U.S. ENVIRONMENTAL PROTECTION AGENCY
POLLUTION/SITUATION REPORT
United Community Hospital - Removal Polrep

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region V

Subject: **POLREP #3**
Progress
United Community Hospital
C5J3
Detroit, MI
Latitude: 42.3297850 Longitude: -83.0841190

To: Mark Johnson, ATSDR
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Dan Wyant, MDEQ
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From: Elizabeth Nightingale, OSC
Date: 8/1/2013
Reporting Period: 7/29/13-8/1/13

1. Introduction

1.1 Background

Site Number:	C5J3	**Contract Number:**	
D.O. Number:		**Action Memo Date:**	2/4/2013
Response Authority:	CERCLA	**Response Type:**	Time-Critical
Response Lead:	EPA	**Incident Category:**	Removal Action
NPL Status:	Non NPL	**Operable Unit:**	
Mobilization Date:	7/15/2013	**Start Date:**	7/15/2013
Demob Date:		**Completion Date:**	
CERCLIS ID:	MIN000510837	**RCRIS ID:**	
ERNS No.:		**State Notification:**	MDEQ, MDCH, MDNR
FPN#:		**Reimbursable Account #:**	

1.1.1 Incident Category

Time Critical Removal Action

1.1.2 Site Description

The United Community Hospital was originally opened in southwest Detroit as Southwest Detroit Hospital in 1974. The hospital was operated by various owners under various names until 2006, when it was liquidated by the State of Michigan. The building has remained closed and unoccupied since 2006. The City of Detroit requested EPA assistance with this site in June 2012.

EPA conducted a site assessment on June 21, 2012, and returned to the site on August 8, 2012 to collect additional information. During the site visits, EPA observed:
• Six mercury spills visible on the floor in former patient rooms in a wing on the third floor which appeared to be from broken blood pressure cuffs;
• Medical waste including syringes, sharps containers and vials of dried blood on the first and third floors of

the building; and
• Bottles of liquid medications including Heparin, Ketorolac, and Levaquin on the 3rd floor near the nurse's station.

Ambient levels of mercury at the site of up to 50,000 nanograms/cubic meter were later measured at the site.

The site was in disrepair, with evidence of trespassing including broken windows, paintballs and graffiti; and evidence of scrapping activity including removal of power cords from machines and of lead from walls of x-ray rooms. The building is locked however, trespassers continue to gain access to the building. The site grounds are unfenced, allowing access by the public.

The site consists of an approximately 7-acre property in an urban mixed commercial residential area, and contains a 5 story building. The parcel is generally bordered by commercial facilities to the east, and commercial and residential facilities to the north, south and west. A railroad track borders the property immediately to the south, and a major interstate highway borders the property immediately to the west and north.

1.1.2.1 Location

The site is located at 2401 20th Street, Detroit, Wayne County, Michigan, 48216. The location coordinates for the site are latitude 42.329895° and longitude -83.083995°. The site is situated west of 20th Street, south of Michigan Avenue, east of I-75, and north of West Vernor Highway.

1.1.2.2 Description of Threat

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.

Medical waste is not a listed or characteristically hazardous substance, however is considered to be a pollutant or contaminant under Section 101 (33) of CERCLA, 42 U.S.C. 9601(14). Pollutant or contaminant is defined as "any substance…including disease-causing agents, which after release into the environment and upon exposure, ingestion, inhalation, or assimilation into any organism…will or may reasonably be anticipated to cause death, disease, behavioral abnormalities, cancer, genetic mutation, physiological malfunctions…" The biological waste at the site was not organized, secured, or maintained in a manner necessary to prevent exposure and/or release. Medical waste transport and disposal is heavily regulated by a number of governmental agencies due to its potentially infectious nature.

The health effects of exposure to medical waste and sharps are described by the Center for Disease Control and other public health agencies as:

> The concern created by medical waste is that it can cause infection and/or disease. In order for this to happen, several things must occur. First, infectious agents (for example, viruses) must be present in the waste. It is important to keep in mind that certain types of materials are classified as medical waste because they might cause disease. Blood, for example, is considered infectious because it might contain viruses, bacteria, parasites, and prions. Used needles and other sharps are dangerous to people and animals if not disposed of safely because they can injure people and spread infections that cause serious health conditions. The most common infections (spread in this manner) are: Hepatitis B (HBV), Hepatitis C (HCV), and Human Immunodeficiency Virus (HIV).

At this site, the medical waste present is older, presumably generated before hospital closure in 2006, however, the remaining infectiousness of this waste is unknown. Available research indicates that viruses may not survive long outside the human body in medical waste, however less is known about the long term infectivity of other blood borne disease causing organisms in blood samples and medical waste. For example, there are many gram positive bacterial species which can undergo spore formation and can remain infectious for a number of years. According to ATSDR and EPA toxicologists, the conservative approach is to assume that the waste is infectious. As a note, in the 1980's, the CDC introduced "Universal Precautions". This practice is taught to all medical, laboratory, and emergency response personnel. Universal precautions means to treat all body fluids as infectious, especially those containing blood.

Given the site conditions, the nature of the known and suspected hazardous substances, pollutants and contaminants on site, and the potential exposure pathways, actual or threatened releases of hazardous substances from this site, if not addressed by implementing the response actions selected in the Action

Memorandum, may present an imminent and substantial endangerment to public health, welfare, or the environment. Therefore, a time critical removal action was initiated at this site on July 15, 2013. This removal action will directly address actual or potential releases of hazardous substances at the site, which may pose an imminent and substantial endangerment to public health, or welfare, or the environment.

1.1.3 Preliminary Removal Assessment/Removal Site Inspection Results

Described above.

2. Current Activities

2.1 Operations Section

2.1.1 Narrative

Planned removal activities on-site included:

a) Developing and implementing a site-specific Health and Safety Plan that includes an Air Monitoring Plan and a Site Emergency Contingency Plan;

b) Developing and implementing a Site Work Plan and Site Security Plan;

c) Securing, staging, sampling and characterizing spilled mercury, mercury contaminated waste and piles of biological wastes;

d) Consolidating and packaging all materials containing hazardous substances, pollutants and contaminants for transportation and off-site disposal; and

e) 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

Specific actions taken the weeks of July 15, 2013 and July 22, 2013 are summarized in POLREPs 1 and 2 respectively.

General Overview of Response Actions to Date

Six mercury spills in six separate hospital rooms on the third floor were identified in the site assessment. All the mercury spills were located within one wing of the third floor. Upon arrival, the rooms in this wing were numbered 1-12. Since the assessment, a large amount of additional debris was lying on the floors in the hallway and in these rooms, making it difficult to see the spilled mercury. At the start of the removal, rooms in the wing were assessed visually and with the Lumex, and liquid mercury was detected in 5 rooms, room numbers 3, 4, 7, 8, and 12. Work focused on cleaning up these rooms and associated hallway first. After cleanup of these rooms, the other rooms within the wing were assessed visually and with the Lumex mercury detector for visible mercury and mercury vapors. Mercury vapors in the breathing zone were elevated above the 3,000 ng/m^3 action level (see below) in an additional 5 rooms (rooms 5,6, 9, 10, and 11). Standing mercury was visible in a number of these rooms as well. Also, over the course of the mercury removal, during inspections of the third floor, an additional 8 blood pressure cuffs were recovered and drained of mercury.

As of Thursday, July 25, all 10 rooms and associated halls within the affected wing of the third floor have been cleared of visible mercury, mercury containing equipment and mercury vapor– mercury levels within the breathing zone were below 3,000 ng/m^3 in all areas. This waste was shipped offsite for disposal on July 29, 2013.

Biological waste was identified on the first and on the third floors during the site assessment. As with the mercury spills, since the assessment, a large amount of additional debris was lying on the floors in the areas previously identified to contain this waste, making it difficult to see and collect the waste. At the start of the removal, biowaste was visible in several rooms in the southern wing of the first floor, in several rooms in the former lab area on the first floor, and at a nurses' station on the third floor.

As of Friday, July 29, all known deposits of biological waste throughout the hospital had been collected, consolidated and shipped for disposal.

Last week, the crew also became aware of an approximately 1,000 square foot former maintenance room on the second floor of the building with about 1 inch of liquid on the floor. The liquid appears to be a mix of waste oil from 2 transformers mixed with waste spilled from various small containers (appear to be paints, paint thinners, potentially additional mercury from mercury containing equipment and rainwater). We tested a sample for polychlorinated biphenyls (PCBs) with a test kit, and did not detect PCBs in the sample. Because of the potential hazards and threats associated with leaving this material in place, the crew removed the standing liquid, characterized it and will arrange for its proper disposal of it as a part of this action. The crew inventoried the remaining small containers in the room, and did not find any that appeared to still contain any hazardous substances.

As of Tuesday, July 30, the waste oil mixture has been collected from the floor of the maintenance room, consolidated and staged for disposal.

Mercury Action Levels

According to the Agency for Toxic Substances and Disease Registry (ATSDR) and the Michigan Department

of Community Health, a non-residential, non-school, non-mercury related business structure has been cleaned up sufficiently for reoccupancy when mercury levels are below 3,000 nanograms/cubic meter (ng/m^3), in the breathing zone. Hospital rooms will be considered cleaned up at this site when the visible mercury has been removed, any inaccessible mercury has been encapsulated, and mercury levels in the breathing zone are less than 3,000 ng/m^3.

For screening objects, and debris, the Michigan Department of Community Health recommends that objects with mercury levels above 10,000 ng/m^3 be disposed of outright. Objects with mercury levels between 10,000 and 1,000 ng/m^3 may aired out to reduce levels, and objects with mercury levels below 1,000 ng/m^3 may be kept. At this site, debris that is suspected to be contaminated with mercury is being bagged and mercury levels within the bags are being measured. If the mercury level of the bagged debris exceeds 10,000 ng/m^3, the debris will be disposed of outright as mercury contaminated debris.

Daily Activities Summary

On July 29th the crew:
- Began vacuuming the waste oil mixture from the floor of the maintenance room
- Shipped mercury, mercury contaminated debris, sulfuric acid and biowaste off site for proper disposal

On July 30th the crew:
- Completed vacuuming the waste oil mixture from the floor of the maintenance room, and dried floor with floor dry
- Consolidated staged waste oil for disposal
- Inventoried small containers in the maintenance room

On July 31th the crew:
- Demobed themselves as well as supplies and equipment from the site

Monitoring Results

July 29, 2013:

Prior to work activities beginning in the Maintenance Room, START monitored the ambient air in the ground floor hallway leading to the north stairwell of the hospital, the north stairwell (which leads to the Maintenance Room), and the Maintenance Room, itself, with a MultiRAE five-gas meter. The ambient air readings, in each of these areas, were 0 ppm for carbon monoxide, 0.0 to 0.2 for volatile organic compounds, 0 ppm for hydrogen sulfide, 0% for lower explosive limit, and 20.9% for oxygen.

July 30, 2013:

START continued monitoring the ambient air in the ground floor hallway leading to the north stairwell of the hospital, the north stairwell (which leads to the Maintenance Room), and the Maintenance Room, itself, with a MultiRAE five-gas meter. The ambient air readings, in each of these areas, were 0 ppm for carbon monoxide, 0.0 to 0.2 for volatile organic compounds, 0 ppm for hydrogen sulfide, 0% for lower explosive limit, and 20.9% for oxygen.

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

A General Notice Letter was issued to the company that owns the hospital property on December 12, 2013. Extensive efforts were made to negotiate and implement a voluntary cleanup of the site during January and February 2013. Those efforts were unsuccessful. A Unilateral Administrative Order was issued on April 19, 2013. No response was received. Efforts are ongoing to further develop information and continue to pursue enforcement activities.

2.1.4 Progress Metrics

Waste Stream	*Medium*	*Quantity*	*Manifest #/Shipping Doc #*	*Treatment*	*Disposal*
Non Hazardous Mercury Contaminated Debris	Solid	27 fifty five gal drums	011329666		x
Waste Metallic Mercury	Liquid	1 five gal pail	011329666		x
Waste Corrosive (Sulfuric Acid)	Liquid	1 one gal jar	011329666		x
Regulated Medical Waste	Solid	48.6 cubic ft	MDTD00EWPN		x
Waste Oil	Liquid	7 fifty five gal drums			

2.2 Planning Section

2.2.1 Anticipated Activities

All major cleanup work at the site has been completed, and most waste has been shipped for disposal. Remaining waste should be shipped off site for disposal next week.

2.2.1.1 Planned Response Activities

Next week, the crew will arrange for proper disposal of the staged waste from the cleanup of maintenance room. All other planned activities have been completed.

2.2.1.2 Next Steps
We anticipate completing the removal action next week.

2.2.2 Issues
None.

2.3 Logistics Section
ERRS is managing site logistics.

2.4 Finance Section
2.4.1 Narrative

ERRS costs are estimated through July 29, 2013. START costs are estimated through July 26, 2013.

Estimated Costs *

	Budgeted	Total To Date	Remaining	% Remaining
Extramural Costs				
ERRS - Cleanup Contractor	$200,000.00	$92,018.59	$107,981.41	53.99%
TAT/START	$25,000.00	$10,423.00	$14,577.00	58.31%
Intramural Costs				
Total Site Costs	$225,000.00	$102,441.59	$122,558.41	54.47%

* The above accounting of expenditures is an estimate based on figures known to the OSC at the time this report was written. The OSC does not necessarily receive specific figures on final payments made to any contractor(s). Other financial data which the OSC must rely upon may not be entirely up-to-date. The cost accounting provided in this report does not necessarily represent an exact monetary figure which the government may include in any claim for cost recovery.

2.5 Other Command Staff
2.5.1 Safety Officer
The OSC is serving in this role for the site.

2.5.2 Liaison Officer
The OSC is serving in this role for the site.

2.5.3 Information Officer
The OSC is serving in this role for the site.

3. Participating Entities
3.1 Unified Command
N/A

3.2 Cooperating Agencies
City of Detroit
Michigan Department of Environmental Quality

4. Personnel On Site
Personnel on site on 7/29/13:

EPA: 1
START: 1
ERRS: 7
Community Health Care Providers: 1
GPA Protection LLC: 1

Personnel on site on 7/30/13:

EPA: 1
START: 1
ERRS: 7
Community Health Care Providers: 2
GPA Protection LLC: 1

Personnel on site on 7/31/13:

EPA: 0
START: 0

ERRS: 2
Community Health Care Providers: 0
GPA Protection LLC: 0

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
MDEQ	Michigan Department of Environmental Quality
NG/M^3	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
USCG	United States Coast Guard

6. Additional sources of information

6.1 Internet location of additional information/report
www.epaosc.org/unitedcomm

6.2 Reporting Schedule
POLREPs will be issued weekly.

7. Situational Reference Materials
n/a