

U.S. ENVIRONMENTAL PROTECTION AGENCY  
POLLUTION/SITUATION REPORT  
Superior Refining Company Explosion - Removal Polrep  
Initial Removal Polrep



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
Region V

**Subject:** POLREP #1  
Initial  
Superior Refining Company Explosion

Superior, WI

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**From:** David Morrison, OSC  
**Date:** 4/27/2018  
**Reporting Period:** 4/26/18 1000 CST-4/27/18 0700 CST

## 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> OPA	<b>Response Type:</b> Emergency
<b>Response Lead:</b> EPA	<b>Incident Category:</b>
<b>NPL Status:</b> Non NPL	<b>Operable Unit:</b>
<b>Mobilization Date:</b> 4/26/2018	<b>Start Date:</b> 4/26/2018
<b>Demob Date:</b>	<b>Completion Date:</b>
<b>CERCLIS ID:</b>	<b>RCRIS ID:</b>
<b>ERNS No.:</b>	<b>State Notification:</b>
<b>FPN#:</b> E18516	<b>Reimbursable Account #:</b>

#### 1.1.1 Incident Category

Emergency Response

#### 1.1.2 Site Description

##### 1.1.2.1 Location

The Superior Refining Company Refinery is located at 2407 Stinson Ave, Superior, Douglas County, WI 54880. The refinery is located southeast of the city center of Superior. Lake Superior is located to the north/northeast of the refinery.

##### 1.1.2.2 Description of Threat

An explosion in the facility resulted in an asphalt tank fire and a significant smoke plume, an anhydrous tank release, and the threat of a hydrogen fluoride (HF) release to the community.

### 1.1.3 Preliminary Removal Assessment/Removal Site Inspection Results

Initial air monitoring efforts still ongoing.

## 2. Current Activities

### 2.1 Operations Section

#### 2.1.1 Narrative

On 4/26/18 at approximately 1000 CST, Superior Refining Company was shutting down equipment at the refinery when an explosion occurred. It is believed that an unknown hydrocarbon was released, which ignited. By 1100 CST, the small fire was extinguished. During the explosion, however, a piece of shrapnel damaged tank 101, which was full of asphalt (50,400 barrels). Around 1200 CST, a second fire began in the breached Tank 101. Due to the ensuing fire, the refinery was subsequently evacuated. A community evacuation was also ordered by the Fire Department. The evacuation was approximately 6 miles (3 miles east, 3 miles west, by 10 miles south), primarily driven in size to a concern about a potential failure of a 15,000 gallon hydrofluoric acid (HF) container.

The fire spread at the facility to process units, ground fires by tanks 103 and 104, a vac tower, a crude unit, tank 100, gate 101, tank 103 mixer, and a main column. 7 tanks were affected and had insulation burned off. The fire in tank 101 was initially extinguished at 1842 CST, however, hot spots associated with the tank were not completely extinguished until 2355 CST.

Superior Refining Company filed an NRC report (#1210367) at 1126 EST on 4/26/18 reporting an air release of an unknown hydrocarbon which resulted in an explosion.

#### 2.1.2 Response Actions to Date

EPA mobilized to the site and arrived around 1430 CST. Upon arrival, EPA met with Wisconsin Department of Natural Resources (WDNR), potentially responsible party (PRP) Superior Refining Company, Superior Fire Department, Douglas County Emergency Management, Superior Police Department, and the Superior Mayor. The Incident Command Post had been moved to the Enbridge facility and the EOC was operating at the Douglas County Courthouse. EPA integrated into the existing response structure.

EPA requested air release monitoring from Interagency Modeling and Atmospheric Assessment Center (IMAAC). Around 1400 CST, IMAAC ran an initial model to assist with response tactics. IMAAC has also re-run the model to reflect future weather changes. Initially, the wind was going south/southeast, however based on IMAAC modeling it showed that the wind direction was going to change to northeast around 2200 CST. late night and early morning winds were light and variable an eventually trended from the NE.

Most of the water drains through the facility's waste water treatment plant (WWTP). However a portion of the site discharges to a ditch, then to Newton Creek, and Hog Bay. The U.S. Coast Guard provided boom for response contractors and also provided oversight at the request of EPA. Boom has been deployed at 6 locations along Newton Creek from the control structure to the outfall in Hog Island Bay. Foam has been noted and a few floating tarballs within the contained area. The boom will be evaluated at first daylight. Superior Refinery collected firefighting water and foam from the ditch next to the tanks and has been pumping it into frac tanks. Other drainage to the WWTP is being contained because the WWTP does not have power and isn't flowing (and was evacuated).

Initial air monitoring was conducted by a contractor for Superior Refining, which included VOCs and particulates. START and PRP contractors monitored 12 locations along the evacuation zone where responding police were stationed and found no concentrations of volatile organic compounds (VOCs) or hydrogen sulfide (H<sub>2</sub>S) in the nearby community shortly after the fire was extinguished. Additional air monitoring resources from the responsible party and START have arrived on scene. START is conducting air monitoring in residential areas.

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

The refinery is owned by Superior Refining Company, LLC.

#### 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

EPA will continue to provide air monitoring support. WDNR is providing followup on the booming and will be overseeing water quality testing in the creek and in the bay. The facility is undergoing assessment for damages as safety allows.

##### 2.2.1.1 Planned Response Activities

The City of Superior is planning on lifting the evacuation order.

##### 2.2.1.2 Next Steps

EPA will stand up more robust air monitoring capabilities as assets arrive.

#### 2.2.2 Issues

None

### 2.3 Logistics Section

R5 EPA Emergency Response Staff assisted with logistics

### 2.4 Finance Section

#### 2.4.1 Narrative

an FPN was opened for \$50,000.

**Estimated Costs \***

	Budgeted	Total To Date	Remaining	% Remaining
<b>Extramural Costs</b>				
TAT/START	\$20,000.00	\$0.00	\$20,000.00	100.00%
<b>Intramural Costs</b>				
<b>Total Site Costs</b>	\$20,000.00	\$0.00	\$20,000.00	100.00%

\* 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**

OSC and Superior Refining Safety Officer are filling this role.

**2.5.2 Liaison Officer**

OSC and Superior Refining Liaison Officer are filling this role.

**2.5.3 Information Officer**

EPA Press Officer Rachel Bassler is serving this role.

**3. Participating Entities**

**3.1 Unified Command**

Emergency remained in Incident Command Status. Unified command has not been formally established due to ongoing fires and hot spots.

**3.2 Cooperating Agencies**

- Superior Fire Department
- Douglas County Emergency Management
- Superior Police Department
- Wisconsin Department of Environmental Resources (WDNR)
- Minnesota Pollution Control Agency (MPCA)
- Agency for Toxic Substances and Disease Registry (ATSDR)
- Douglas County Health Department
- Wisconsin Department of Health Services
- Minnesota Department of Health

**4. Personnel On Site**

- EPA: 3
- START: 4
- WDNR: 2
- Superior Refining Company, TBD
- local and state officials: TBD

**5. Definition of Terms**

- CERCLA Comprehensive Environmental Response, Compensation, and Liability Act
- WDNR Wisconsin Department of Natural Resources
- EPA Environmental Protection Agency
- ERRS Emergency and Rapid Response Service
- NCP National Oil and Hazardous Substance Pollution Contingency Plan
- OPA Oil Pollution Act
- NOAA National Oceanic and Atmospheric Administration
- NPL National Priorities List
- NRC National Response Center
- OSC On Scene Coordinator
- RCRIS Resource Conservation and Recovery Act Information System
- PRP Potentially Responsible Party
- CWA Clean Water Act
- 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**

Additional information can be found on the Douglas County Website: <https://www.douglascountywi.org/>

**6.2 Reporting Schedule**

Additional and Final Polrep TBD

## **7. Situational Reference Materials**

An SDS was supplied by the PRP.