

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



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region IV

Subject: POLREP #1
Initial
Pioneer Drive Mercury Spill
B445RV00
Hope Mills, NC
Latitude: 34.9856830 Longitude: -78.9189330

To:
From: Kenneth Rhame, OSC
Date: 10/31/2009
Reporting Period: 10/30/09 to 11/04/09

1. Introduction

1.1 Background

Site Number:	B445RV00	Contract Number:	
D.O. Number:		Action Memo Date:	
Response Authority:	CERCLA	Response Type:	Emergency
Response Lead:	EPA	Incident Category:	Removal Action
NPL Status:	Non NPL	Operable Unit:	
Mobilization Date:	10/30/2009	Start Date:	10/30/2009
Demob Date:		Completion Date:	
CERCLIS ID:		RCRIS ID:	
ERNS No.:		State Notification:	
FPN#:		Reimbursable Account #:	

1.1.1 Incident Category

CERCLA/Emergency Response/Fund Lead

1.1.2 Site Description

Residential Mercury Spill.

1.1.2.1 Location

Pioneer Drive, Hope Mills, NC

1.1.2.2 Description of Threat

Five pounds (roughly one pint) of mercury was spilled inside a residence. The mercury was in the home as a "family heirloom", passed down from generation to generation. The jar containing the mercury fell from a book shelf and broke on a carpeted bedroom floor. The property is a rental. The renter that spilled the mercury attempted to cleanup the mercury himself using a spoon, when realizing that this was not effective, the renter then attempted to cleanup the spilled mercury by using a vacuum that had a "beater bar". Renter notified the local fire department and the local fire department responded. When they were determined the full scope of the situation they then requested Fayetteville Haz-Mat. Fayetteville Haz-Mat conducted a entry into the home and determined that the spilled mercury warranted a cleanup by a qualified Environmental Cleanup Contractor. Mercury was observed on all surfaces throughout the bedroom.

1.1.3 Preliminary Removal Assessment/Removal Site Inspection Results

Mercury Vapor Screening in the home where the mercury was spilled on 10/30/09 was greater than 100 micrograms per cubic meter inside the home. EPA's cleanup goal for residential properties is 1 microgram per cubic meter. The instrument used to measure the air was a Lumex RA915 Light, which has an upper limit of 100,000 micrograms per cubic meter.

2. Current Activities

2.1 Operations Section

2.1.1 Narrative

EPA OSC Kenneth Rhame and START contractor Tetra Tech and ERRs contractor ER responded on Friday, October 30. The response was in regards to a mercury spill that occurred at 3690 Pioneer Drive, Hope Mills, Cumberland County, NC. The spill occurred on Tuesday October 27th. The home is currently being rented by three individuals. One is active military; one is active guard; and one is a veteran currently working as a trainer on Ft. Bragg. The owner is also military that no longer resides in the area, the home

owner resides in Las Vegas. One of the renters, veteran, had a 5 lbs. pint jar of mercury that is said to be a "family heirloom". This jar fell from a bookshelf in the room and broke on a carpeted floor. The renter attempted to clean up the mercury with a spoon with no success; he then attempted to cleanup the mercury using a vacuum cleaner that has a "beater bar". The renter realized at this point that he could not effectively clean up the mercury and called "911". The local Fire Dept responded, recognized the situation as being a hazardous material incident, and notified Fayetteville Haz-Mat. Fayetteville Haz-Mat responded and conducted a entry. Upon entry a silver "mercury dusting" was observed, Fayetteville Haz-mat advised the renter that the spill was beyond their capability and that the homeowner would need to contact a qualified cleanup contractor. The renter contacted a local environmental contractor to assess the home. The contractor entered the home with no personal protective equipment and sat on the couch to write the estimate. The estimate was said to be over \$20,000. This amount was more than the renter could afford. The renter then contacted NC Health and Human Services, who notified EPA on October 29th. EPA initiated an emergency response on October 30th. EPA met with County and State officials at the residence which the County Fire Marshall had condemned. EPA contacted the property owner, advised him of the situation, gave him verbal notice, and sent an access agreement to be signed via email. The homeowner contacted his insurance company (USAA) which denied him coverage of the incident. EPA mobilized contractors (ERRS and START). Upon arrival, air monitoring showed the entire home to be impacted. Lumex readings indicated mercury levels throughout the home at concentrations greater than 100,000 nanograms per cubic meter.

2.1.2 Response Actions to Date

Day 1- October 30: Initiate Emergency Response, Site Evaluation, Mobilization.

Day 2 - October 31: The house had mercury concentrations over 100,000 nanograms per cubic meter. Garage had mercury concentrations at 75,000 nanograms per cubic meter. House was opened up, front door, back door, garage door to allow ventilation. A level "B" entry was performed to open windows and to remove the source area of carpet was removed from the "spill room". After removing the carpet a mercury vac was used to collect free mercury from several areas in the "spill room". By removing the source and ventilating the home, mercury vapors dropped to allow level "C" entry. The remaining carpet on the first floor was removed. EPA was made aware that the renter stayed at a friend's house, EPA performed air monitoring at this home and found that the levels exceeded 1,000 nanograms per cubic meter (EPA's residential exposure threshold). A couch was found to be contaminated, as well as a computer chair and a bed. These items were removed and disposed of by EPA. The pet cat was also found to have mercury contamination at approximately 3,000 nanograms per cubic meter in a surface scan. The home owner agreed to bath the cat. The residents in this home were given temporary quarters at a local hotel for the night. Spiller was also provided temporary quarters at a local hotel. Non-Haz Waste Roll Off Box arrives.

Day 3 - November 1: Initial Morning Assessment indicated mercury vapor concentrations at 50,000 nanograms per cubic meter. Cleared the friend's home where "spiller" stayed the night. The highest reading in house was 800 nanograms per cubic meter. Response activities at the spill house included bagging all loose personal items to prepare for "bag screening" beginning with the "spill room". Haz-Waste Roll-Off Box arrives.

Day 4 - November 2: Morning Assessment indicated mercury levels at 12,000 nanograms per cubic meter. Removed carpet from 2nd floor. Completed bagging personal items for screening. Began screening bags and placing contaminated bags in appropriate roll-off. Personal Items from "Spill Room" will be disposed of as Haz-Waste. Items that were located in the "Spill Room" will be disposed of as Haz-Waste due to the high levels and visible beads. Items located in other areas of the home with no visible beads will be disposed of as non-haz. Heating and venting begins. All bags containing personal items were removed from the house.

Day 5 - November 3: Morning Assessment indicated mercury levels at 6,000 nanograms per cubic meter. Removed ceramic tile from front foyer and bathroom. Removed linoleum from kitchen and dining area. Removed dishwasher and garbage disposal. Removed ceiling fan in "spill room". Removed some drywall and wooden framing in "spill room" and located 3 beads of mercury by using the Lumex. Heated and vented throughout night.

Day 6 - November 4: Morning Assessment indicated mercury levels at 150 nanograms per cubic meter while venting, levels increased to 1,200 nanograms when home was closed up. Continued heating and venting.

Day 7 - November 5: ERRS torched the concrete floors in order to rapidly evolve surficial mercury contamination. A forced-air exhaust was used to remove volatilized mercury out of the building. START monitored the exhaust and let the burn crew know where to concentrate their efforts. Exhaust temperatures rose to over 125 degrees Fahrenheit. Mercury levels rose to nearly 40 ug/m3. The floors were torched twice during the day, and the building allowed to vent overnight. Additionally, all window blinds were removed from the building.

Day 8 - November 6: After venting all night, the house was closed and allowed to build up ambient mercury. Levels in the kitchen rose to 2.9 ug/m3 after 30 minutes. Containments were built to separate the kitchen from the living room from the bedroom end of the house. The linoleum backing remaining on the kitchen floor was identified as the culprit. Surface levels were over 3.0 ug/m3. Clearance testing was then initiated on all areas except the kitchen, where ERRS removed the remaining linoleum. The bedrooms passed the eight hour clearance test, with the highest average being 726 ug/m3 in the spill room. A new, fully-sealed containment was built to completely segregate the LR/KIT from the bedrooms. The living room failed, and it and the kitchen were torched again at the end of the day and allowed to vent overnight.

Day 9 - November 7: After venting overnight, a clearance test was initiated on the living room and kitchen areas. After 7 hours, the test was concluded with an average of 0.79 ug/m3. The eighth hour of the test was bypassed as the levels would need to rise to over 2,500 ug/m3 in order to fail the test. At that point, the HVAC was turned on and the levels monitored after 30 minutes. Levels remained constant, below the

1.0 ug/m3 level, indicating the HVAC system was not impacted. The NC Department of Health was on scene for the conclusion of the test, and initiated efforts to remove the condemnation notice on the building. ERRS then began the process of restoring the building to its previous condition.

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

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

No information available at this time.

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

Pearse Fire Dept.
Fayetteville Haz-Mat
Cumberland County Health Dept.
Cumberland County Fire Marshall
NC Health and Human Services
NC Dept Environment and Natural Resources
US EPA Region 4

4. Personnel On Site

No information available at this time.

5. Definition of Terms

No information available at this time.

6. Additional sources of information

No information available at this time.

7. Situational Reference Materials

Region 4 Mercury Response Field Operations Guide