



United States  
Environmental Protection  
Agency

# EPA Completes Construction at Torch Lake

**Torch Lake Superfund Site**  
Houghton County, Michigan

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## Contact us

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weekdays, 10 a.m. to 5:30 p.m.

## Site-related documents can be found at:

Lake Linden/Hubbel Public  
Library  
601 Calumet St.  
Lake Linden

Portage Lake District Library  
58 Huron  
Houghton

U.S. Environmental Protection Agency has completed construction on the Torch Lake Superfund site. That means no more work is needed. The cleanup will not be finished until all areas of the site recover enough to meet environmental objectives, however. In the meantime, EPA officials said deed restrictions will ensure the stamp sands (contaminated material) remain covered by any future owners.

## Torch Lake history

The Torch Lake Superfund site is located on the Keweenaw Peninsula in Houghton County, Mich. The site is actually several parcels ranging in size from 10 acres to more than 100 acres (*see map page 3*). Copper mining, milling, and smelting activities from the 1890s until 1969 produced tailings, or stamp sands, a fine-grained crushed rock waste. About 200 million tons of stamp sands were dumped into Torch Lake alone, filling 20 percent of the lake. Other lakes and streams in the area were also dump sites. The waste material settled to the bottom of the lakes and streams and also contaminated shorelines.

In the early 1900s, the stamp sands were dredged to reclaim copper, but the waste from that process was dumped back into the water or on the shore. When copper production ended in the 1960s, large deposits of the waste material remained in or near the surface waters of Houghton County. Shoreline erosion of these materials began to harm fish and the small aquatic animals living in the lakes and streams.

## Cleanup progress

In the 1970s, residents, local officials and environmental scientists became increasingly concerned because of the high concentration of copper and other heavy metals in Torch Lake sediment, toxic discharges into the surrounding lakes and the appearance of fish abnormalities. In 1986, the site was placed on

## Cleanup Costs

The original cleanup was estimated to cost \$15.2 million. As of Sept. 30, 2005:

- Total construction cost (paid to local contractors): \$10,165,389
- Total USDA-NRCS technical assistance costs: \$2,195,217
- Total dollars under budget and saved: \$2,839,394

the National Priorities List, making the area eligible for cleanup under the EPA Superfund program.

Due to its size and complex nature, the Torch Lake site was divided into three smaller parts called operable units or OUs. OU1 consisted of stamp sands, as well as the slag pile and disposed drums on the western shore of Torch Lake (*Sites 1, 2, and 3 on the site map*). OU2 included areas of potential contamination in and around Torch Lake including underground water supplies (ground water), submerged tailings at the bottom of the lake, sediment and surface water. OU3 consisted of stamp sands and slag pile locations throughout the Keweenaw Peninsula (*Sites 4, 5, and 6 on the site map*).

EPA began cleaning up the area in 1988 by removing dozens of buried drums containing toxic waste. The Agency determined the biggest threat to the environment was the metal-containing stamp sands and slag waste on land, which was eroding into lakes and streams and harming the animals that live there. These animals, such as mussels and tiny insects, serve as food for larger fish and wildlife.

In 1992, EPA selected a plan that included covering about 800 acres of waste materials on OUs 1 and 3 with clean soil and vegetation. The cleanup plan also required the long-term monitoring of Torch Lake sediment to assess the natural recovery and detoxification process after the construction was completed. EPA determined no cleanup was necessary on OU2 because the sediment would recover naturally over time if the erosion was stopped in OUs 1 and 3. However, long-term monitoring on OU2 was begun to make sure natural processes are working. This solution not only slowed the erosion but also had the positive side effect of creating new wildlife habitat.

In 1999, EPA began work on cleaning, clearing, grading, covering and seeding the stamp sands and slag areas on OUs 1 and 3. The cleanup for Torch Lake included:

- deed restrictions for all areas to ensure the stamp sand and slag piles remain covered
- debris removal

- at least 6 inches of clean soil cover stabilized with vegetation on OU1 tailings in Lake Linden, Hubbell/Tamarack City and Mason; OU3 tailings in Calumet Lake, Boston Pond, Michigan Smelter, Dollar Bay, Point Mills, North Entry and Scales Creek; and an OU1 slag pile/beach in Hubbell.

As part of the site plan, in 2003 and 2004 EPA, Michigan Department of Environmental Quality and the Natural Resources Conservation Service planted around 35,000 plants to stabilize the 7-acre Gull Island in the middle of Torch Lake. Gull Island was not originally considered part of the Superfund site, but it was added due to complaints from local residents about wind-blown stamp sands from the island.

In 2002, OU2 and the Lake Linden area, and in 2004 the Hubbell/Tamarack City portion of the site, were removed from the Superfund List. All the cleanup construction in those areas was completed by September 2005.

In 2004 and 2005, EPA removed abandoned laboratory chemicals inside and asbestos outside the buildings as well as stabilized the shoreline at Quincy Smelter. Quincy Smelter is located on the Keweenaw Waterway.

### **Ongoing activities**

In 1999 and 2000, EPA conducted environmental sampling to establish the conditions by which the cleanup would be judged. The results are presented in an August 2001 document called a baseline study report. In 2004, MDEQ began its first round of long-term monitoring with a detailed sediment-sampling program. MDEQ will conduct all future long-term monitoring and will compare the results to the baseline study to identify changes or establish trends in lake conditions.

EPA will do operation and maintenance activities at the site for a minimum of two years. At that time, MDEQ, NRCS and EPA will inspect the areas to determine whether each parcel is stable and can withstand weathering and erosion. Then, with the agreement of MDEQ and after notifying the landowners, each area will be deleted from the Superfund list.



Site	Site Name	Acres	Construction Completed	Delisted from NPL
1	Lake Linden	114	1999	2002
2	Hubbell/Tamarack	144	2000	2004
3	Mason Sands	225	2002	
4	Point Mills/Dollar Bay	131	2003	
5	Boston Pond/Calumet Lake/MI Smelter/Isle Royal Sands	112	2004	
6	North Entry/Scales Creek	64	2005	

*Site Map and Progress to Date*

Portions of the site have already been removed from the Superfund list. EPA's goal, however, is to delist the remaining areas by 2008. As areas are removed, MDEQ assumes long-term operation and maintenance responsibilities for the site. Because contamination at

the site is too high for unrestricted use and unlimited exposure, EPA will continue to conduct periodic reviews of the site to ensure the cleanup continues to protect people's health and the environment. The next such review is scheduled for 2008.

# **TORCH LAKE SUPERFUND SITE: EPA Completes Construction**

**FIRST CLASS**

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## **EPA Completes Construction at Torch Lake**

(details inside)