

Illinois Department of
**Public
Health**

Jim Edgar, Governor • John R. Lumpkin, M.D., M.P.H., Director

525-535 West Jefferson Street • Springfield, Illinois 62761-0001

#910169701

October 31, 1997

James E. Sharp, Principal
Beverly Manor School
District 50 Schools
1014 School Street
Washington, IL 61571

Dear Mr. Sharp:

The Illinois Department of Public Health conducted an investigation of the Beverly Manor School on the afternoon of October 17, 1997. On Thursday, October 16, it was discovered that two students had brought a small vial of mercury to school the previous day. The students allegedly found the vial on the way to school. The mercury was passed among the students and at least sixty children admitted to having touched or held the mercury. The vial confiscated contained a small pea-sized amount of mercury.

The involved students were questioned about where and when they contacted the mercury and it was discovered that small spills had occurred. The school then sealed the classrooms suspected of contamination. One of the involved rooms was the library, where the principal spotted a pin-sized drop of what appeared to be mercury on the carpet. He picked it up with adhesive tape and disposed of it. No other visible mercury spills were found in the school. Notes were sent home to the parents of those students that admitted to having touched the mercury. The note stated that IDPH was informed of the situation and that no serious problems were expected from the exposures.

Mercury is a liquid at room temperature, but it readily evaporates and forms vapors in the air. The apparent source of mercury was removed, but the main concern was whether or not the air was contaminated with mercury vapors. The on-site investigation was conducted using a Jerome Mercury Vapor Analyzer. The instrument's sensor had been regenerated prior to arriving at the school to ensure maximum accuracy. Before taking measurements, the machine was zeroed on-site per manufacturer's instructions. The sealed bag containing the confiscated vial was examined, and it was confirmed that the substance was mercury. Mercury vapor levels were taken throughout the school in all classrooms and faculty offices. In each room a minimum of two readings were taken, one near the floor and one in the breathing zone.

Mercury is readily absorbed by the body when inhaled as vapor, which is the main concern when mercury is spilled. When evaluating exposure to mercury vapor, there is not a set level that is considered "safe" for a school. The Occupational Safety and Health Administration (OSHA) has set a standard of 0.050 mg/m³ (milligrams per cubic meter). This means that a worker cannot be exposed to mercury vapor at a level exceeding this standard over an eight-hour workday. IDPH does not feel that this standard is appropriate for a school because OSHA standards are based on adult workers and are not protective of children and other sensitive populations.

IDPH uses a level of 0.01 mg/m³ when investigating homes and schools. This level is much more conservative than OSHA and was chosen because health effects have not been observed in children exposed to mercury below this level. In most cases with concentrations less than 0.01 mg/m³, ventilation should reduce levels to non detectable concentrations within a few months. As for the students who touched the mercury, no health effects would be expected because mercury does not easily penetrate skin.

Of all the areas sampled in the school, none exceeded the 0.01 mg/m³ level. Several rooms, however, had levels at or approaching 0.01 mg/m³. These areas are listed below:

| Room/Area | Highest Level Found (mg/m ³) |
|------------------------------------|---|
| 12 | 0.011 |
| 21 | 0.012 |
| 23 | 0.010 |
| 39 | 0.010 |
| 46 | 0.011 |
| Boys Bath (4 th grade) | 0.014 |
| Girls Bath (4 th Grade) | 0.011 |
| 13 | 0.008 |
| 20 | 0.008 |
| 41 | 0.008 |
| 45 | 0.008 |
| Hallway (4 th Grade) | 0.008 |
| Hallway (5 th Grade) | 0.008 |
| Boys Locker Room | 0.008 |
| Cafeteria | 0.008 |

Most of the rooms sampled had low-level mercury vapor contamination, even in areas where no mercury contact was reported. This is due to mercury being

tracked on the shoes of students and faculty walking around the building. Though contamination was found throughout the school, it was not found at levels that would be expected to cause health effects. In addition, all windows in the school were opened after the investigation to help ventilate the building.

Based on the information gathered during this investigation, IDPH makes the following recommendations:

1. Ventilate the school thoroughly by opening windows and introducing fresh outside air to the building. This will help dilute residual mercury vapors.
2. Inform students that mercury is harmful and that it should not be touched or brought to school.
3. If additional mercury spills are discovered, clean them as directed in the IDPH Mercury Spill pamphlet.
4. A follow-up investigation should be performed to ensure that mercury vapor levels are decreasing as expected.

Given that all sources of mercury contamination have been removed from the school, the levels of mercury vapor will gradually decrease over time. As mentioned above, a follow-up investigation of the school is recommended. I will call and arrange for a convenient time to do a survey of the school, most likely in December. If you have any additional questions, feel free to contact me at (217)782-5830.

Sincerely,



Jennifer Slightom
Environmental Toxicologist
Division of Environmental Health

cc: Roger Stevens, District 50 Superintendent
Frank Alai, IDPH Peoria Regional Office
Jennifer Coffey, IDPH Peoria Regional Office