

Shieldalloy Corp.

New Jersey

EPA ID#: NJD002365930

EPA REGION 2

Congressional District(s): 02

Gloucester
Borough of Newfield

NPL LISTING HISTORY

Proposed Date: 9/8/1983

Final Date: 9/21/1984

Site Description

The 67.5 acre Shieldalloy Metallurgical Corp. site houses specialty plant where formerly chromium alloy and other products have been produced. Past disposal practices included the release of process wastewater directly to an unlined lagoon, causing groundwater contamination. This resulted in extensive chromium contamination in an area that is dependent upon groundwater for drinking supplies. In 1970, Shieldalloy Metallurgical Corporation (SMC) replaced the unlined lagoon with a series of lined surface impoundments to treat the chromium-contaminated wastewater. In 1979, SMC constructed a plant for the treatment of chromium-contaminated groundwater. Since 1979, the plant has treated contaminated groundwater prior to discharge into the Hudson's Branch Tributary of the Maurice River. In 1998, SMC removed and disposed of the contaminated chromium sludge from the lined surface impoundments. There are slag piles and other wastes on site, including low-level radioactive wastes that are licensed by the Nuclear Regulatory Commission (NRC). There are approximately 56,000 people living within a 2-mile radius of the site. The closest residence is located less than 1/5 mile away. Private wells are located within a mile of the site. Private and municipal wells in the vicinity of the site have been shown to be contaminated with chromium and volatile organic compounds (VOCs). Because of this, a well restriction area was established in the area in 1986. The private wells affected by chromium are within the well restriction area, and the residents within the restricted area have all been connected to the public water supply. Therefore, residents are not exposed to contaminated groundwater. A municipal well affected by chromium was used only for non-contact cooling water and never as a potable source. This well is no longer in service. Another municipal well is affected by VOCs, but groundwater from this well is treated prior to distribution.

Site Responsibility: This site is being addressed through a combination of Federal, State, and potentially responsible parties' actions

Threat and Contaminants

Both on- and off-site groundwater is contaminated with VOCs and chromium. Soil is contaminated with heavy metals. The Hudson's Branch Tributary of the Maurice River contains heavy metals. Off-site threats to health include drinking or direct contact with groundwater and surface water, inhaling contaminated air particles, and eating contaminated fish from the nearby surface waters.

A waste pile or slag pile comprised of slag and baghouse dust containing low-level radioactive waste is present on the site. Threats posed by this material are currently being evaluated by the NRC. The entire production area of the site, including the waste pile area is fenced.

Cleanup Approach

The site is being addressed in three stages: initial actions and two long-term remedial phases focusing on cleanup of the groundwater contaminant plume, and soil and sediment contamination at the facility. The NRC is working with SMC to address low-level radioactive waste material.

Response Action Status

Initial Actions: The potentially responsible party (PRP), SMC, has been pumping and treating chromium-contaminated groundwater since 1979. The initial pump and treat system was designed to pump and treat 80 gallons per minute (gpm) of contaminated groundwater. In 1989, SMC built a new ion exchange treatment facility to pump and treat 400 gpm of contaminated groundwater. However, technical problems with the ion exchanger prevented the facility from operating at design capacity. In 1992, SMC installed an electrochemical treatment unit which is effectively treating the groundwater

contamination.

Groundwater Plume: The PRP completed a study of the chromium contaminant plume. During this study, in addition to chromium, VOC contamination was detected in groundwater underneath and downgradient of the Shieldalloy Corporation facility. In September 1996, the Environmental Protection Agency, in consultation with New Jersey Department of Environmental Protection (NJDEP), issued a Record of Decision (ROD) which selected a remedy for the groundwater contaminant plume. The selected remedy calls for modification of the existing groundwater remediation system to provide for the complete capture and treatment of groundwater contamination, the installation of an air stripper to remove VOCs, and the incorporation of the electrochemical unit into the remedy to remove metals. Further delineation is needed to fully define the extent of chromium and VOC contamination. The delineation work is currently being conducted as part of remedial design activities. NJDEP expects to complete the remedial design of the remedy in 2009.

Source Control: The PRP, under NJDEP oversight, has performed a study concerning the nature and extent of soil and sediment contamination at the site. In April 1996, the PRP prepared a draft Feasibility Study (FS) to address the soil, sediment, and surface water contamination at the site. Several alternatives for addressing the soil, sediment, and surface water contamination were presented in the Feasibility Study, however, the FS was not acceptable to EPA and NJDEP. The PRP is currently collecting additional data to fully define areas of the site where the soil is contaminated with a mixture of contaminants and to further characterize soil, sediment and surface water contamination. Following the completion of this work, a supplemental FS will be prepared to address these media.

NRC's Regulated Slag Pile: In June 2006, Shieldalloy Corporation submitted a Decommission Plan to NRC for review. The plan outlines Shieldalloy's proposal to decommission the slag pile by capping the radioactive material on-site. NRC is currently performing a technical review of this plan. NRC expects to complete this technical review in approximately two years. In 2007, EPA completed its technical review of the plan and provided its input to the NRC.

Site Facts: In 1984, the NJDEP and the PRP entered into an Administrative Order on Consent requiring the PRP to prepare a study of the site's groundwater contamination and to develop systems to address the plume. In 1986, the State directed the PRP to improve its groundwater decontamination system by modifying and upgrading it and expanding the groundwater monitoring program. In 1988, the NJDEP and Shieldalloy Corp. signed an Administrative Order on Consent which required SMC to implement an upgraded groundwater pump and treat system, to perform a site-wide study, and provide for closure of nine surface impoundments. In February 2006, NJDEP entered into a revised Administrative Order with SMC, as well as another party, TRC, for the completion of all Superfund cleanup activities at the Site.

Cleanup Progress

The initial treatment of contaminated groundwater has reduced the threat to human health and the environment by mitigating migration of contaminated groundwater while studies leading to the final selection of cleanup technologies for the Shieldalloy Corporation site are taking place. The existing groundwater pump and treat system is currently treating approximately 400 gallons per minute of contaminated groundwater. The installation of the air stripper, the electrochemical treatment unit, and the closure of the surface impoundments will reduce some potential risks posed by the contaminated groundwater by partially capturing and treating the groundwater contamination at the site. Furthermore, connecting residences with private potable wells to the municipal water supply ensured that residents are not exposed to site-related groundwater contamination while cleanup of the site continues. The site is entirely fenced to limit access.

SMC has completed the closure of on-site surface impoundments, which included the removal and off-site disposal of approximately 5,445 tons of dewatered chromium sludge. In addition, approximately 1,385,000 gallons of chromium contaminated filtrate from the dewatering process were treated in the on-site groundwater treatment plant prior to discharge to the Hudson's Branch in accordance with SMC's New Jersey Pollutant Discharge Elimination System Discharge permit.

Site Repositories

USEPA Records Center 290 Broadway, 18th floor New York, NY 10007-1866 (212) 637-4308