

Nuclear Metals, Inc. Site Concord, MA

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.

INTRODUCTION:

The final phase of the multi-phase cleanup at the Nuclear Metals, Inc. (NMI) Site has been initiated. This final phase is called the "Remedial Design/Remedial Action". The United States Environmental Protection Agency (USEPA) and the Massachusetts Department of Environmental Protection (MassDEP), will oversee the Remedial Design/Remedial Action.

BACKGROUND:

NMI was located at 2229 Main Street in Concord, MA. From 1957 to October 1972, NMI was owned and operated by a succession of companies that engaged in specialty research. In September 1972, NMI employees purchased the operation and shifted focus to large-scale production of depleted uranium (DU) armor penetrators, other DU products, and beryllium alloy parts. NMI was renamed as "Starmet Corporation" in 1997. Manufacturing operations resulted in significant contamination of equipment and to the interior of the buildings, as well as to soil, sediment, and groundwater at the 46-acre property. The Site was placed on the National Priorities List in June 2001, triggering further investigation and interim or "removal" actions by EPA and MassDEP. To date, removal actions placed interim covers on the "Holding Basin" and "Old Landfill" areas (2001), installed perimeter fencing (2002), removed DU drums and other materials from the buildings for off-site disposal (2005-2007), removed hazardous and flammable materials from the buildings for off-site disposal (2008), removed all remaining contents from the buildings prior to demolishing them, with off-site disposal of all materials (2011-2016), and installed and operated a pumping system with ex-situ treatment to capture and clean site-related contaminated groundwater migrating towards the Acton municipal water supply wells (2016 to present).

A comprehensive investigation of the extent of contamination (the "Remedial Investigation" or "RI") and evaluation of remedial alternatives (the "Feasibility Study" or "FS") began in 2004 and was completed in 2015. In September 2015, EPA issued a "Record of Decision" (ROD) selecting

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a \$125 million remedy for the site. The ROD generally includes the following components:

- Excavation and off-site disposal of approximately 82,500 cubic yards of contaminated concrete, asphalt, soil and sediment.
- In-situ stabilization of DU contaminated soils in the Holding Basin using apatite injection, and containment of the stabilized soils with a low-permeability vertical wall and cover.
- Extraction and ex-situ treatment of groundwater for volatile organic compounds (VOCs) and 1,4-dioxane.
- In-situ treatment of DU in overburden groundwater and natural uranium in bedrock groundwater (these plumes are within the 2229 Main Street property).
- Long-term monitoring to monitor the effectiveness of in- and ex-situ treatment.
- Institutional Controls to prevent disturbance of the Holding Basin area, prevent the use of Site groundwater, and address potential vapor intrusion risks.

The ROD also addressed acceleration of the remedy component addressing extraction and treatment of groundwater impacted by VOCs and 1,4-dioxane, as those contaminants pose a threat to municipal water supply wells. This accelerated process was conducted as the groundwater removal action discussed above.

REMEDIAL DESIGN/REMEDIAL ACTION:

On October 17, 2019, the USEPA lodged a Consent Decree (CD) with the United States District Court for the District of Massachusetts in connection with Civil Action No. 19-12097-RGS. The CD was entered by the Court on December 6, 2019. The CD and its accompanying Statement of Work (SOW) describe the Remedial Design/Remedial Action (RD/RA) activities to be performed for the Nuclear Metals, Inc. (NMI) Superfund Site in Concord, Massachusetts. The RD/RA activities are to be undertaken by the Settling Defendants (SDs) to the CD, with funding contributions from the Settling Federal Agencies (SFAs).

The RD/RA will proceed under EPA oversight as a systematic process that will be defined by a series of technical reports, studies, and remedial work, which will include:

- Remedial Design Work Plan (RDWP). The RDWP will provide an overview of the project goals and requirements and will include detailed appendices that will address plans for: Health and Safety, Emergency Response, Field Sampling, Quality Assurance, Pre-Design Investigations (PDIs), and Treatability Studies (TS).
- PDIs and TS are performed to provide information necessary for the design.
- The Preliminary or "Conceptual" Design will include a "Transportation and Disposal Plan", a "Construction Quality Control/Quality Assurance Plan" (which will describe how compliance with cleanup levels will be determined), and an "Institutional Controls Plan" (which will describe the process to place necessary temporary or permanent deed restrictions).
- The "Pre-Final Design" and "Final Design" reports are then prepared to progressively detail the design of the remedy and refine the associated plans.
- The Remedial Action is then implemented according to the Final Design and documented in a "Construction Completion Report."
- After completion of the Remedial Action, some form of Operations, Maintenance and Monitoring (OM&M) will be needed.

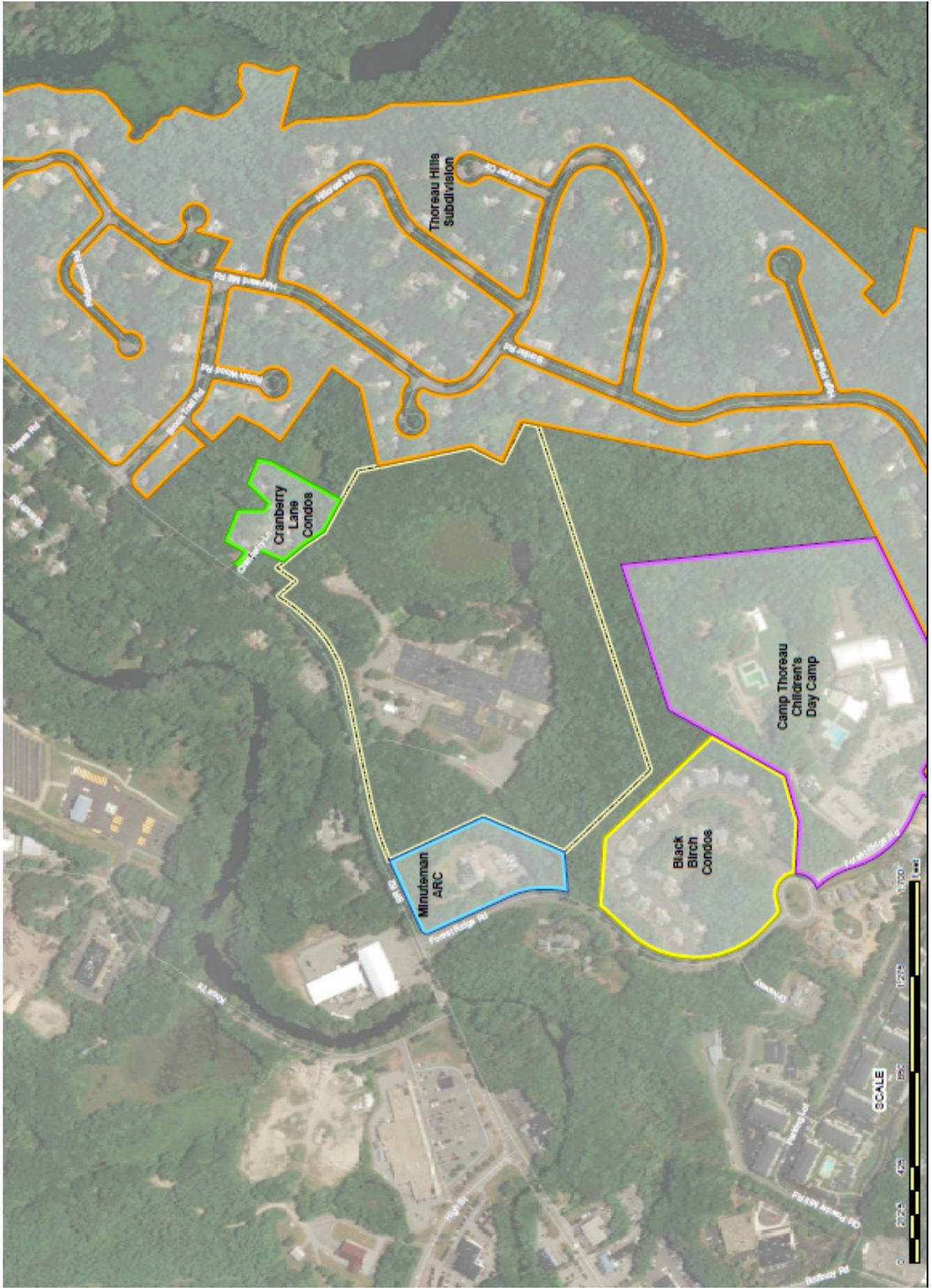
The remedy will be divided into multiple projects, paralleling the components required by the ROD. Each project will proceed on its own track after approval of the RDWP, resulting in separate schedules for pre-design, remedial design, and remedial action until final EPA approval of each Remedial Action report.

The workplans, pre-design, and design process are expected to take several years to complete. Once approved, the remedial work will also take several years to complete. There will be opportunities for interested members of the community to be involved in reviewing the various technical reports.

Through the Superfund Redevelopment Initiative, EPA has been working with the Town of Concord Nuclear Metals Reuse Planning Committee to identify opportunities for future reuse at the site and to gather community input throughout the process. While reuse of the Site is not imminent, planning for potential future reuse will be ongoing during the remedial design phase.



Geographic location of the NMI Site



Aerial view of the NIM Site and surrounding properties