

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



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region V

Subject: POLREP #2
Sitrep 2
Superior Refining Company Explosion

Superior, WI

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From: David Morrison, OSC

Date: 4/29/2018

Reporting Period: 4/27/18 0700 CST-4/29/18 0200 CST

1. Introduction

1.1 Background

Site Number:	Contract Number:
D.O. Number:	Action Memo Date:
Response Authority: OPA	Response Type: Emergency
Response Lead: EPA	Incident Category:
NPL Status: Non NPL	Operable Unit:
Mobilization Date: 4/26/2018	Start Date: 4/26/2018
Demob Date:	Completion Date:
CERCLIS ID:	RCRIS ID:
ERNS No.:	State Notification:
FPN#: E18516	Reimbursable Account #:

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 as well as several smaller fires, and the threat of a hydrogen fluoride (HF) release to the community. Oil continues to leak from damaged tanks and piping on the refinery, resulting in a potential continued discharge to Newton Creek. Newton Creek drains into Lake Superior. EPA has observed a sheen leaving the refinery property in the ditch and in the Creek on 4/27 and 4/28, 2018.

1.1.3 Preliminary Removal Assessment/Removal Site Inspection Results

Following arrival at the scene, EPA began to conduct air monitoring.

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 due to a concern about a potential failure of a 15,000 pounds 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.

Situational update for current reporting period:

The evacuation order was lifted by the City of Superior at 6 am on 4/27/18.

On 4/27/18, the facility reported that although conditions at the site were improving, hot spots were being re-foamed and new leaks were being discovered and addressed during assessment work. There were concerns early on about tanks that were still hot and cooling those. The facility also reported that they had used a drone to evaluate internal temperatures. On 4/27/18, EPA noted extensive fire damage to several above ground storage tanks on site. Sheen was observed in both the ditch and in Newton Creek (which leads to Lake Superior). Firefighting foam was also observed off-site.

On 4/28/18, the facility gave a thorough update on current conditions at the facility since assessment activities had begun following the fires being put out. The facility has identified damaged tanks and piping and process areas within the refinery. Oil was actively leaking on the refinery property. There is a tower that has been damaged and is currently leaning over facility piping that could contain hydrocarbons. The asphalt that was released has solidified, encasing many structures and equipment. Reactor beds and an inoperable flaring unit were at risk of accumulating flammable vapors and needed to be purged and It is still possible that another fire could erupt at the refinery. The facility continues to work to stabilize the situation.

2.1.2 Response Actions to Date

During prior reporting period

See POLREP #1 for operations during first reporting period

During current reporting period

EPA START established an air monitoring network in the community. By the time all resources had arrived on site, the main fire had been extinguished. EPA ERT also assisted with air monitoring. EPA focused their air monitoring on the area with the evacuation zone as well as other areas both downwind and upwind (pending wind shifting). All data has been uploaded to the internal geoplatform viewer. No consistent elevated levels of volatile organic compounds (VOCs), hydrogen sulfide (H₂S), or benzene have been detected off site. Downwind particulate monitoring was consistent with upwind locations.

Based on information from the facility on 4/27 that the facility was stabilizing and no elevated readings had been detected, EPA discontinued air monitoring early in the morning on 4/28. However, after obtaining more information about the situation (and possibility that another fire could start) at the refinery on 4/28, EPA transitioned into standby mode. If conditions at the facility change or another fire does start, EPA is prepared to re-deploy air monitoring equipment to the neighborhood. Superior Refining Company's company continues to conduct air monitoring within the refinery, on the fence line perimeter of the refinery, and in the community. EPA has been working with Superior Refining Company and their contractor to ensure that their air monitoring plan is sufficient to assess off-site impacts.

On 4/27/18, EPA and WDNR went to assess Newton Creek. Access to the area surrounding the refinery still has limited access due to safety concerns. During the visit, water and a sheen were observed in the drainage ditch outside of the refinery. The facility is pumping water from the drainage ditch back into their retention areas on site, however some of the water is still leaving the ditch and entering the creek. A sheen was observed in Newton Creek as well. Globules of oil have also been observed off property. Superior Refining Company's OSRO has deployed both containment and sorbent booms to the ditch and Creek. They are maintaining the boom and will be conducting a cleanup of oil that has built up and the globules. WDNR requested that the company use a vacuum to clean up the firefighting foam.

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

The refinery is owned by Superior Refining Company, LLC. A notice of federal interest has been issued to Superior Refining Company, LLC.

2.1.4 Progress Metrics

Waste Stream	Medium	Quantity	Manifest #	Treatment	Disposal

2.2 Planning Section

2.2.1 Anticipated Activities

EPA will continue to ensure that Superior Refining Company's air monitoring plan is robust while continued operations at the

facility occur that could result in off-site releases. EPA is on standby in case another fire occurs on site or an off-site air release is detected.

Newton Creek and off-site water impacts and response actions by the responsible party will continue to be monitored. The facility is undergoing assessment for damages as safety allows.

2.2.1.1 Planned Response Activities

2.2.1.2 Next Steps

Continue to monitor the response efforts.

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 initially opened for \$50,000. An increase to \$100,000 was approved by the fund center on 4/28/18.

Estimated Costs *

	Budgeted	Total To Date	Remaining	% Remaining
Extramural Costs				
TAT/START	\$50,000.00	\$0.00	\$50,000.00	100.00%
Intramural Costs				
Total Site Costs	\$50,000.00	\$0.00	\$50,000.00	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 and Superior Refining PO are serving this role.

3. Participating Entities

3.1 Unified Command

EPA is not currently in a Unified Command role but continues to be involved in the command structure and planning process.

3.2 Cooperating Agencies

- Superior Fire Department
- Douglas County Emergency Management
- Superior Police Department
- Wisconsin Department of Natural 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
- Occupational Safety and Health Administration (OSHA)
- Chemical Safety Board (CSB)

4. Personnel On Site

- EPA Region 5: 4
- EPA ERT and contractors: 3
- START: 7
- 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 Polreps TBD

7. Situational Reference Materials

An SDS was supplied by the PRP.

An Air Monitoring plan is under revi