

U.S. ENVIRONMENTAL PROTECTION AGENCY
POLLUTION/SITUATION REPORT
Mackinaw Bay Petroleum Sheens - Removal Polrep
Final Removal Polrep



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region VIII

Subject: POLREP #3
Removal Completion and Demobilization
Mackinaw Bay Petroleum Sheens
Z8DN
Whitefish, MT
Latitude: 48.4510090 Longitude: -114.3912010

To:
From: Steven Merritt, On-Scene Coordinator
Date: 6/30/2012
Reporting Period: 6/18/2012 - 6/30/2012

1. Introduction

1.1 Background

Site Number:	Z8DN	Contract Number:
D.O. Number:		Action Memo Date:
Response Authority:	OPA	Response Type:
Response Lead:	PRP	Incident Category:
NPL Status:	Non NPL	Operable Unit:
Mobilization Date:	5/14/2012	Start Date:
Demob Date:	6/29/2012	Completion Date:
CERCLIS ID:		RCRIS ID:
ERNS No.:		State Notification:
FPN#:	E11801	Reimbursable Account #:

1.1.1 Incident Category

Transportation Related - Historical Train Derailment

1.1.2 Site Description

This site involves EPA oversight of a responsible party, BNSF, removing residual contamination from an historical derailment of multiple leaking diesel fuel tank cars on July 31, 1989. The original spill event was followed by two different oil removal actions, one of which involved excavation of contaminated soils in the upland zone between the tracks and the shoreline, and the other involved recovery of the spilled diesel floating on the surface of the lake using absorbent materials and skimmers. Neither of these actions addressed the contaminated sediments in Mackinaw Bay and these residuals have not weathered away or naturally attenuated due to the cold lake temperatures and associated biological activity limitations. This project is being conducted on consent with BNSF and in coordination with the Montana Department of Environmental Quality (MTDEQ).

1.1.2.1 Location

Mackinaw Bay is located approximately 3 miles to the north of the City of Whitefish on the west side of Whitefish Lake at GPS coordinates 48.451436, -114.389741. The bay is a well protected and relatively pristine with no development along the shoreline, other than the railroad track to the west, and native forest extending from the upland areas to the edge of the lake. The shorelines are steep and the bay has two sediment benches that are less than 15 feet deep extending approximately 30 feet into the lake before the water depth rapidly increases. The bottom of Mackinaw Bay is a mixture of sediments, some rocks and boulders, and numerous decomposing tree trunks and limbs.

1.1.2.2 Description of Threat

The threat from residual diesel and weathered petroleum within Mackinaw Bay is to recreational boaters and the aquatic ecosystem of Whitefish Lake. The exposure pathways for human populations at the site include dermal and respiratory contact only when sediments are agitated. While the City of Whitefish and various private communities draw water from Whitefish Lake, there is very limited mobility of this contamination and measurable amounts are not expected to be detected at any intakes. The ecological threat from these residues in the sediments may inhibit the growth and development of aquatic organisms and benthic populations that serve as the food supply for fish and other species in the area.

1.1.3 Preliminary Removal Assessment/Removal Site Inspection Results

The landowner on Whitefish Lake in Mackinaw Bay whose property was directly impacted by the original derailment observed and reported the presence of ongoing petroleum sheen originating in the sediments of the bay in the summer of 2010. The Whitefish Lake Institute and the City of Whitefish made the MTDEQ and EPA aware of the issues and requested assistance in getting the sediments cleaned up by BNSF. BNSF and its contractors, which have already been conducting another petroleum removal along the Whitefish River nearby, began investigating and sampling to assess the extent of contamination in the fall of 2010. BNSF provided their findings to EPA and MTDEQ by the winter of 2010 and conducted bathymetry surveys of Mackinaw Bay in 2011. KennedyJenks (KJ), a BNSF contractor, also conducted pilot-scale studies of air sparging techniques for non-invasive removal of petroleum residuals in the sediments, but ultimately ruled those out in favor of mechanical dredging and hauling in 2011. By late 2011, KJ had prepared and submitted a proposal for removing the sediments in the spring of 2012 to EPA and MTDEQ and a Work Plan was discussed and finalized to begin oil removal activities for 450 cubic yards of sediments in May 2012.

2. Current Activities

2.1 Operations Section

2.1.1 Narrative

During this reporting period, final preparations were made within Mackinaw Bay to begin dredging the contaminated sediments, equipment was calibrated to enable the dredge to be GPS-guided throughout the removal action, dredging commenced, and significant progress was made toward removing the contaminated sediments.

2.1.2 Response Actions to Date

Monday, June 18, 2012

USCG PST and EPA ERT at BNSF railyard and attend morning safety/operations brief with BNSF contractors. Transited to City Beach pier and launched small boats to shuttle crew to the excavator barge. Shifted the boom and barges approximately 100 yards to the left, south side of dig area. Filled and transported 4 containers to the pier for disposal. Filled 2 more containers that will be transported to pier tomorrow morning. Envirocon set up and calibrated survey equipment to be used this week to evaluate the completed dig areas. K/J Contractors continued taking confirmation samples from previous dig locations, all except one (A4) of which was submitted to the laboratory for analysis. Over-dredging by at least a foot was conducted in areas that previously showed the presence of petroleum sheen and diesel odor during confirmatory sampling. No new sheen appeared in dig areas, however sheen that was trapped under and around the barge appeared at the surface. Sheen was stopped with absorbent pads and CI Agent. Prepared the deck for next work day's operations and stowed gear. Cumulative total of 56 containers offloaded at City Beach and 58 filled with contaminated sediments in Mackinaw Bay.

EPA ERT attended the Whitefish City Council Meeting to provide the public with an update on the status of the project. Questions were asked about the breach of the water treatment system on the Whitefish River project (see Bulletins for more information) and about whether the projects will be completed on schedule.

Tuesday, June 19, 2012

USCG PST and EPA ERT at BNSF railyard and attend morning safety/operations brief with BNSF contractors. Transited to City Beach pier and launched small boats to shuttle crew to the excavator barge. Transported the 2 filled containers from previous workday. Filled and transported 4 containers to the pier for disposal by turning the barge and excavator sideways to reach deeper areas. An additional 2 more containers were filled that will be transported to pier tomorrow morning. Envirocon conducted survey of Mackinaw Bay to evaluate the completed dig areas. K/J contractors continued taking survey samples from previous dig locations. Heavy sheen appeared in dig areas and some escaped the dig area. Solidifying agent was deployed and contractors stopped digging in order to combat the presence of sheen. Sheen was stopped with absorbent pads and CI Agent. Prepared the deck for next work day's operations and stowed gear. Cumulative total of 62 containers offloaded at City Beach and 64 filled with contaminated sediments in Mackinaw Bay.

Wednesday, June 20, 2012

USCG PSTs and EPA ERT at BNSF railyard and attend morning safety/operations brief with BNSF contractors. Transited to City Beach pier and launched small boats to shuttle crew to the excavator barge. Transported the 2 filled containers from previous workday. Filled and transported 8 containers to the pier for disposal from the southern portion of Mackinaw Bay. An additional 2 containers were filled that will be transported to pier tomorrow morning. Envirocon conducted survey of Mackinaw Bay to evaluate the completed dig areas. K/J contractors continued taking survey samples from previous dig locations. Prepared the deck for next work day's operations and stowed gear. Cumulative total of 72 containers offloaded at City Beach and 74 filled with contaminated sediments in Mackinaw Bay.

Thursday, June 21, 2012

USCG PST and EPA ERT at BNSF railyard and attend morning safety/operations brief with BNSF contractors. Transited to City Beach pier and launched small boats to shuttle crew to the excavator barge. Transported the 2 filled containers from previous workday to City Beach for offload. Filled and transported 6 containers to the pier for disposal on the south side of Mackinaw Bay, nearing the end of the dredge units. Placed additional super sacks of rock near the crane to prevent collisions between the crane and the container barges as a result of high water level in Whitefish Lake. An additional 2 containers were filled that will be transported to pier tomorrow morning. K/J Contractors continued taking samples from completed dig

areas and submitting them for laboratory analysis. Prepared the deck for next work day's operations and stowed gear. Cumulative total of 80 containers offloaded at City Beach and 82 filled with contaminated sediments in Mackinaw Bay.

Friday, June 22, 2012

USCG PST and EPA ERT at BNSF railyard and attend morning safety/operations brief with BNSF contractors. Transited to City Beach pier and launched small boats to shuttle crew to the excavator barge. Transported the 2 filled containers from previous workday. Shifted dig area back to north side to re-dig small sections to collect sediments beyond the original required dig depth. Filled and transported 6 containers to the pier for disposal and completed excavation in all required areas, pending EPA OSC approval. K/J Contractors continued taking samples from completed dig areas and sending them off for laboratory analysis. Contractors will sample the last excavated area to determine if all the contaminated sediment had been removed. Demobilization process will begin Monday for all non-essential gear, but remaining equipment will be kept on site to allow over-dredging should any sample results come back high. Secured all gear for the weekend. Cumulative total of 88 containers offloaded at City Beach and 88 filled with contaminated sediments in Mackinaw Bay.

Saturday, June 23, 2012

No activities at the site.

Sunday, June 24, 2012

No activities at the site.

Monday, June 25, 2012

USCG PST and EPA OSC at BNSF railyard and attend morning safety/operations brief with BNSF contractors. Transited to City Beach pier and launched small boats to shuttle crew to the excavator barge. Condon Tug transited to City Beach pier with one container barge for demobilization. Tug and barge sections were offloaded safely and transported to BNSF railyard. Moved excavator barge to the north to conduct dig test in possible remaining sheen area with EPA OSC oversight. Dig test revealed traces of sheen and the contractors commenced excavation of two additional containers for that area. Container barge transited to city beach to offload filled containers and one section of the barge. Crew began demob of boom sections that were not in use and prepared remaining gear to be transferred to City Beach in the morning. All remaining gear to be demobilized tomorrow morning with the exception of the excavator barge that will be dependent on minimal beach traffic and weather. Plan is to be completely demobilized by Wednesday. Cumulative total of 90 containers offloaded at City Beach and 90 filled with contaminated sediments in Mackinaw Bay. EPA OSC, BNSF, Envirocon and K/J met with Karin Hilding of the City of Whitefish about the progress at the site and the planned work along the Whitefish River.

Tuesday, June 26, 2012

EPA OSC at BNSF railyard and attend morning safety/operations brief with BNSF contractors. EPA OSC and Envirocon met with Karl Cozad at the City of Whitefish to discuss demobilization from City Beach and his expectations about the rehabilitation of the boat launch area north of the Rescue Hovercraft Garage. Work was postponed in Whitefish Lake due to lightning, gusty winds, and strong thunderstorms passing through the area throughout the day. Some limited activity occurred to prepare all vessels and equipment for demobilization the following day. K/J received sample results indicating that all but three of the confirmatory sample results were below the lowest screening level of 200 mg/kg extractable petroleum hydrocarbons EPH. These samples were sent off for further fingerprinting to determine what portion is in the diesel range. The three samples are at depth and at the edge of the drop off on the south side of Mackinaw Bay. The concentrations in the samples indicate approximately 80% reduction in EPH when compared to the nearest initial characterization sample collected before the removal action. Overall, the average EPH concentration in Mackinaw Bay was reduced by 97.3% as a result of the project based upon preliminary analytical results.

Wednesday, June 27, 2012

EPA OSC at BNSF railyard and attend morning safety/operations brief with BNSF contractors. Contractors spent the day demobilizing and cleaning all remaining equipment and vessels used in Whitefish Lake with the crane at City Beach. The excavator was tracked off the work platform late in the afternoon and the work platform disassembled. All vessels were out of the water by the end of the day, leaving only the crane still deployed.

Thursday, June 28, 2012

BNSF contractors worked to remove the crane from the swollen Whitefish Lake and recover other equipment from City Beach before the weekend. K/J and Envirocon met with officials from the City of Whitefish to confirm that the rock placed beneath the crane mats would be reconfigured to provide the Fire Department with a smooth launch ramp from the Hovercraft Hangar to the water. All other rock and the super sacks will be removed and used as backfill in the Whitefish River project.

Friday, June 29, 2012

BNSF contractors removed the crane mats and the super sacks of rock from City Beach and transported them to the BNSF railyard. They then discussed the reconfiguration of the in-place river rock to construct a launch ramp for the rescue hovercraft as requested by the City of Whitefish using an excavator. All equipment was removed from City Beach and the security fence recovered by the subcontractor, leaving both sides of the boat ramp open for recreational use.

Saturday, June 30, 2012

EPA OSC inspected the condition of the City Beach boat ramp and Mackinaw Bay to ensure action is complete. EPA OSC prepared POLREP and initiated notification of stakeholders to provide an update on progress.

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

The PRP for this action is the Burlington Northern Santa Fe Railroad.

2.1.4 Progress Metrics

Waste Stream	To Date Quantity Removed/Hauled	Projected Quantity to Remove/Haul	% Complete	Quantity Processed Through Treatment	Quantity Disposed of in ND Landfill
Petroleum Contaminated Sediments	460 Cubic Yards	450 Cubic Yards	102.0	460.00 Cubic Yards	200.00 Cubic Yards
Barge Loads (2 Dumpsters) Transported from Mackinaw Bay to City Beach	45 Loads	45 Loads	100.0	N/A	N/A
Truck Loads (1 Dumpster) Transported to BNSF Railyard	90 Loads	90 Loads	100.0	N/A	N/A
Railcar Loads Transported to ND Disposal Facility	10 Loads	10 Loads	100.0	N/A	N/A

2.2 Planning Section

2.2.1 Anticipated Activities

To complete the project from this point, BNSF and its contractors are expected to complete proper disposal of sediments added to the Whitefish River water treatment system, and complete a final project report for the dredging activities conducted.

2.2.1.1 Planned Response Activities

No planned response activities. Removal complete and waste disposal pending.

2.2.1.2 Next Steps

Ship treated contaminated sediments to a permitted disposal facility in North Dakota by railcar. Complete and distribute a final project report on the removal action.

2.2.2 Issues

None

2.3 Logistics Section

No information available at this time.

2.4 Finance Section

No information available at this time.

2.5 Other Command Staff

No information available at this time.

3. Participating Entities

3.1 Unified Command

U.S. EPA Region 8
Burlington Northern Santa Fe Railroad
Montana Department of Environmental Quality
City of Whitefish

3.2 Cooperating Agencies

Montana Department of Fish, Wildlife and Parks
Whitefish Lake Institute
Flathead Basin Commission
Whitefish Lake and Lakeshore Protection Committee

4. Personnel On Site

EPA OSC Steven Merritt
EPA ERT Fred Stroud
USCG Pacific Strike Team BM1 Karen Sinkey
MTDEQ Jessica Gutting
City of Whitefish Engineer Karin Hilding
BNSF Project Manager David Smith
Kennedy Jenks Project Engineer Rob Hagler
Envirocon Project Manager Chris Houck

5. Definition of Terms

No information available at this time.

6. Additional sources of information

6.1 Internet location of additional information/report

Please see bulletins, images and links sections on the project website at
<http://www.epaosc.org/mackinawbaypetroleumsheens> for more frequently updated information and other reports
on the project from local news outlets.

6.2 Reporting Schedule

No new information is expected until final reports are received from BNSF and its contractors. Bulletins will be
updated as project updates are needed/requested and new information is posted. Please continue to monitor
the website for new information.

7. Situational Reference Materials

Please see the documents posted in the documents section of the project website at
<http://www.epaosc.org/mackinawbaypetroleumsheens> for additional documents about the removal action.