



Kearsarge Metallurgical Corporation Site Conway

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The Kearsarge Metallurgical Corporation (KMC) Site is located on the northern bank of Pequawket Pond in Conway Village, New Hampshire. Between 1964 and 1982, KMC manufactured stainless steel metal castings. Investigations by NHDES revealed that for many years waste materials generated during the casting process had been improperly stored and disposed on-site.

In 1982, approximately 54,000 pounds of corrosive solids, 17,800 gallons of acids and 600 gallons of flammable liquids, including industrial solvents, were removed from the Site by the potentially responsible parties (PRPs). Monitoring wells were installed, and the sampling results confirmed the presence of volatile organic compounds (VOCs) in the groundwater. The PRPs subsequently abandoned the property.

In September 1984, the Site was added to the National Priorities List. The remedial investigation and feasibility study was completed in June 1990. EPA issued a Record of Decision (ROD) in September 1990 that defined two cleanup remedies: (1) removal of the “waste pile” and, (2) construction and operation of a groundwater extraction and treatment system.

In 1992, 13,621 tons of casting sand and soil were excavated and disposed at an off-site landfill. Approximately 30 to 40 cubic yards of contaminated soil was excavated from the former septic tank and leach field system and transported to a licensed hazardous waste disposal facility.

The design and construction of the groundwater extraction and treatment system was completed in 1994. In the fall of 1994, NHDES awarded a contract for the operation and maintenance of the groundwater treatment plant. In the fall of 2000, the treatment plant operations were modified by installing an extraction trench in the “culvert area” to enhance the groundwater extraction and reduce the cleanup time for achieving cleanup standards in groundwater. Pumping of the Hobbs Street extraction wells was discontinued in February 2004, when the acquisition of sufficient analytical data documented attainment of cleanup standards and supported shutting down the Hobbs Street wells.

In 2002, NHDES’s contractor completed a site characterization and cleanup assessment at the Site to optimize the cleanup action and reduce the time necessary to operate the groundwater treatment facility. A previously undetected area of concentrated soil contamination that exceeded the State’s soil leaching standards was discovered during this assessment. Left in place, this contaminated soil would continue to impact groundwater and lengthen the time required to achieve cleanup goals by approximately 48 years. As a result, EPA and NHDES concluded that it would be most cost effective for the contaminated soil to be excavated and disposed in an off-site permitted landfill where the soil would not pose a risk to the

groundwater. This source removal action began in October 2003 and was completed in January 2004 removing approximately 5,670 tons of chlorinated solvent-impacted soil.

Evaluation of the effectiveness of the source removal action to reduce groundwater contaminants in the culvert area subsequently began. Beginning in March 2004, samples collected from the remaining extraction well began a steep downward trend, no longer exceeding the cleanup standard for the primary Site contaminant of concern, 1,1,1-trichloroethane (TCA), and, by 2005, groundwater concentrations approached non-detect for all volatile organic compounds (VOCs).

In December 2005, the decision was made by NHDES, with EPA concurrence, to discontinue extraction and treatment of the groundwater. The decision to shut down the system was supported by sampling data showing that the extracted water met cleanup standards. The mass of VOCs that was being removed, relative to the volume of water being extracted, was low.

Following the shutdown of the groundwater treatment plant, contamination levels in groundwater rebounded and the plume of contamination expanded within the boundaries of the Site. However, in 2008 the groundwater plume began to contract as the rebound affect diminished and the plume stabilized. Vertical profiling investigations were performed in 2008 and confirmed the presence of a residual source area located within the low-permeability soils along a portion of the northern boundary of the former soil excavation area.

EPA's 2008 Third Five Year Review for the Site deferred a protectiveness statement until further information was obtained. Additional informational needs included: (1) evaluation of the potential for site-related contaminants to migrate into existing Site buildings via vapor migration; (2) evaluation of options to implement institutional controls to establish protective mechanisms that will ensure that the public is not exposed to Site contaminants via consumption of groundwater or direct exposure to residual contamination in Site soils; (3) an evaluation of monitored natural attenuation as a remedy; and (4) an EPA decision document to allow for a remedy change from active pumping and treatment of groundwater to monitored natural attenuation.

An evaluation of the potential for site-related contamination to migrate into buildings via vapor migration was presented in a 2009 Letter Report with findings concluding that the groundwater plume at the Site does not pose a risk of vapor intrusion into any buildings on or near the Site.

The Site properties were abandoned by previous owners. Given the difficulty of establishing institutional controls on abandoned properties, the New Hampshire Department of Justice obtained an order from the New Hampshire Superior Court that provided for the implementation of activity and use restrictions on the abandoned properties. The Court Order and original and amended Activity & Use Restrictions were recorded at the Carroll County Registry of Deeds on March 19, 2010, August 30, 2011, and March 29, 2013, respectively.

Monitored natural attenuation (MNA) as an alternate remedy was evaluated in a January 2012 Focused Feasibility Study (FFS) which provided the basis for a May 8, 2012, Proposed Plan that selected MNA as the preferred remedy to be adopted at the Site. The Proposed Plan was finalized in a September 2012 Amended Record of Decision (AROD). Because MNA is not an active remedy and may not achieve cleanup levels at the Site in a reasonable timeframe, a phased contingency approach was developed in the AROD. Based on defined trigger conditions,

the AROD called for in-situ chemical oxidation (ISCO) to subsurface soils that will destroy contaminants on contact, should conditions warrant.

Upon the groundwater extraction and treatment remedy being changed to MNA, the treatment plant contents, and building were no longer needed for remedy implementation. In March 2012, EPA concurred with NHDES' approach to allow transfer of the treatment plant building, remaining contents, and property to the Town of Conway upon their 2012 taking of the two Site parcels through a tax deed. After the 2012 tax deed, the Town of Conway performed demolition of the majority of the dilapidated metallurgical building and recycled the contents of the former treatment plant. The property was sold in spring 2014. The new owner has leased the former treatment plant building to a truck maintenance business and has made improvements to the remaining standing structure of the former metallurgical site building for office space in support of a vehicle impoundment yard and a heating service business.

[EPA's 2013 Forth Five-Year Review](#)¹ found the remedy protective of human health and the environment in the short-term because there are no complete exposure pathways. To remain protective in the long-term, several follow-up actions were identified, including, but not limited to, a requirement that ISCO, the contingent remedy, as specified in the 2012 AROD, be evaluated for application in the residual source area previously mentioned. Following the evaluation, NHDES, in consultation with EPA, concluded that further source reduction via the ISCO remedy would significantly shorten the time frame to achieve cleanup levels.

NHDES worked with an engineering consultant to design and implement the ISCO remedy in 2015. The project attained substantial completion in October 2015. Overall, the ISCO/soil mixing remedy has resulted in a significant reduction in groundwater contaminant concentrations at the Site. Low level contaminants continue to be present at levels greater than the cleanup criteria at two Site monitoring wells. Concentrations are expected to attenuate over time as treated groundwater from the ISCO/soil mixing area migrates toward downgradient wells.

EPA's [2018 Fifth Five-Year Review](#)² found the remedy protective of human health and the environment and identified no issues or recommendations to be acted upon. The protectiveness statements concluded that three separate groundwater remedies have been implemented in overburden groundwater over the past 25 years, removing more than 99% of the groundwater contamination at the Site.

In 2021, NHDES worked with an engineering consultant to investigate areas of residual contamination outside of previously remedied areas. The objectives of this soil and groundwater investigation were to identify areas that may require supplemental remediation work to attain the groundwater cleanup objectives in all monitoring wells at the Site and prepare the Site for delisting. The areas investigated during the May 2021 soil and groundwater monitoring event were outside of the 2003 source removal excavation area and the 2015 in situ chemical oxidation (ISCO)/soil mixing area. The investigation revealed a location where vinyl chloride (VC) was detected in a low permeability aquitard in excess of the GW-2 Groundwater

¹ <https://semspub.epa.gov/work/01/536329.pdf>

² <https://semspub.epa.gov/work/01/100010202.pdf>

to Indoor Air Screening Level within 50 ft of an existing occupied building. A new monitoring well installed to assess the potential for vapor intrusion found that the levels of VC in groundwater did not support a complete exposure pathway to indoor air of the adjacent building. The new well installed for this assessment will continue to be monitored as part of the Site monitoring program. In addition, the 2021 investigation identified the presence of low-level residual contamination that resides in low-permeable soils (e.g., clays and silts) outside the areas previously remediated. While it will likely take some time for this residual contamination to attenuate, the limited extent of contamination in the subsurface combined with existing institutional controls that manage potential exposure risk, and the presence of public water service to the surrounding properties, the agencies determined it impractical to further remediate the residual contamination. Regularly scheduled groundwater and surface water monitoring will continue at the Site. [EPA's Sixth Five Year Review](#)³ completed in 2023, concluded that the remedy remains protective of human health and the environment.

³ <https://semspub.epa.gov/work/01/100026699.pdf>