

SUPERFUND

Ely Copper Mine Superfund Site Vershire, VT

U.S. EPA | HAZARDOUS WASTE PROGRAM AT EPA NEW ENGLAND



THE SUPERFUND PROGRAM protects human health and the environment by investigating and cleaning up often-abandoned hazardous waste sites and engaging communities throughout the process. Many of these sites are complex and need long-term cleanup actions. Those responsible for contamination are held liable for cleanup costs. EPA strives to return previously contaminated land and groundwater to productive use.

SITE DESCRIPTION:

The Ely Copper Mine Superfund Site (“the Site”) is located on the south side of Dwight Hill in the Town of Vershire, Vermont. Ely Mine lies between the Elizabeth and Pike Hill Mines and, as part of that mining district, is considered eligible for the National Register of Historic Places.

MAJOR REPORT FINDINGS

Five reports are nearing completion for this Site: the Remedial Investigation Report (RI); the Human Health Risk Assessment; the Aquatic Ecological Risk Assessment; the Terrestrial Ecological Risk Assessment and the Feasibility Study (FS). These reports identify the contaminants of concern at the Site, as well as current and future potential threats to human health and the environment. These reports will provide the information needed for EPA’s proposed cleanup plan for the Site. The preliminary findings are discussed below.

WASTE SOURCE AREAS

The RI identified several different waste source areas at the Site. (Figure 1) The type of waste contained in these areas is described below:

1. Lower Waste Area and Upper Waste Area- sulfide ore-bearing rock that did not contain enough copper to process and non-sulfide rock from the surrounding bedrock that was removed to create mine openings.
2. Tailings Area- tailings (finely-ground sulfide ore) that were left behind from copper extraction processes at the Site floatation mill.

PUBLIC MEETING

You are invited to attend a Public Information Meeting to learn about upcoming cleanup work at the Ely Mine Superfund Site in Vershire, VT. Representatives from the EPA and the Vermont Department of Environmental Conservation will be available to answer any questions.

WEDNESDAY, MAY 25, 2011 AT 7 PM

Vershire Town Center Building
27 Vershire Center Rd. - Vershire, VT

3. Ore Roast Bed- waste rock from ore roasting, a process that makes it easier to remove the copper from the rock.
4. Smelter/Slag Area- waste rock, oxidized ore, slag and building demolition debris, most of which are associated with on-site smelting operations.
5. Underground Mine Workings- contaminated groundwater and leachate (water that passed through contaminated soil and now contains some of the contaminants) can fill under-

continued >

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GENERAL INFO:

EPA NEW ENGLAND

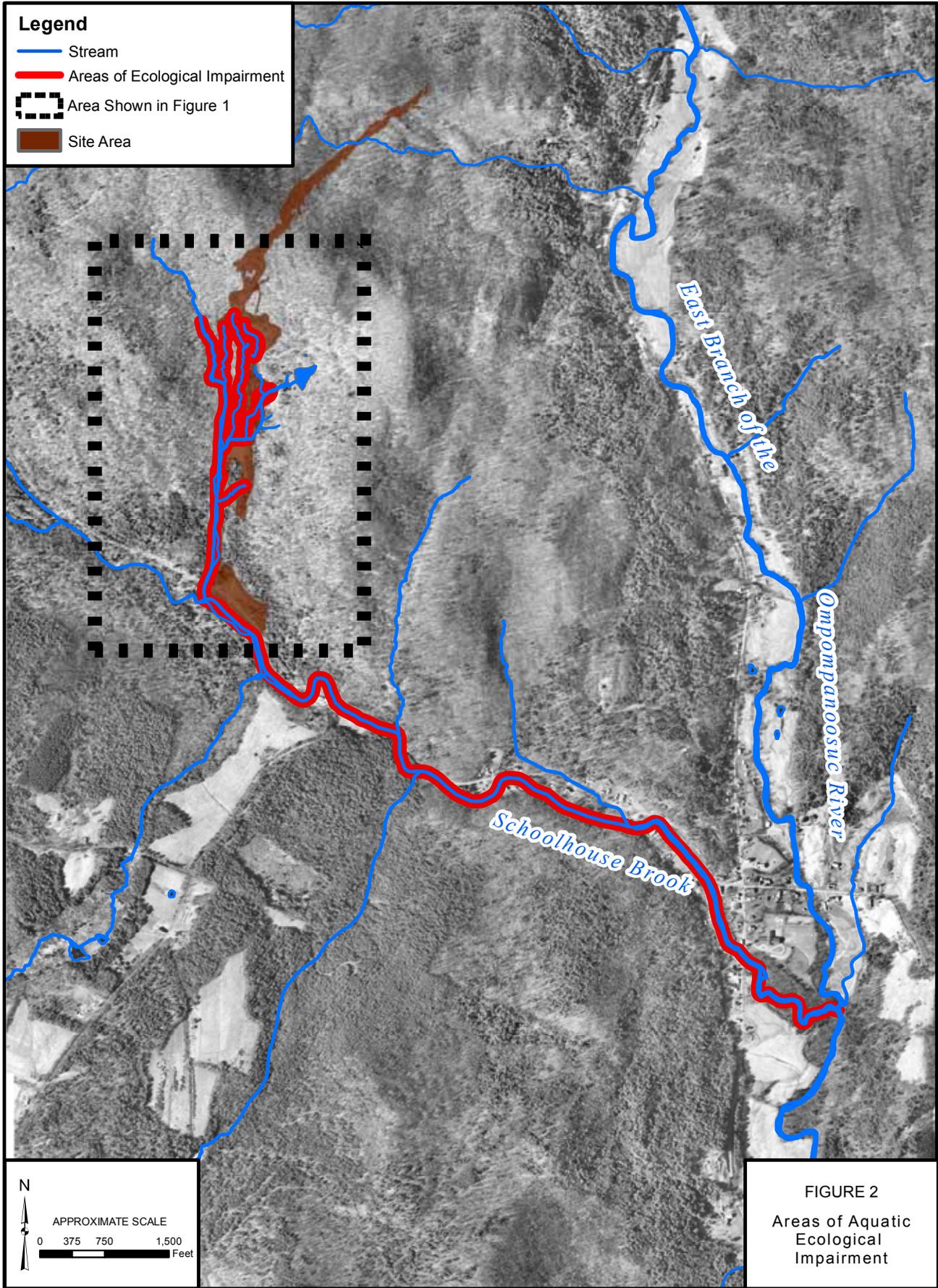
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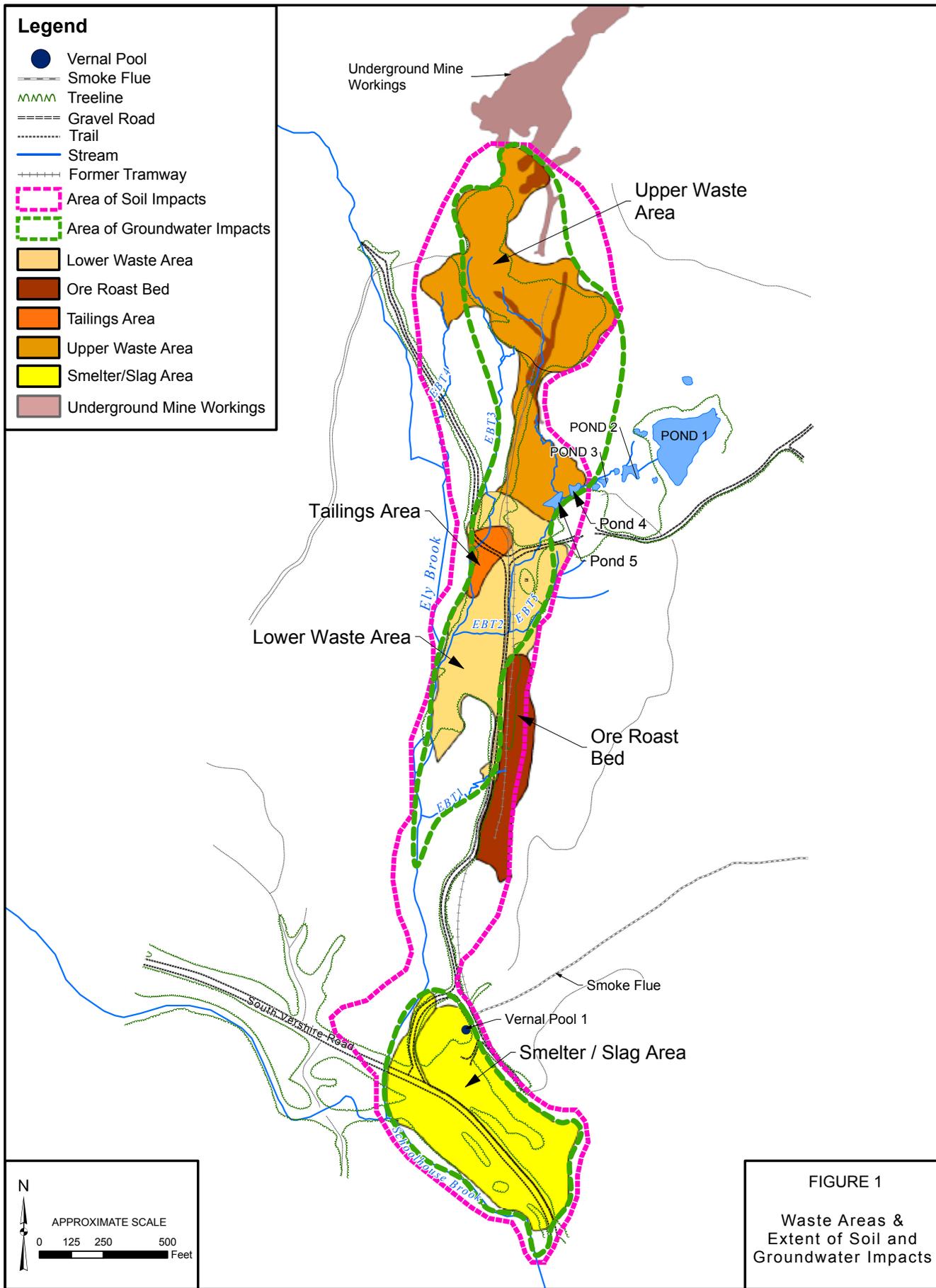
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ground mine tunnels and shafts, some of which eventually drain to Ely Brook.

Sulfide-containing mine wastes at the Site are releasing low-pH leachate with high levels of several metals (particularly aluminum, cadmium, cobalt, copper, iron, manganese, and zinc) into the surface water and groundwater. This is a process commonly referred to as acid rock drainage.

HUMAN HEALTH RISKS

The Human Health Risk Assessment estimated potential current and future human health risks from any contamination in the soil, groundwater, sediment, and surface water at the Site. The major findings are as follows:

- Contact with the soil, sediment, and surface water during recreational activities (ATV-riding, wading, etc.) did not represent an unacceptable risk to human health.
- Soils with high levels of cobalt, copper and iron (shown in Figure 2) may be harmful to someone that lives on or near the Site and comes into contact with them more than 350 days per year.
- Inhaled manganese and aluminum dust may be harmful to someone that works in the waste material for more than 60 days per year, though concentrations are not significantly different from what is naturally found in that area.
- Groundwater with high levels of aluminum, cadmium, cobalt, copper, iron and manganese (shown in Figure 1) is not acceptable for drinking.

ECOLOGICAL RISKS

Ecological risk assessments determined the likelihood, nature, and severity of harmful effects to aquatic (US EPA, 2008) and terrestrial (Nobis, 2010) habitats as a result of contaminants at the Site. Impacted surface water areas are shown in Figure 1. The major findings are as follows:

- Acid rock drainage has caused a severe risk for the benthic and fish communities in Ely Brook and Schoolhouse Brook, significant portions of which fail Vermont Water Quality Standards.
- Eroded mine waste in the sediment of Schoolhouse Brook and the East Branch of the Ompompanoosuc is harmful to benthic organisms (organisms that live in or just above the sediment). Copper concentrations in the water may also be harmful to insectivorous birds (tree swallows) and insectivorous mammals (bats).
- There is a severe risk to amphibians in the two lowermost beaver ponds (Ponds 4 and 5). Pond 5 also showed a severe risk to benthic and water-column invertebrates.
- High levels of cadmium and copper in a vernal pool in the Slag and Smelter Area may be harmful to the aquatic communities and amphibians.
- High levels of copper and zinc might be harmful to plants and organisms in the soil.

CLEANUP OPTIONS

EPA is currently considering implementing a

cleanup action in phases or "Operable Units." This enables cleanup to move forward in some areas of the Site while allowing more time to better understand other areas of the Site. The Feasibility Study presents cleanup options that will address human health and ecological risks for the first Operable Unit at the Site. These options are evaluated based on how well they meet cleanup goals and whether they comply with federal and state regulations.

NEXT STEPS

The proposed cleanup plan will be presented to the community in June or July 2011. The plan will summarize key information from the five reports discussed above, as well as identify EPA's preferred cleanup alternative for the Site.

EPA wants to hear from you before making a final decision on how to protect your community, so you will have a period of 30 days after the plan is issued to let us know if you have any concerns or preferences regarding the proposed cleanup alternative. EPA is assembling the 5 reports discussed in this factsheet and other supporting documentation into an Administrative Record that will be available for review at the Vershire Town Office and EPA Record Center in Boston prior to the start of the public comment period. You don't have to be a technical expert to comment. Comments can be sent by mail, e-mail, or fax. People also can offer oral or written comments at the formal public hearing (look at the plan for the date).

If you have any questions about the cleanup action, please contact the EPA Project Manager, Edward Hathaway or the EPA Community Involvement Coordinator, Pam Harting-Barrat (see front).



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Important update