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Foote Mineral Company

East Whiteland Township,
Pennsylvania

CERCLIS #PAD077087989

Site Exposure Potential

The 43-hectare Foote Mineral Company site is north of the intersection of Routes 202 and 30 in East Whiteland Township, Chester County, Pennsylvania (Figure 1). The site is approximately 800 m north of Valley Creek, which discharges to the Schuylkill River 15 km downstream in Valley Forge National Historical Park. The Schuylkill River flows into the Delaware River 45 km further downstream.

Established in 1942, the mineral company has manufactured solution and anhydrous forms of lithium halides and processed lithium metal.

From 1932 to 1944, the site was a limestone quarry and processing site. At least seven disposal and waste storage areas used for effluent and liquid/slurry disposal and storage were identified at the site (Pennsylvania Department of Environmental Resources [PADER] undated).

The site is relatively flat with a slight southward grade toward Valley Creek. Groundwater and surface runoff are the potential pathways by which contaminants from the site could migrate to NOAA trust habitats. A soil profile at an on-site well indicated descending layers of clay,

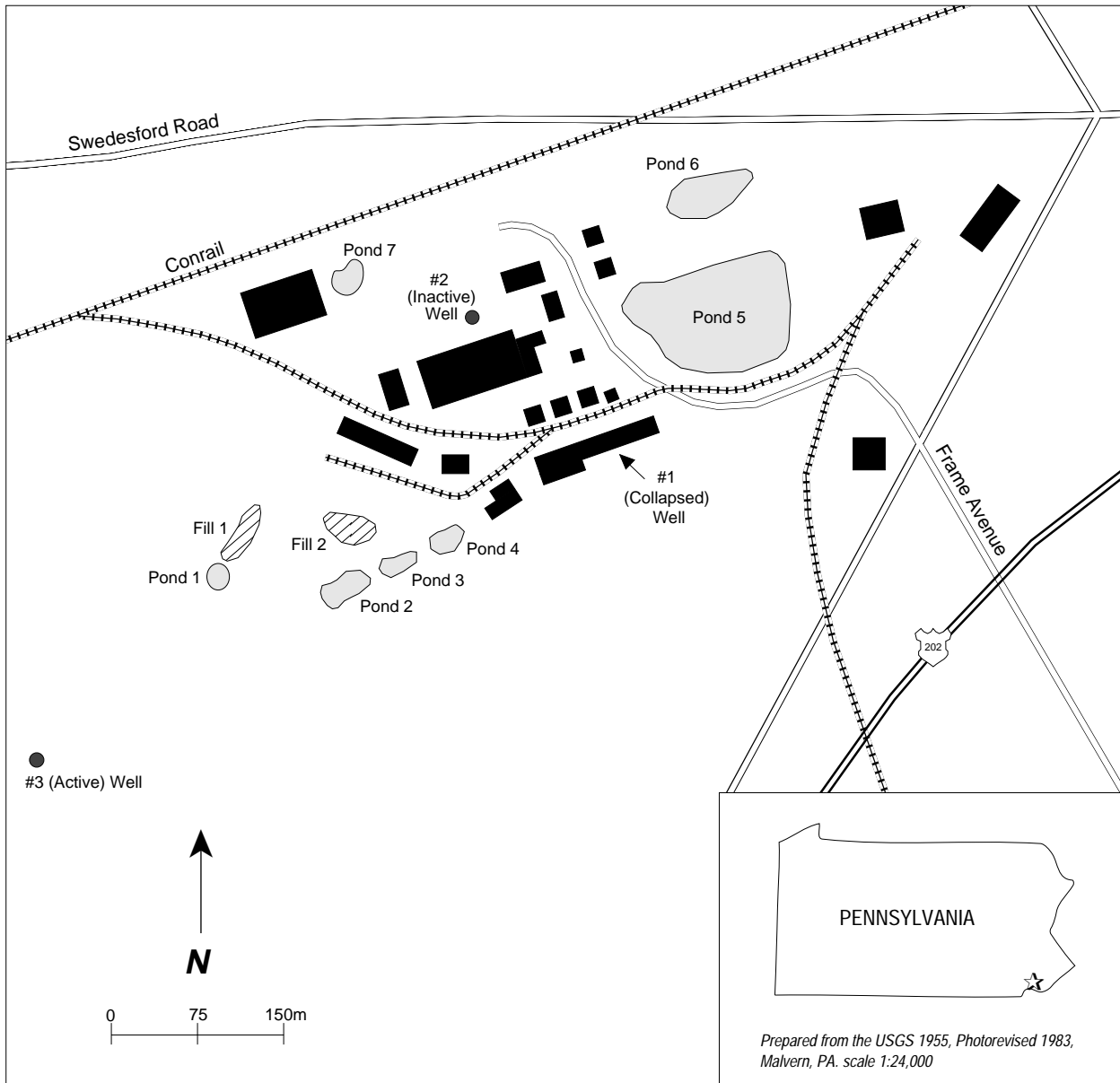


Figure 1. The Foote Mineral Company in East Whiteland Township, Pennsylvania, showing pond and fill areas of the site (PADER undated.)

sandstone, and limestone. Although no groundwater studies have identified the aquifers, water was struck at 24 m, 62 m, and 94 m during the drilling of an on-site well (PADER undated).

Information on the rate or direction of groundwater flow beneath the site was not available. The slight grade from the site toward Valley Creek suggests that surface runoff could flow from the site into the creek, but this has not been confirmed.

NOAA Trust Habitats and Species

The primary habitat of concern to NOAA is the Schuylkill River. Secondary habitats of concern include Valley Creek and its associated riparian wetlands. At its confluence with Valley Creek, the Schuylkill River is approximately 110 m wide and 1 to 2 m deep, with a cobble and silt substrate. Although the upper portions of the Schuylkill River are classified as a “scenic river” (Arnold personal communication 1993), the river is considered the most heavily used water body for wastewater assimilation in Pennsylvania. Moreover, high levels of agricultural runoff affect the river. The river is thus generally considered to have low water quality (Soldo personal communication 1990; Kaufmann personal communication 1992). Schuylkill River substrate is predominantly gravel/cobble in riffle reaches and silt in pool reaches. There are heavy aquatic plant beds throughout the river, with the dominant plant species being Eurasian water milfoil (*Myriophyllum spicatum*) and pickerel-weed (*Pontederia cordata*). There are no appreciable wetlands near the site (Kaufmann personal communication 1992).

During a NOAA site visit in the spring of 1990, Valley Creek was less than 1 m deep, clear, and swift-flowing with a sand and gravel substrate (Craig personal communication 1990). The Valley Creek stream corridor is lined with narrow bands of wetlands, primarily of palustrine deciduous forested scrub shrub, palustrine emergent,

and riverine open-water types (Tiner 1984; EVS Consultants, Inc. 1990).

The four dams on the Schuylkill River downstream of the confluence with Valley Creek (Norristown Dam [11.5 km], Plymouth Dam [17.5 km], Flatrock Dam [25.5 km], and Fairmount Dam [38 km]) eliminate natural anadromous fish migration into this reach of the river. Sampling data gathered between 1983 and 1984 corroborated this assertion (Soldo personal communication 1990). Only Fairmount Dam has fish passage facilities. Because of legal and financial complexities associated with government ownership of Flatrock and Plymouth dams, scheduled improvements to these dams have been delayed and will probably not be pursued for five to ten years (Ellam personal communication 1992). Restoration of the Plymouth Dam would involve breaching the structure. Restoration of the Flatrock Dam would involve installing fish ladders and hydraulic heads suitable for fish passage (Kaufmann personal communication 1990). Should financial resources be allocated and these dams restored, the Philadelphia Electric utility would install a fish ladder at their Norristown Dam. The U.S. Fish and Wildlife Service stocks American shad above the Fairmount Dam as part of their Susquehanna Anadromous Fishery Restoration Project, but this effort is not permanent (St. Pierre personal communication 1992).

Catadromous American eel are the only NOAA trust resource potentially at risk. Although American eel were not found in Valley Creek during sampling by the Pennsylvania Fish Commission in 1984, the Commission observed the species in the Schuylkill River between Norristown and Perkiomen Creek (1 km upstream from the Valley Creek confluence) in 1983 (Table 1; Kaufmann personal communication 1990; Soldo personal communication 1990). This information suggests that American eel could migrate near the site.

A consumption advisory is in effect for the Schuylkill River due to high concentrations of PCBs, chlordane, and DDT. American eel are the only NOAA trust resources included in the advisory. Below the Flatrock Dam, game limits are imposed for the recreational landings of American shad, striped bass, white perch, and several warmwater species. No federally protected species are known to frequent nearby habitats of concern.

Site-Related Contamination

On-site and residential groundwater wells were sampled for chromium and lithium during preliminary investigations of the Foote site. Chromium (170 to 200 µg/l) was detected in only one groundwater well (the Gross well) at concentrations exceeding its freshwater chronic AWQC (11 µg/l) by a factor greater than 15 (U.S. EPA 1986). Although lithium was also detected in groundwater samples (up to 12,500 µg/l), there are no screening guidelines for this substance (PADER undated). The effect of low concentrations of lithium on aquatic life is unknown.

Table 1. NOAA trust resources that use the Schuylkill River and Valley Creek.

Common Name	Scientific Name	Spawning Ground	Nursery Ground	Adult Forage
CATADROMOUS SPECIES				
American eel	<i>Anguilla rostrata</i>			◆
<u>Historical Fisheries that may be Restored</u>				
Blueback herring	<i>Alosa aestivalis</i>	◆	◆	◆
Alewife	<i>Alosa pseudoharengus</i>	◆	◆	◆
American shad	<i>Alosa sapidissima</i>	◆	◆	◆
Striped bass	<i>Morone saxatilis</i>	◆	◆	◆

References

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