U.S. ENVIRONMENTAL PROTECTION AGENCY
POLLUTION/SITUATION REPORT
Ohio River MCHM Spill - Removal Polrep
Final Removal Polrep

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region IV

Subject: **POLREP #4**
Polrep Number 4 and Final
Ohio River MCHM Spill
B438
Louisville, KY
Latitude: 38.2827594 Longitude: -85.7025508

To: Robby Francis, KYDEP
Jim Webster, USEPA R4 ERRB

From: Art Smith, OSC
Date: 1/24/2014
Reporting Period: 1/18/2014 through 1/24/2014

1. Introduction

1.1 Background

Site Number:	B438	**Contract Number:**	
D.O. Number:		**Action Memo Date:**	
Response Authority:	CERCLA	**Response Type:**	Emergency
Response Lead:	PRP	**Incident Category:**	Removal Action
NPL Status:	Non NPL	**Operable Unit:**	
Mobilization Date:	1/15/2014	**Start Date:**	1/15/2014
Demob Date:	1/18/2014	**Completion Date:**	1/24/2014
CERCLIS ID:		**RCRIS ID:**	
ERNS No.:		**State Notification:**	
FPN#:		**Reimbursable Account #:**	

1.1.1 Incident Category
Emergency Response

1.1.2 Site Description
On Sunday, 1/12/14, Freedom Industries, located at 1015 Barlow Drive, Charleston, Kanawha County, WV 25311, reported a release of the chemical 4-methylcyclohexanemethanol (MCHM). Freedom Industries is located along the Elk River, approximately 3 miles upstream from the Kanawha River. The contaminants flowed down the Elk River and entered the Kanawha River, where it traveled 58 miles and entered the Ohio River.

1.1.2.1 Location
On Monday, 1/13/14, the MCHM plume was confirmed at the Huntington Water Intake (River Mile 304). MCHM was observed at a peak concentration of 36 parts per billion (ppb) (preliminary - unvalidated data) at approximately 0430 hours.

On Wednesday, 1/15/14, the MCHM plume was confirmed at the Meldahl Lock & Dam (River Mile 436.2). MCHM was observed at a peak concentration of 19 ppb (preliminary - unvalidated data) at approximately 0300 hours.

On Wednesday, 1/15/14, the MCHM plume was confirmed at the Beckjord Generating Station (River Mile 453). MCHM was observed at a peak concentration of 18 ppb (preliminary - unvalidated data) at approximately 0900 hours.

On Wednesday, 1/15/14, the MCHM plume was confirmed at the Cincinnati Water Intake (River Mile 462.8). MCHM was observed at a peak concentration of 22 ppb (preliminary - unvalidated data) at approximately 1300 hours.

On Thursday, 1/16/14 at 1100 hours, the MCHM plume was confirmed in Carrollton, KY (River Mile 545).

On Friday, 1/17/14 at 0530 hours, the MCHM plume was confirmed at the Louisville Water Company Treatment Plant (River Mile 600). MCHM was observed at a peak concentration of 3.2 ppb (preliminary - unvalidated data) at approximately 1300 hours.

On Monday, 1/20/2014, the Ohio River Valley Water and Sanitation Commission (ORSANCO) forwarded information published by the Evansville, IN Water and Sewer Utility (EWSU). On 1/20/2014, EWSU reported that the peak of the plume should have arrived at 2200 hrs. CST on 1/19/2104 based on the upriver plume detections and projected arrival time calculated on river flow rates. As of 1200 hrs.CST on 1/20/2014, there was no detection by odor, or the results of all samples collected were below detection limits based on laboratory analyses.

1.1.2.2 Description of Threat
A chemical release of 4-methylcyclohexanemethanol (MCHM) into the Ohio River which serves as a source of drinking water to residents in neighboring states.

1.1.3 Preliminary Removal Assessment/Removal Site Inspection Results
The spill at the Freedom Industries facility occurred from Tank 396 that contained the following:

- 88.5% crude MCHM
- 7.3% PPH (a polyglycol ether mixture)
- 4.2% water percent by weight.

Reportedly, the secondary containment around the tanks was inadequate and failed. EPA Region 3 estimated that approximately 6,500 gallons of the material was released. However, the volume of the compound that initially entered the Elk River is uncertain.

EPA Region 3 "Hotsite Reports" indicate that the Responsible Party (RP) utilized facility personnel and initiated the hiring of contractors to place boom along the shoreline of the Elk River, adjacent to the area of the spill. The RP also hired contractors to conduct land clean-up operations. However, due to the miscible nature of the compound, the release was not sufficiently controlled and the spill migrated from the Elk River, into the Kanawha River, and subsequently the Ohio River.

ORSANCO has tracked the plume in the Ohio River from the point where the Kanawha River emptied into the Ohio at Point Pleasant, WV. In the early stages of this event, the Agency for Toxic Substances and Disease Control (ATSDR) published an action level of such that less than 1 milligram per liter (mg/l) of MCHM in drinking water was protective of human health. Potable water utilities along the Left Descending Bank (LDB) of the Ohio River have measured MCHM in their raw water at concentrations up to 35 micrograms per liter (ug/l). However, MCHM has a licorice odor to it, which is detectable when the MCHM concentration is less than 1 ug/l in water. Powdered activated carbon (PAC) is capable of removing trace amounts of MCHM in water to an extent where the odor is not noticeable. Some drinking water plants are choosing to treat the water with PAC due to inadequate reserves of finished water. Others are allowing the plume to pass by if they have adequate finished water storage capacity.

2. Current Activities

2.1 Operations Section

2.1.1 Narrative
On 1/15/14, OSC Smith mobilized to the ORSANCO offices in Cincinnati, OH, at the request of the Kentucky Department for Environmental Protection (KDEP). The purpose of the deployment was for EPA to better understand the issues associated with the MCHM plume in the Ohio River, to monitor the status of the drinking water plants in Kentucky, and to respond to any requests for assistance from KDEP.

The OSC has also mobilized the EPA Environmental Response Team (ERT) to assist with evaluation of analytical methods for detecting MCHM in water. The OSC also deployed the Region 4 Superfund and Technical Assistance Team (START) contractor Tetra Tech to compile data produced during this incident and to map the plume as it travels downstream. Additionally, EPA Region 5 has mobilized one START member to support EPA Region 4 response activities.

Based on the declining trend in MCHM concentrations in the Ohio River, OSC Smith and the START contractors demobilized from the incident on 1/18/2014, thus ending the active on-site involvement for EPA Region 4 on this incident.

2.1.2 Response Actions to Date
The United States Geological Survey (USGS) in Louisville, KY collected water samples along multiple transects in the Ohio River at intake points for the Louisville Water Company. The samples will be shipped to EPA ERT in Edison, NJ for MCHM analysis.

2.1.3 Enforcement Activities, Identity of Potentially Responsible Parties (PRPs)
Freedom Industries, located at 1015 Barlow Drive, Charleston, Kanawha County, WV 25311 is the PRP for this incident.

2.1.4 Progress Metrics

Waste Stream	*Medium*	*Quantity*	*Manifest #*	*Treatment*	*Disposal*
N/A					

2.2 Planning Section

2.2.1 Anticipated Activities

See below in Section 2.2.1.1.

2.2.1.1 Planned Response Activities
No further response acttions are planned for this incident

2.2.1.2 Next Steps
Retrieve data collected by KDEP to document the analysis of surface water, raw water and finished water samples which were collected in response to this incident.

2.2.2 Issues
None

2.3 Logistics Section
None.

2.4 Finance Section

Estimated Costs *

	Budgeted	Total To Date	Remaining	% Remaining
Extramural Costs				
START	$10,000.00	$6,000.00	$4,000.00	40.00%
SERAS	$15,000.00	$15,000.00	$0.00	0.00%
Intramural Costs				
Total Site Costs	$25,000.00	$21,000.00	$4,000.00	16.00%

* 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

Not applicable.

2.5.2 Liaison Officer

Not applicable.

2.5.3 Information Officer

3. Participating Entities

3.1 Unified Command
EPA is the lead federal agency and KDEP is the lead state agency for this response.

3.2 Cooperating Agencies
ORSANCO, US Coast Guard, Kentucky Department for Public Health, and the various drinking water utilities in Kentucky along the Ohio River.

4. Personnel On Site

EPA Region 4 - 1
EPA ERT - 1
KDEP - 2
ORSANCO-1
START (Tetra Tech - Region 4) - 1
START (Weston Solutions - Region 5) - 1

5. Definition of Terms

No information available at this time.

6. Additional sources of information

6.1 Internet location of additional information/report

6.2 Reporting Schedule
On a daily basis until the risk to drinking water utilities is mitigated, at which point the reporting frequency will be adjusted accordingly.

7. Situational Reference Materials

No information available at this time.

POLREP #4 Last Updated 3/5/2014