



Status Update: Baird & McGuire Superfund Site Holbrook Board of Health Meeting

October 8, 2024

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U.S. EPA – Region 1

Site Background

- 1912-1983: Baird & McGuire, Inc. operated a chemical mixing and batching facility at the Site.
- 1983: Designated a Federal Superfund Site.
- 1986: EPA issues cleanup plan for groundwater, surface water, and soil.
- 1990: EPA issues final cleanup plan for the Site.
- 1993: Groundwater Treatment Facility (GWTF) completed.
- 1999: First EPA Five-Year Review completed.
- 2004: Commonwealth of Massachusetts assumed sitewide operations and maintenance responsibilities from EPA.

Site Background (continued)

- 2013: EPA remedy optimization review completed.
- 2018: All planned land use controls implemented for the Site.
- 2019: MassDEP updates the Conceptual Site Model (CSM) in support of remedy optimization.
- 2020: MassDEP completed a Shutdown Test for the GWTP.
- 2021: MassDEP initiated field pilot tests for in-situ treatment of arsenic and hydrocarbons in Site groundwater.
- 2023: MassDEP drafted a Focused Feasibility Study (FFS) for Site groundwater.

Five-Year Review (FYR) Process

- Required by law for any Superfund cleanup started after 1986.
- Occurs every five years following the start of remedy construction.
- EPA, with the support of MassDEP, evaluates the “protectiveness” of the selected remedies.
- Stakeholders are invited to join the community interview process.
- The Sixth FYR report was finalized on July 25, 2024, and is available on EPA’s Baird & McGuire webpage (<http://www.epa.gov/superfund/baird>).

2024 Five-Year Review (FYR) Summary

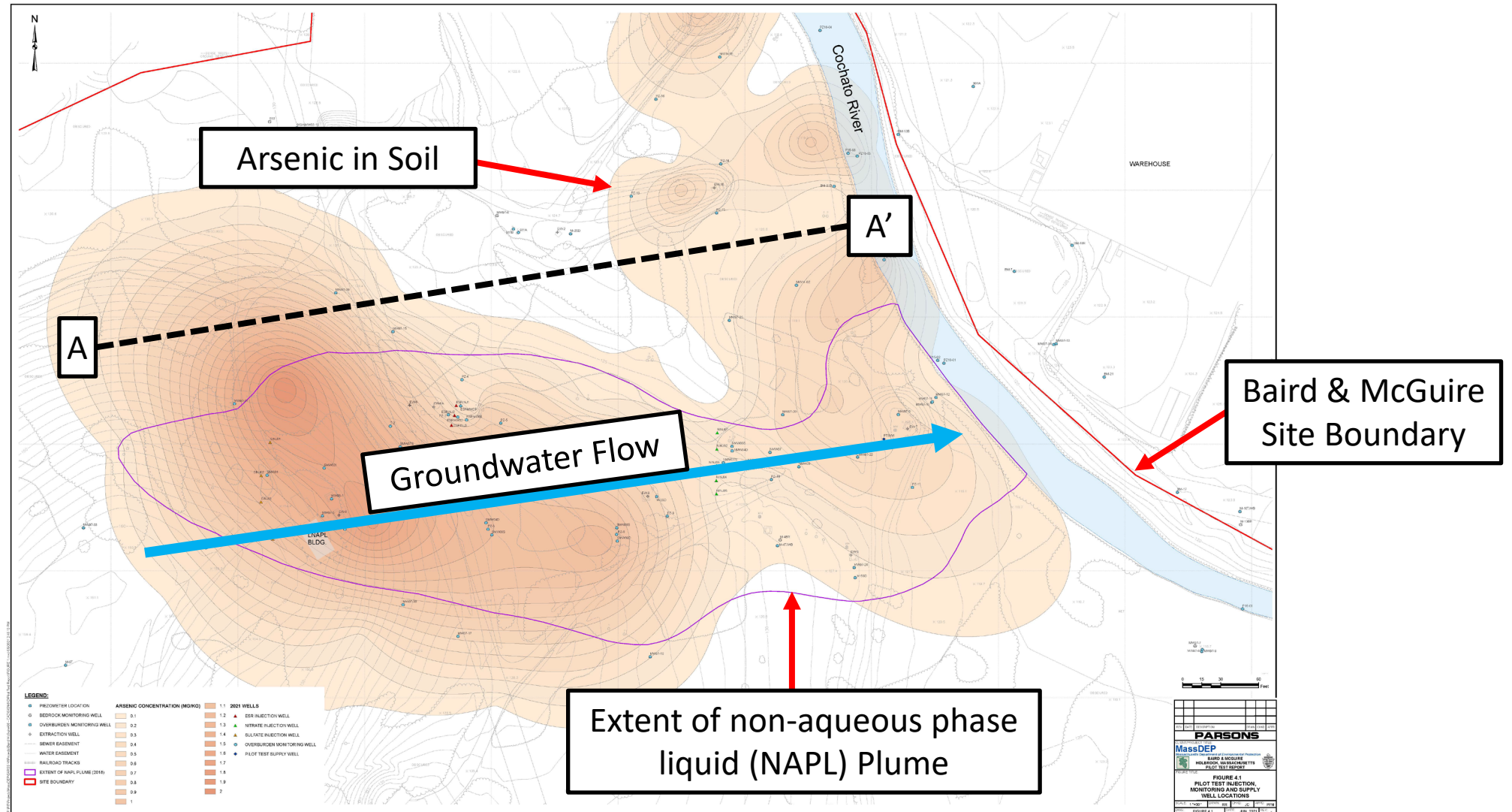
- Protectiveness Statements
 - Operable Unit (OU) 1 – Groundwater: Short-term Protective
 - OU2 – Soils: Protective
 - OU3 – Sediments and Cochato River impacts: Short-term Protective
 - OU4 – Alternate Water Supply: Exempt from FYR process (No Further Action)

Issues	Recommendations
Groundwater cleanup not occurring in reasonable timeframe.	Complete the OU1 FFS and evaluate additional response action(s).
Per- and polyfluoroalkyl substances (PFAS) nature and extent not fully characterized.	Continue monitoring OU1 groundwater for PFAS.
Uncertainty about achieving groundwater cleanup levels.	Evaluate current groundwater cleanup levels for appropriateness.
Possibility of emerging contaminant 1,4-dioxane to be present in site groundwater.	Sample OU1 groundwater for 1,4-dioxane.

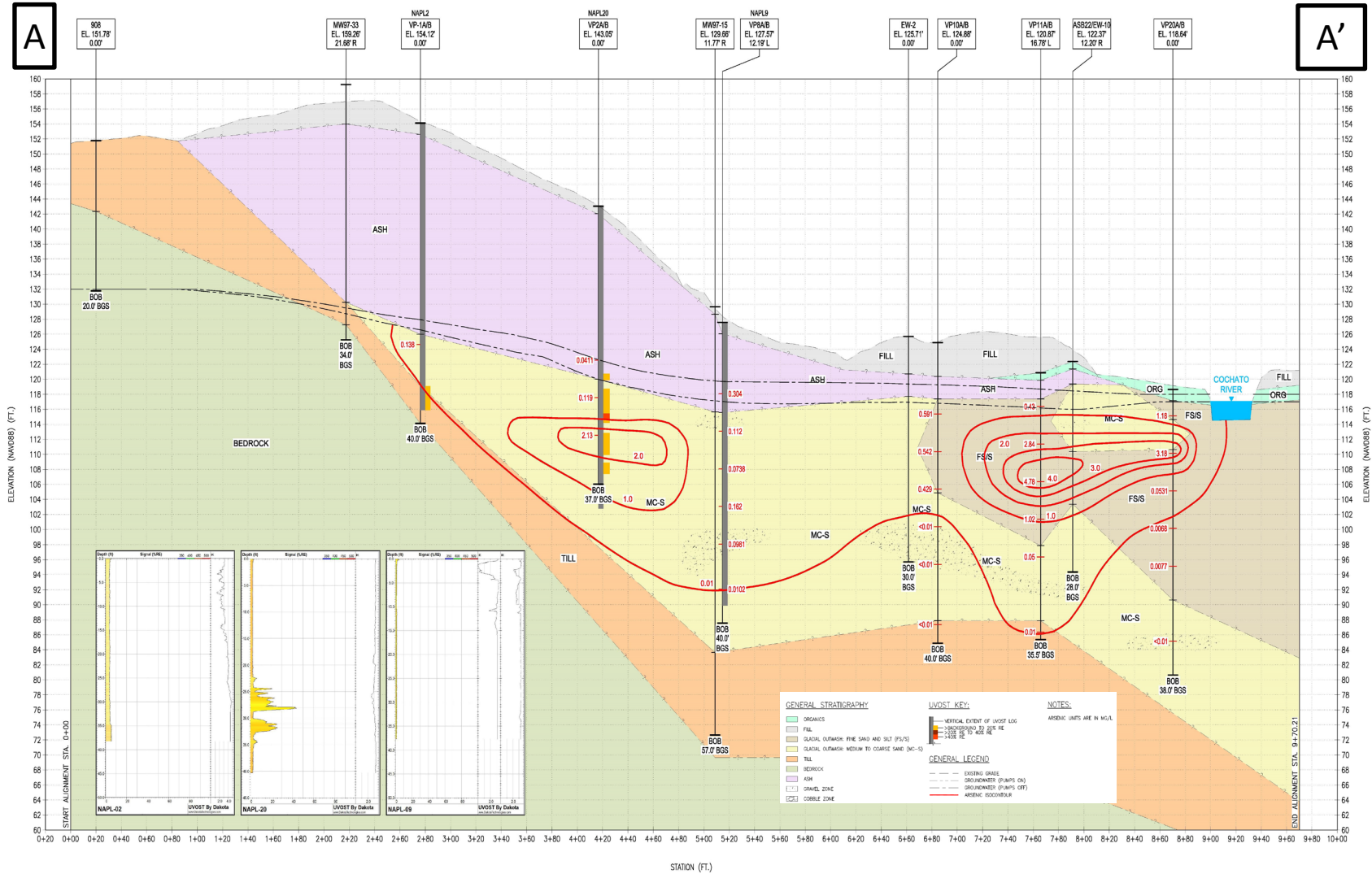
Current Site Status

- The GWTP remains in standby posture.
 - Groundwater and surface water continue to be monitored by MassDEP contractors.
 - The GWTP undergoes regular maintenance and system cycling to ensure readiness if a restart is necessary.
- MassDEP contractors continue to batch and inject sulfate into the OU1 groundwater aquifer.
 - The field Pilot Test was nominally completed in 2022.
 - Routine and Pilot Test-specific groundwater and surface water monitoring is ongoing.
 - Progress reports are submitted to EPA on a regular basis (monthly, quarterly, annually).

Groundwater (OU1) Plume Overview



Groundwater (OU1) Plume Cross-Section



Basic Overview of Piloted Treatment Technologies

Sulfate Amendment

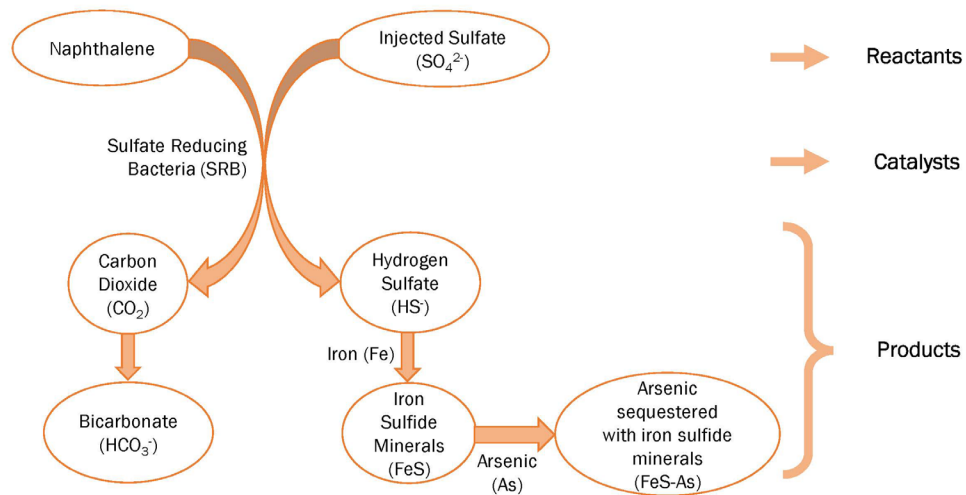


Figure 5.1. Process Reactants, Catalysts, and Products of Sulfate Pilot Test

Enhanced Sulfate Reduction (ESR)

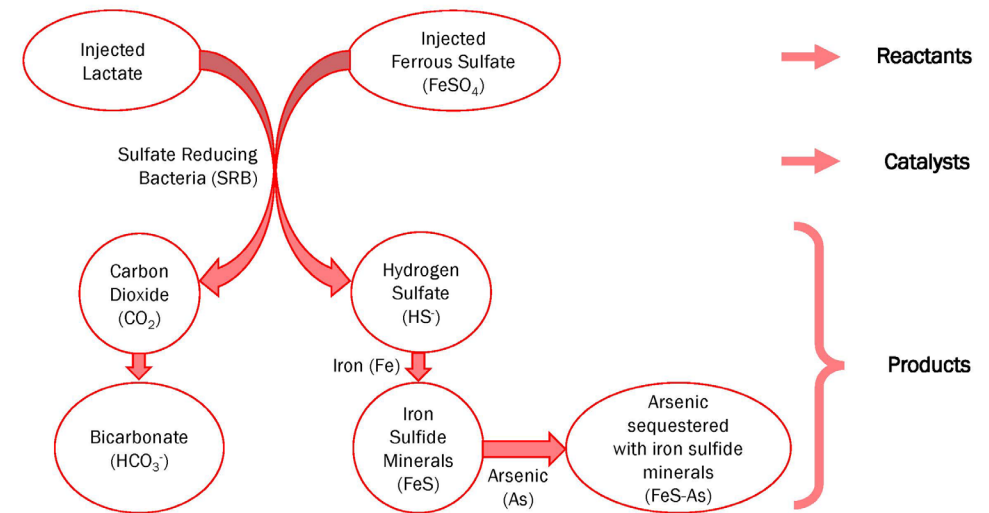


Figure 6.1. Process Reactants, Catalysts, and Products of Enhanced Sulfate Reduction (ESR) Pilot Test

Basic Overview of Piloted Treatment Technologies (Continued)

Nitrate Amendment

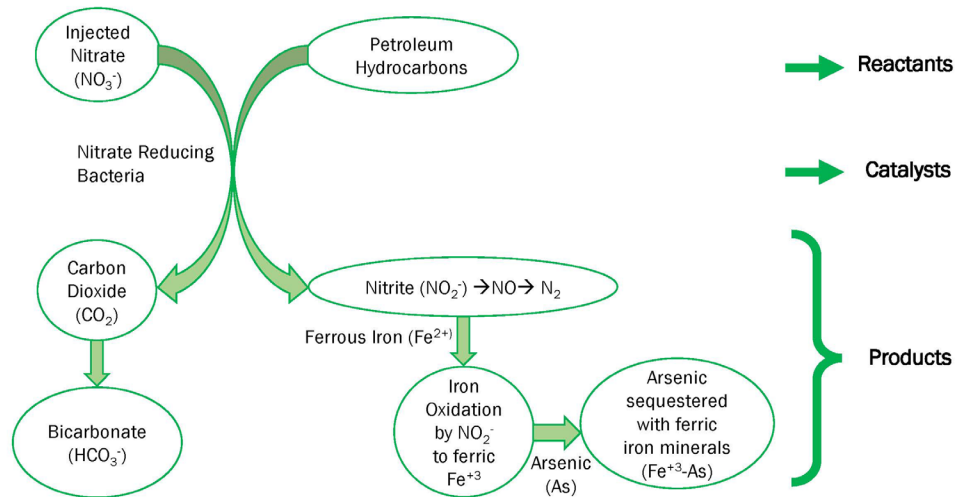


Figure 7.1. Process Reactants, Catalysts, and Products of Nitrate Injection Pilot Test



Photos of Nitrate & Sulfate Pilot Test Infrastructure



Figure 4.6. Photographs of Sulfate and Nitrate Pilot Test Components Outside NAPL Building



Planned Work for 2024/2025

- Field
 - Continue post-Pilot Test maintenance and reporting.
 - Continue Pilot Test-specific groundwater and surface water monitoring.
 - Continue established long-term monitoring program.
 - Continue GWTP maintenance activities.
- Desktop
 - Continue review and revision process for the draft FFS.
 - Begin implementation of FYR recommendations.



Thank You

Questions?

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