

U.S. ENVIRONMENTAL PROTECTION AGENCY  
POLLUTION/SITUATION REPORT  
Delhi Mercury Spill - Removal Polrep  
Initial Removal Polrep



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
Region V

**Subject:** POLREP #1  
Initial  
Delhi Mercury Spill  
  
Ann Arbor, MI  
Latitude: 42.2940870 Longitude: -83.8190560

**To:**  
**From:** Elizabeth Nightingale, OSC  
**Date:** 9/23/2014  
**Reporting Period:** 9/22/14-9/23/14

1. Introduction

1.1 Background

<b>Site Number:</b>	<b>Contract Number:</b>
<b>D.O. Number:</b>	<b>Action Memo Date:</b>
<b>Response Authority:</b> CERCLA	<b>Response Type:</b> Emergency
<b>Response Lead:</b> EPA	<b>Incident Category:</b> Removal Action
<b>NPL Status:</b> Non NPL	<b>Operable Unit:</b>
<b>Mobilization Date:</b> 9/22/2014	<b>Start Date:</b> 9/22/2014
<b>Demob Date:</b>	<b>Completion Date:</b>
<b>CERCLIS ID:</b>	<b>RCRIS ID:</b>
<b>ERNS No.:</b>	<b>State Notification:</b> MDCH
<b>FPN#:</b>	<b>Reimbursable Account #:</b>

1.1.1 Incident Category

Emergency Response

1.1.2 Site Description

Single family residence in a suburban neighborhood.

1.1.2.1 Location

Ann Arbor, Michigan.

1.1.2.2 Description of Threat

On 9/22/14, MDCH filed an NRC Report (# 1096105), indicating that a furnace repair technician had identified a mercury spill from a switch on the furnace while completing a service call. The County Health Department screened the site with a Lumex, and reported ambient mercury levels of up to 50,000 (nanograms per cubic meter) ng/m<sup>3</sup> near the furnace and 34,000 ng/m<sup>3</sup> in the basement. After opening windows and ventilating the house, levels were generally reduced to less than 1,000 ng/m<sup>3</sup>. MDCH and the County Health Department requested EPA assistance to address the situation.

Mercury is a characteristically hazardous waste under the Resource Conservation and Recovery Act (RCRA), 42 U.S.C. 6901 et seq., as amended, and 40 CFR 261.24. Mercury exhibits the characteristic of toxicity (D009), and is therefore a hazardous substance under Section 101 (14) of CERCLA, 42 U.S.C. 9601(14).

The health effects of mercury are detailed by the ATSDR as follows:

The nervous system is very sensitive to all forms of mercury. Exposure to high levels of metallic, inorganic, or organic mercury can permanently damage the brain, kidneys, and developing fetus. Effects on brain functioning may result in irritability, shyness, tremors, changes in vision or hearing, and memory problems. Short-term exposure to high levels of metallic mercury vapors may cause effects including lung damage, nausea, vomiting, diarrhea, increases in blood pressure or heart rate, skin rashes, and eye irritation.

1.1.3 Preliminary Removal Assessment/Removal Site Inspection Results

EPA mobilized to the site at approximately 5:00 PM on 9/22/14 and met with the County Health Department representative, and later with the homeowner. The homeowner requested that we return the next morning to conduct monitoring and cleanup work. The homeowner planned to stay in the home overnight, with the windows open to maintain ventilation. EPA and START arrived on site at 8:00 AM on 9/23/14. The team closed windows and screened all rooms in the house with the Lumex. Mercury vapor concentrations were below the acceptable concentrations for most sensitive people (less than 1,000 ng/m<sup>3</sup>) in the breathing zone in all areas of the house except right near the furnace. Mercury vapors were roughly 2,000 ng/m<sup>3</sup> there. Visible beads of mercury were present in the furnace. As these conditions presented an imminent and substantial endangerment to public health, welfare, or the environment, ERRS was mobilized and a removal action was initiated at the site.

**2. Current Activities**

**2.1 Operations Section**

**2.1.1 Narrative**

Planned response activities on-site include:

- a) Assessing the site;
- b) Securing, staging characterizing spilled mercury and mercury contaminated waste;
- c) Consolidating and packaging all materials containing hazardous substances, pollutants and contaminants for transportation and off-site disposal; and
- d) Transporting and disposing of all characterized or identified hazardous substances, pollutants, wastes, or contaminants that pose a substantial threat of release at a Resource Conservation and Recovery Act/CERCLA-approved disposal facility in accordance with EPA's Off-site Rule (40 C.F.R. § 300.440).

**2.1.2 Response Actions to Date**

ERRS mobilized to the site on 9/23. The laundry room area (that contains the furnace) was isolated from the rest of the house with poly sheeting and tape. Porous materials within the room were bagged for screening. A mercury vacuum was used to remove most visible mercury beads from the furnace. Some beads could not be accessed readily - work will continue on this effort tomorrow. The floor of the laundry room was inspected, and visible beads were removed from flooring, from behind molding and from under the hot water heater. Surfaces were cleaned with DI water. A ventilation system was set up in the laundry to vent the room overnight. EPA monitoring has not identified elevated mercury in other areas of the house to date - however investigation is ongoing.

**Mercury Monitoring Results**

During response activities conducted on 9/23, levels of mercury vapors inside the furnace within the laundry room exceeded 20,000 ng/m<sup>3</sup>, but did not exceed 1,000 ng/m<sup>3</sup> in any other areas of the house after the laundry room was sealed.

**Mercury Action Levels**

According to the Agency for Toxic Substances and Disease Registry (ATSDR) and the Michigan Department of Community Health, a residential structure is safe for occupancy by sensitive persons when mercury levels are below 1,000 nanograms/cubic meter (ng/m<sup>3</sup>), in the breathing zone. or this response, the site will be considered cleaned up at this site when the visible mercury has been removed, and mercury levels in the breathing zone are less than 1,000 ng/m<sup>3</sup>.

For screening objects, and debris, the Michigan Department of Community Health recommends that objects with mercury levels above 10,000 ng/m<sup>3</sup> be disposed of outright. Objects with mercury levels between 10,000 and 1,000 ng/m<sup>3</sup> may aired out to reduce levels, and objects with mercury levels below 1,000 ng/m<sup>3</sup> may be kept. At this site, debris that was suspected to be contaminated with mercury was bagged and mercury levels within the bags will be measured. If the mercury level of the bagged debris exceed 10,000 ng/m<sup>3</sup>, and levels do not reduce after airing out, the debris will be disposed of outright as mercury contaminated debris.

**2.1.3 Enforcement Activities, Identity of Potentially Responsible Parties (PRPs)**

Investigation into potentially responsible parties is ongoing.

**2.1.4 Progress Metrics**

<i>Waste Stream</i>	<i>Medium</i>	<i>Quantity</i>	<i>Manifest #</i>	<i>Treatment</i>	<i>Disposal</i>

**2.2 Planning Section**

**2.2.1 Anticipated Activities**

Continue response action.

**2.2.1.1 Planned Response Activities**

The team will reconvene on site on 9/24 (tomorrow) to continue work to remove inaccessible beads of mercury from the furnace. Assuming these beads can be removed, at least one cycle of heating and venting of the laundry room to reevaluate ambient mercury levels and determine whether additional clean up work is needed in that area. Sealed bags containing materials removed from the laundry room will be placed in the sun then mercury levels within them will be measured. The home's ventilation system will also be evaluated for contamination as well.

#### **2.2.1.2 Next Steps**

Prior to completing the cleanup, the entire house will be rescreened to ensure that ambient air levels are below applicable action levels. Verification samples will be collected once the cleanup has been determined to be complete to verify that screened results are accurate.

#### **2.2.2 Issues**

The homeowner is planning to stay in the home, with the windows open to maintain ventilation.

### **2.3 Logistics Section**

No information available at this time.

### **2.4 Finance Section**

No information available at this time.

### **2.5 Other Command Staff**

No information available at this time.

## **3. Participating Entities**

### **3.1 Unified Command**

#### **3.2 Cooperating Agencies**

Washtenaw County  
Michigan Department of Community Health

## **4. Personnel On Site**

Personnel on site on 9/22/14:

EPA: 1  
Washtenaw County: 1  
START: 0  
ERRS: 0

Personnel on site on 9/23/14:

EPA: 1  
Washtenaw County: 1  
START: 1  
ERRS: 3

## **5. Definition of Terms**

ATSDR	Agency for Toxic Substances and Disease Registry
BZ	Breathing Zone
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CERCLIS	Comprehensive Environmental Response, Compensation, and Liability Information System
DNR	Department of Natural Resources
EPA	Environmental Protection Agency
ERNS	Emergency Response Notification System
ERRS	Emergency and Rapid Response Service
MDCH	Michigan Department of Community Health
MDEQ	Michigan Department of Environmental Quality
NG/M <sup>3</sup>	nanograms per cubic meter
NCP	National Oil and Hazardous Substance Pollution Contingency Plan
NOAA	National Oceanic and Atmospheric Administration
NPL	National Priorities List
NRC	National Response Center
OSC	On Scene Coordinator
PPE	Personal Protective Equipment
PPM	Parts per million
RCRIS	Resource Conservation and Recovery Act Information System
RP	Responsible Party
RRT	Regional Response Team
START	Superfund Technical Assessment and Response Team
US FWS	United States Fish and Wildlife Service

**6. Additional sources of information**

**6.1 Internet location of additional information/report**

[epaosc.net/delhi](http://epaosc.net/delhi)

**6.2 Reporting Schedule**

A final report will be issued when the removal action has been completed.

**7. Situational Reference Materials**

No information available at this time.