removed the drain trap from a sink located in school room 500. An estimated one teaspoon of mercury was released from the drain and spilled onto the floor near the kitchen area of room 500 (also known as the adolescent room). School officials secured the room, called 911 and also contained some of the spilled mercury using a squeegee. Representatives from the Chapel Hill Fire Department and the Durham County Emergency Management department responded to the school and recommended that an environmental clean up contractor be contacted. Local officials also notified State of North Carolina representatives (Department of Environment and Natural Resources and Division of Public Health). School officials contacted contractor Hepaco who responded to the scene on the morning of 5 April 2006. Hepaco vacuumed up the visible mercury, removed the contaminated drain trap and applied mercury absorbents to the affected area. Hepaco also screened the room using a Jerome mercury vapor analyzer. The room was also ventilated. The school replaced the drain trap and the room was occupied by teachers and students on 6 and 7 April 2006.

Hepaco returned to the school on 7 April and conducted additional monitoring using the Jerome. Hepaco reported finding elevated mercury levels in several other classrooms in the school. Based on these reports, the school made further contacts with the State Division of Public Health who recommended that a Lumex mercury vapor analyzer be used to monitor the school. The school contacted the Ohio Lumex company and ordered a mercury vapor analyzer which was scheduled to be delivered on Monday, April 10. The school subsequently contacted the University of North Carolina, Department of Environment, Health and Safety (UNC) who agreed to mobilize their Lumex to the site. UNC arrived at the school on 9 April 2006 to conduct additional monitoring using the Lumex. All of the rooms in the school were cleared with the exception of room 500. Mercury vapor concentrations in room 500 ranged from 2,400 to 3,500 ng/m3, with higher levels observed near the kitchen and sink. The State Division of Public Health contacted the EPA Duty officer during the afternoon of 9 April 2006 and a National Response Center (NRC) report was filed shortly thereafter (NRC 793487). R-1 OSC Misenheimer was dispatched to provide technical assistance to the school on the evening of 9 April 2006.

Current Activities

OSC Misenheimer arrived at the Montessori Community School at 0830 on 10 April 2006. After meeting with Ms. Barbara Crockett, Head of School, OSC Misenheimer conducted an assessment of room 500 using the EPA owned Lumex mercury vapor analyzer (EPA ID A35739). Concentrations of mercury in the room ranged from 1,000 to 2,000 ng/m3, with higher levels in and around the sink (2,200-2,800 ng/m3). During the assessment it was noted that mercury concentrations were also higher near the floor and carpet in the room.

Based on the assessment, the OSC recommended to Ms. Crockett that actions should be taken to mitigate the mercury spill and to reduce mercury concentrations in the room to the EPA Region 4

recommended level (1,000 ng/m³). EPA recommended the following actions: 1) Remove and dispose of the carpet in the room; 2) Apply mercury absorbent and wipe down all surfaces including the linoleum floor in the kitchen; 3) Remove the sink and plumbing and clean around the affected area; 4) Heat and ventilate the room; 5) Allow the room temperature to stabilize and then conduct clearance monitoring using the Lumex for a period of eight hours. EPA and the school representatives convened a conference call to discuss these priorities with the NC Division of Public Health, contractor Hepaco and an Industrial Hygienist from EI, Inc. After the conference call, the school requested that Hepaco and EI, Inc. mobilize resources to the school to undertake the planned activities.

At approximately 1330 on 10 April 2006, OSC Misenheimer met with Mr. Lindsay Cook from EI, Inc. who arrived on site. Several entries into room 500 were made by the OSC and Mr. Cook. Mercury concentrations were monitored using both the EPA Lumex and the one rented by the school. Concentrations of mercury ranged from 1,600 to 2,300 ng/m³ in the breathing zone throughout the classroom, with higher levels detected in the kitchen, near the floor and carpet and around the sink (2,000 – 3,000 ng/m³). Hepaco representatives arrived on site that afternoon and began to remove items from the room in preparation for clean up activities. Hepaco removed the carpet and the drain trap and piping underneath the sink. In addition, the sink and cabinets around the sink were removed. While conducting this operation, additional free mercury was found in the drain trap, piping and around the sink. This material was removed using a Mercury vacuum. During Hepaco's clean up operations, the room was vented using a negative air system.

During the night of 10 April and morning of 11 April, Hepaco heated the room for several hours to 80 – 85 degrees using the HVAC system supplemented by propane heaters. The room was vented continuously during the heating process. At approximately 0530, the heating and venting process was ceased and the room temperature was allowed to stabilize to ambient conditions. EPA and EI, Inc. instituted clearance sampling at 0840 hours. The purpose of the sampling was to monitor mercury vapor concentrations in the room once per hour for a period of eight hours. Four measurements were taken every hour between 0840 and 1540 hours. The measurements included one background sample from outside the room, one sample near the source of the spill (kitchen), one sample in the center of the room and one sample at the front of the room. After eight hours of sampling, the average concentrations of mercury vapors in the classroom at the three locations respectively were 419, 443, and 416 ng/m³. The complete set of air monitoring results is available in the site file. Based on these results, it was determined that the classroom could be reoccupied and used under normal operating conditions.

In addition to the clearance sampling, EPA and EI, Inc. monitored mercury levels in several items removed from the classroom. Several items were found to contain unacceptable levels of mercury (greater than 10,000 ng/m³) and were removed for disposal. These included the janitor's shoes, a futon cover and a vacuum cleaner used in the room after the spill occurred. Other items (chairs, furniture, etc.) showed lower levels of mercury contamination and these items were allowed to air out in the sun prior to placing them back into the classroom.

OSC Misenheimer demobilized from the site on the afternoon of 11 April, 2006.

Planned Removal Actions

None

Next Steps

Hepaco and EI, Inc. will arrange for disposal of contaminated items removed from the classroom.

Key Issues

None

[response.epa.gov/ncmontessorimercury](https://www.epa.gov/ncmontessorimercury)