U.S. ENVIRONMENTAL PROTECTION AGENCY
POLLUTION/SITUATION REPORT
Michigan Smelter - Removal Polrep

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region V

Subject: **POLREP #3**
Progress
Michigan Smelter
B5XF
Houghton, MI
Latitude: 47.1223147 Longitude: -88.6065189

To:
From: Elizabeth Nightingale, OSC
Date: 9/27/2013
Reporting Period: 9/23/13-9/27/13

1. Introduction

1.1 Background

Site Number:	B5XF	**Contract Number:**	
D.O. Number:		**Action Memo Date:**	8/5/2013
Response Authority:	CERCLA	**Response Type:**	Time-Critical
Response Lead:	EPA	**Incident Category:**	Removal Action
NPL Status:	Non NPL	**Operable Unit:**	
Mobilization Date:	9/9/2013	**Start Date:**	9/10/2013
Demob Date:		**Completion Date:**	
CERCLIS ID:	MIN000510458	**RCRIS ID:**	
ERNS No.:		**State Notification:**	Yes
FPN#:		**Reimbursable Account #:**	

1.1.1 Incident Category
Time Critical Removal Action

1.1.2 Site Description
Please see initial POLREP.

1.1.2.1 Location
Please see initial POLREP.

1.1.2.2 Description of Threat
Please see initial POLREP.

1.1.3 Preliminary Removal Assessment/Removal Site Inspection Results
Please see initial POLREP.

2. Current Activities

2.1 Operations Section

Narrative:

Week's Activities Overview

Over the week beginning the September 23rd, 2013 work focused primarily on the following activities:

- Continued clearing of the land surrounding mercury knob and 1.5 acre where cover will be installed.
- Completion of excavation, backfilling and grading of the mercury knob waste pile.
- Completion of backfilling and grading of the battery pile area and the two rear asbestos pile areas.
- Continuing to improve access paths to hillside waste piles
- Initiated removal of hillside waste piles
- Finalized design for smelter ruins contamination advisory signage

Soil Monitoring:
Throughout the site, after excavation of predesignated waste piles, remaining soil will be screened with the XRF to determine the amount of lead, copper, and arsenic remaining in the soil, if any. If levels of metals in remaining soil exceeds the residential direct contact criteria (RDCC), soil will be demarkated before

backfilling.

This week, the XRF was used to screen the mercury knob waste pile area during excavation to delineate the area that needed to be excavated and help determine the depth of contamination. After excavation, screening showed that copper, arsenic and lead in remaining soil in the mercury knob pile area (in the hole) were below the residential direct contact criteria.

The XRF was used to screen the easternmost hillside waste pile on terrace 3 during excavation to delineate the area that needed to be excavated and help determine the depth of contamination. After excavation, screening showed that copper, arsenic and lead in remaining soil in the easternmost hillside waste pile (in the hole) were below the residential direct contact criteria.

The XRF was also used to better delineate the boundaries of the hillside waste piles on site, to determine which areas exceed site specific criteria, and establish excavation boundaries.

Air Monitoring and Sampling:
Every day that excavation and loading of contaminated soils is ongoing air monitoring will be conducted to ensure public and worker safety. This work (and therefore air monitoring and sampling) began on 9/16/13.

Chemical hazards due to fugitive emissions from removal activities are anticipated to be low since the crew will employ administrative and engineering controls (i.e.; barricades, warning signs, and suppression measures) to minimize fugitive emissions and particulates (dust) that migrate off-site.

Meteorological data will be obtained daily from the NWS website that provides current weather conditions at the Houghton County Airport (Airport Code: KCMX) and documented in the site logbook.

Perimeter Air Monitoring:
Datarams (DR4) are deployed along three of the perimeter boundaries where off-site receptors are most at risk to exposure from fugitive emissions. The smelter facilities were built into the northwest facing hillside, therefore monitors have been placed along the north, east, and west site boundaries. Real-time particulate data will be transmitted back to the site command post where it will be monitored continuously.
A website has been established to view the current and past perimeter air monitoring data for the site. To view the data go to the web address: viper.ert.org. You have to create a login on your first visit to the site. Once you have logged in, go to the R05 Michigan Smelter Deployment to view site data.

The perimeter action level for particulate has been set at 500 micrograms per cubic meter (µg/m3). Should a DR4 unit detect sustained particulate concentrations greater than 500 µg/m3, the source of emmisions will be investigated, and administrative and/or engineering controls will be initiated to reduce the particulate emissions.

During the week of September 23, 2013, two unsustained exceedances of the action level were recorded. One exceedance of 500 ug/m3 was detected on September 23, 2013. However, upon investigation, it was found that the exceedance was unrelated to site activities. A nearby landowner was mowing, generating a dust cloud that blew onto the site. The exclusion zone action level was not exceeded at that time. Another exceedance of 500 ug/m3 was also detected on September 27, 2013. This exceedance appears to have been generated by wind during backfilling the easternmost hillside waste pile excavation area. The exceedance quickly subsided and engineering controls were applied to mitigate the particulate concentrations.

Exclusion Zone Air Monitoring and Sampling:

Monitoring:
Personal DR (PDR) particulate air monitors are deployed daily in the exclusion zone during active excavation and capping activities. The particulate monitors data-log instantaneous and time weighted average (TWA) particulate concentrations during operations.

The concentrations of contaminants identified in the removal assessment analytical results were used to establish a site-specific action level of 95 µg/m3 for total particulates for the exclusion zone. The crew will implement appropriate engineering control measures if an exceedance of the established action level is sustained for more than 60 seconds. Action level exceedances will be managed by setting the monitor to alarm at the established action level to notify on-site personnel.

During the week of September 23, 2013, one exceedance of 95 ug/m3 was detected in the exclusion zone on September 25, 2013. Levels reached 112 $\mu g/m^3$ over a two minute period but were not sustained. Another exceedance of 95 ug/m3 was also detected on September 27, 2013. This exceedance appears to have been generated by wind during backfilling of the easternmost hillside waste pile excavation area with clean fill. The exceedance quickly subsided. Engineering controls were applied to mitigate the particulate concentrations.

Sampling:
Integrated air sampling for personnel exposure characterization was performed by ERRS for inorganic contaminants and asbestos in the breathing zone. ERRS collected samples from personnel with the greatest potential for exposure within the exclusion zone for each job classification over for a full shift (minimum of seven hours) over the first three days of intrusive activities. If the exposure assessment reveals employee exposures to be below the action level, further exposure determination will be discontinued. If there is a change of equipment, process, control, or a new task has been initiated that may potentially result in an employee being exposed at or above the action level, additional air monitoring shall be conducted. Should the sample results indicate exposures over the OSHA permissible exposure limits and site-specific action levels, engineering controls will be adjusted and an additional three days of air sampling will be conducted.

These samples were collected on the day of intrusive work in the mercury knob area during the week of September 23, 2013.

Results that have been received back to date show no detections of lead or arsenic.

Asbestos Assessment Results

Lab results from the comprehensive site asbestos survey were received this week. A total of 21 bulk samples of suspected asbestos containing materials (ACM) were collected from the foundations and former operating areas of the smelter during the asbestos survey.

Seven suspect ACMs were identified and sampled including:
1. Asphalt roofing material;
2. Shingle roofing material;
3. Two different types of brick mortar;
4. Rectangle fire brick;
5. Rounded fire brick; and,
6. An unidentifiable fibrous material, suspected to be degraded thermal system insulation (TSI).

The following suspect ACMs tested positive for asbestos (greater than 1 percent asbestos).

- Suspect TSI (samples MISM-ASB-FM-01-091813, MISM-ASB-FM-02-091813, and MISM-ASB-FM-03-091813); and,
- Asphaltic roofing material (sample MISM-ASB-LR-01-091813).

Each of the suspect ACMs were sampled at three different locations across the site.

Based on sampling results roofing material, was classified as Category I non-friable ACM. The suspected TSI will be removed as ACM classified as a regulated asbestos containing material (RACM).

Specific activities completed each day are described in further detail below.

Activities on 9/23/13
- Completed installation of topsoil and establishment of final grade with backfill over battery pile area, two rear asbestos pile areas and haul road cover area for final restoration
- Initiated excavation of the waste pile known locally as mercury knob waste pile in level C PPE, and staged waste for disposal. Sampling and screening results of the waste pile do not indicate that elemental mercury is a contaminant of concern; however, concentrations of exceed site specific and residential direct contact criteria for arsenic.

- Particulate air monitors deployed in the vicinity of the work measured particulate concentrations ranging from 0.12 µg/m^3 to 46.91 µg/m^3. Exceedances of site action levels were not recorded.
- Perimeter air monitoring was initiated along the north and east site boundaries. Exceedances of site action levels along the site perimeter were not recorded.

Activities on 9/24/13
- Continued excavation of the mercury knob waste pile in level C PPE, and staged waste for disposal. The excavation averaged approximately one foot in depth and covered an area of approximately 5,000 square feet. Excavated soil is stockpiled in an area of the Site scheduled for cap placement.
- Used XRF to delineate hillside hot spots that exceed site specific metals criteria. Rough excavation limits were initially established based on historical screening and sampling data and maps.
- Implemented dust control measures

- Particulate air monitors deployed in the vicinity of the work measured particulate concentrations ranging from 0.02 µg/m^3 to 84.33 µg/m^3. Exceedances of Site action levels were not recorded.
- Particulate air monitors along the Site perimeter did not record any exceedances of Site action levels. Excavation work was conducted in Level C personal protective equipment.

Activities on 9/25/13
- Completed excavation of the mercury knob waste pile in level C PPE, and staged waste for disposal.
- Begun backfilling mercury knob excavation area. The floor and limits of the excavation were screened with an XRF to verify cleanup prior to the placement of backfill.
- Implemented dust control measures
- Finalized design of contamination advisory signage for smelter ruins. As the removal project cannot remove all metal contamination from within the actual smelter ruins, perimeter of ruins will be posted with signage to advise of the presence of some contaminated soil that exceeds residential direct contact criteria.

-Particulate air monitors deployed in the vicinity of the work measured particulate concentrations ranging from 0.03 µg/m^3 to 112.08 µg/m^3. Maximum readings in the exclusion exceeded the action level of 95 µg/m^3. Exceedances were not sustained and were recorded over an interval of 2 minutes.
- Particulate air monitors along the site perimeter did not record any exceedances of Site action levels.

Activities on 9/26/13
- Completed backfilling mercury knob excavation area with clean sand. Topsoil was placed over backfill sand and graded.
- Implemented dust control measures

- Particulate air monitors deployed in the vicinity of the work measured particulate concentrations ranging from 0.16 µg/m^3 to 24.49 µg/m^3.
- Particulate air monitors along the site perimeter did not record any exceedances of site action levels.

Activities on 9/27/13
- Initiated and completed excavation of eastern most hillside waste pile, located on Terrace 3, uphill from the Command Post. The waste deposit was excavated by hand and waste material was transferred to an area of the site scheduled for cap placement to await disposal. Excavation work was conducted in Level C personal protective equipment. The floor and limits of the excavation were screened with an XRF to verify cleanup prior to the placement of backfill.

- Initiated backfilling easternmost hillside waste pile. Clean sand backfill was placed in the hillside excavation to match the existing grade.
- Implemented dust control measures

- During the placement of backfill in the excavated areas, exclusion zone and a perimeter air monitor exceeded action levels for dust.

- Particulate air monitors deployed in the vicinity of the work measured particulate concentrations ranging from 0.02 µg/m^3 to 5,750.93 µg/m^3. Exceedances were not sustained and were recorded over an interval of 10 minutes. Similarly, the downhill perimeter dust monitor exceeded perimeter action levels. Visible dust was not observed and engineering controls were applied to mitigate the particulate concentrations.

2.1.3 Enforcement Activities, Identity of Potentially Responsible Parties (PRPs)
A general notice letter was issued to the Copper Range Company on November 5, 2012. A response was received from indicating that they were unsure about their liability and do not have the financial resources to conduct the removal action at the site. Investigation is ongoing.

2.1.4 Progress Metrics

Waste Stream	*Medium*	*Quantity*	*Manifest #*	*Treatment*	*Disposal*

2.2 Planning Section

2.2.1 Anticipated Activities

The following activities have been planned for this removal action:

1. Developing and implementing a site-specific Health and Safety Plan, including an Air Monitoring Plan, and a site Emergency Contingency Plan;
2. Developing and implementing a site Work Plan that includes a Site Security Plan;
3. Removing the mercury knob waste pile, 2 hillside waste piles, and the battery debris pile;
4. Posting boundaries of terraces that contain contamination, and which cannot safely and practically be accessed for cleanup, with signage regarding the presence of contamination;
5. Delineating subsurface contamination and installing an approximately 6-inch thick cover over metal-contaminated soil within an approximately 1.5-acre area;
6. Removing piles of asbestos-containing materials for off-site disposal;
7. Consolidating and packaging all materials containing hazardous substances, pollutants and contaminants for transportation and off-site disposal;
8. Backfilling and restoring excavated and disturbed areas;
9. 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); and
10. Addressing releases from other contaminated media in accordance with applicable, appropriate, and relevant requirements to the extent practicable.

The response action proposed will mitigate the threats at the site by properly identifying, consolidating, and packaging hazardous materials, pollutants, and contaminants on-site. The consolidated materials will be removed and ultimately disposed of off-site. Additional site activities may include security, perimeter air monitoring, and decontamination on the site, as needed to complete the removal action. This response action will be conducted in accordance with Section 104(a)(1) of CERCLA, 42 U.S.C. § 9604(a)(1) and Section 300.415 of the NCP, 40 C.F.R. § 300.415, to abate or eliminate the immediate threat posed to public health and/or the environment by the presence of the hazardous substances. Direct contact threats with hazardous substances are expected to be minimized at the site once the removal action is completed.

2.2.1.1 Planned Response Activities

2.2.1.2 Next Steps

Next week, primary tasks planned are excavation and backfilling of hillside waste piles.

2.2.2 Issues

None.

2.3 Logistics Section

ERRS is managing site logistics.

2.4 Finance Section

No information available at this time.

2.5 Other Command Staff

2.5.1 Safety Officer
OSC is serving in this roll.

2.5.2 Liaison Officer
OSC is serving in this roll.

2.5.3 Information Officer
OSC is serving in this roll.

3. Participating Entities

3.1 Unified Command
n/a

3.2 Cooperating Agencies
MDEQ

4. Personnel On Site

9/23/13:
EPA: 1
START: 1
ERRS: 6
MDEQ: 0

9/24/13:
EPA: 1
START: 1
ERRS: 6
MDEQ: 1

9/25/13:
EPA: 1
START: 1
ERRS: 6
MDEQ: 0

9/26/13:
EPA: 1
START: 1
ERRS: 6
MDEQ: 0
EDI: 0

9/27/13:
EPA: 1
START: 1
ERRS: 5
MDEQ: 0
EDI: 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

epaosc.org/michigansmelter

viper.ert.org -- R05 Michigan Smelter Deployment

6.2 Reporting Schedule

POLREPs will be issued weekly during the removal action.

7. Situational Reference Materials

n/a