NPL Partial Site Deletion Narrative

Torch Lake
Houghton County, Michigan

On April 8, 2002, EPA deleted the Lake Linden parcel of Operable Unit (OU) 1 and OU2 of the Torch Lake site from the National Priorities List (NPL). OU1, located on the western shore of Torch Lake, includes drums, slag piles, and approximately 500 acres of surface tailings. OU2 encompasses groundwater, surface water, submerged tailings and sediment in Torch Lake, Portage Lake, the Portage channel, and other water bodies at the site.

From 1868 to the late-1960s, Torch Lake was the site of copper milling and smelting facilities and operations. The lake was a repository of milling wastes, and served as the waterway for the mining industry. Copper extraction was accomplished by crushing or "stamping" the rock into smaller pieces and driving them through successively smaller meshes. The crushed rock particles, called "tailings" were discarded along with mill processing water, typically by pumping into the lakes. Around 1916, advances in technology allowed recovery of copper from tailings previously deposited in Torch Lake. Dredges were used to collect submerged tailings. An ammonia leaching process involving cupric ammonium carbonate was used to recover copper and other metals from conglomerate tailings. During the 1920s, chemical reagents were used to further increase the efficiency of reclamation. After reclamation activities were complete, chemically treated tailings were returned to the lakes. During the 1930s and 1940s, the Torch Lake mills operated mainly to recover tailings in Torch Lake. Copper milling continued through the 1950s, but had ceased by the late 1960s.

Environmental concerns developed in the 1970s because of the century-long deposition of tailings into Torch Lake. High concentrations of copper and other heavy metals in Torch Lake sediments, toxic discharges into the lakes, and fish abnormalities prompted many investigations into long- and short-term impacts attributed to mine waste disposal. In 1983, the International Joint Commission's Water Quality Board designated the Torch Lake basin as a Great Lakes Area of Concern (AOC) and the Michigan Department of Public Health announced an advisory against the consumption of Torch Lake sauger and walleye fish due to tumors of unknown origin. The site was placed on the NPL in June 1986.

The EPA began investigation activities in 1988 at Torch Lake, which included a ground penetrating radar and a subbottom profile (seismic) survey to locate drums at the bottom of Torch Lake. In 1989 and 1990, EPA collected 17 samples from drums located on the surface. The results indicated that some of these drums may have contained hazardous substances. Based on the drum sampling results and seismic survey, the EPA ordered several companies and individuals to remove 20 drums with unknown contents. A total of 808 empty drums were found on the lake bottom; these empty drums were not removed. A total of 82 drums and minor quantities of underlying soils were removed from the shore of Torch Lake and disposed off-site at a hazardous waste landfill. In 1992, EPA selected a remedy which called for about 800 acres of tailings and slag piles to be covered with soil and vegetation. The remedy also called for long-term monitoring of Torch Lake to assess the natural recovery and detoxification process after the remedy was implemented. Design of this remedy was completed in September 1998. In 1994, EPA selected a remedy of no further response action for OU2. OU2 will be allowed to undergo natural recovery and detoxification. As of January 1, 2001, the remedial actions at the Lake Linden and Hubbell/Tamarack City portions of

OU1 have been completed. Based on site inspections conducted during the summer of 2001, repairs and fertilization of the soil and vegetative cover at the Lake Linden parcel are no longer necessary.

The EPA, with concurrence from the State of Michigan, has determined that all appropriate responses under CERCLA for the Lake Linden parcel of OU1 and OU 2 have been completed, and that no further response actions under CERCLA are necessary. Because hazardous substances will remain at the Site above levels that allow for unrestricted use and unlimited exposure, the EPA will conduct periodic reviews at this Site. The first five-year review for the Torch Lake Site is scheduled for September 2003.