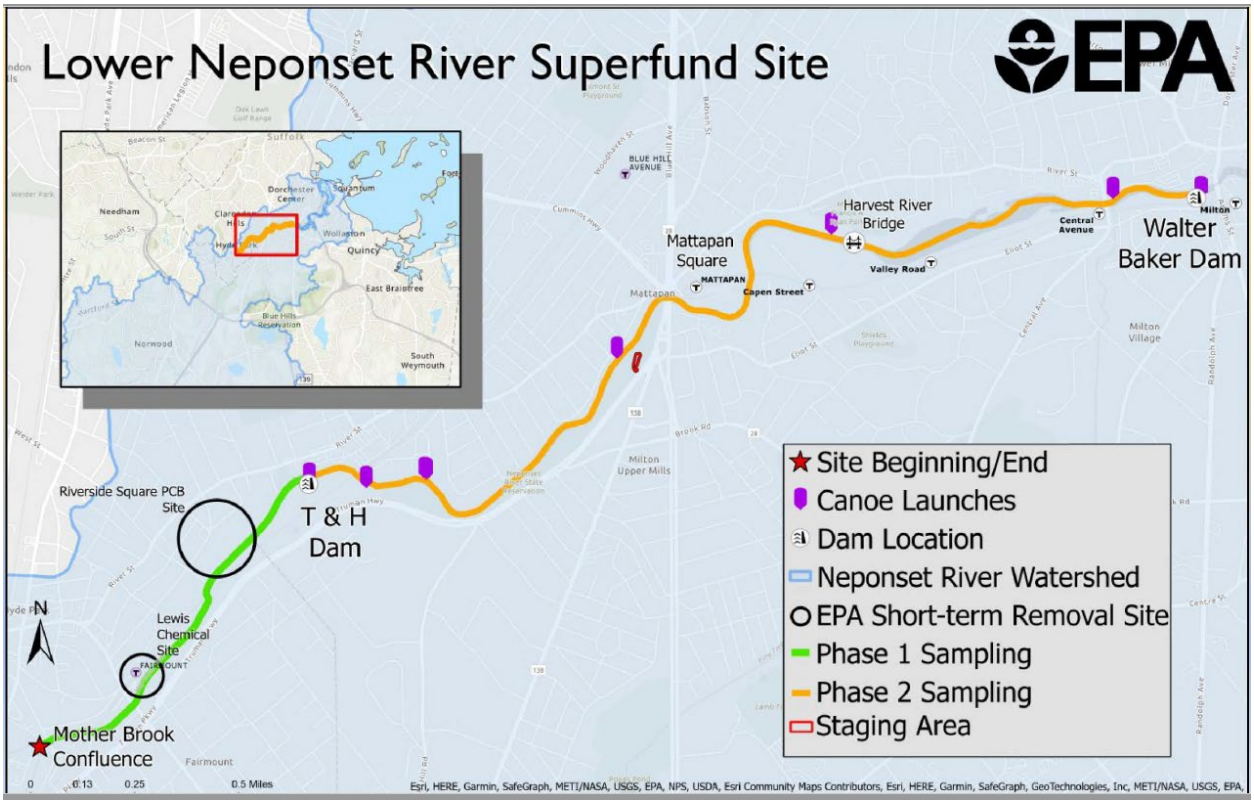
Introduction

This summary provides a very brief overview of the "Data Evaluation Summary Memorandum – Phase 1" document (Phase 1 document) for the Lower Neponset River Superfund Site. The Phase 1 document provides a summary of the Phase 1 sampling activities and associated data analysis results from the samples collected. The data will be used to support the comprehensive Remedial Investigation/Feasibility Study (RI/FS) for the 3.7-mile Site that will be conducted in the future, and to be used for the next steps towards completion of the Engineering Evaluation and Cost Analysis (EE/CA) for the Phase 1 Reach. The EE/CA will support a potential non-time critical removal action (NTCRA) of sediment contaminated with polychlorinated biphenyls (PCBs) within the Phase 1 Reach.

The Phase 1 document is a concise report with approximately 13 pages of text, and 612 pages of Tables, Figures and Attachments. All of the document components (text, tables, attachments and GIS data) are available to the public and can be accessed using the Site Profile web page (https://cumulis.epa.gov/supercpad/cursites/csitinfo.cfm?id=0102204&msspp=med).

Background

The Lower Neponset River Superfund Site (the Site) consists of a 3.7-mile section of the Neponset River between its confluence with the Mother Brook (in Hyde Park, Massachusetts) and the Walter Baker Chocolate Dam (in Dorchester/Milton, Massachusetts). The Phase 1 Reach of the Site includes the upper one mile stretch of the site between the Mother Brook and Neponset River confluence and the Tileston and Hollingsworth (T&H) Dam (Figure).



AECOM conducted activities within the Phase 1 Reach of the Lower Neponset River Superfund Site between June and November of 2023.

Activities completed within the Phase 1 Reach included:

- Sediment coring
- Floodplain soil boring
- Surface water sampling
- Pore water sampling
- Water level monitoring

Phase 1 activities also included the following activities in reference locations (outside of the Site boundary):

- Surface sediment grab sampling
- Surface water sampling

The sampling efforts were designed to accomplish specific Data Quality Objectives as follows;

1. Collect sediment samples for analysis of PCBs and physical properties in areas of known hot spots.
2. Collect sediment samples for analysis of PCBs and physical properties throughout the area of investigation to identify additional hot spots.
3. Use newly collected PCB sediment data as well as historical data, when appropriate, to perform a streamlined risk evaluation. The streamlined risk evaluation will focus on PCBs only and identify current or potential exposures that could be prevented by the implementation of a NTCRA of PCB hot spots in sediment.
4. Collect floodplain soil samples throughout the area of investigation to evaluate the presence or absence of target constituents, evaluate potential data gaps, and support the evaluation of receptor pathways.
5. Collect sediment, surface water, pore water, and floodplain soil throughout the area of investigation and sediment and surface water in reference areas to develop a dataset that can be used to support the comprehensive RI/FS for the 3.7-mile Site, including a risk assessment, that will be completed in the future.

Document Format

The document serves the purpose of being a data summary. The document concisely describes the sampling accomplished for each media (sediment, soils, surface water and pore water), the suites and analysis completed, and a summary of the analytical results. In order to better understand the analytical results, the document relies on the use of Project Action Limits (PALs) for data comparisons. The PALs represent the lowest of the relevant human health and ecological screening levels that may be used in this or later stages of the Remedial Investigation/Feasibility Study process. Analytical results were compared to the PALs for information purposes and the comparison is not an indication of risk. A summary of the PALs relied upon within the Phase 1 document are provided in the below Table.

Media	Human Health	Ecological

Sediment	USEPA regional screening levels (RSLs) for residential soil based on hazard quotient of 0.1 and a target risk level of 1E-06.	USEPA Region 4 ecological screening values for freshwater sediment.
Soil	USEPA regional screening levels for residential soil.	The lower of the ecological soil screening levels for soil invertebrates, plants, birds, and mammals and the USEPA Region 4 soil screening values for invertebrates, plants, birds, and mammals.
Surface Water	The lower of the Massachusetts surface water quality standards, human health criteria for drinking water plus fish and shellfish consumption, Massachusetts maximum contaminant levels, National Recommended Water Quality Criteria for human health for consumption of water and organisms, USEPA maximum contaminant levels, and USEPA RSLs for tap water.	The lower of the Massachusetts surface water quality standards, aquatic life criterion continuous concentration values for freshwater, National Recommended Water Quality Criteria aquatic life criterion continuous concentration values for freshwater, and USEPA Region 4 freshwater chronic screening values.

The document summarizes the results of the data comparisons within the text (by media) and within a series of Tables and Figures. The text clearly describes which analysis results exceed the PALs. The Tables show highlighted results that exceed the PALS, and the Figures show the results by location on aerial maps with the results color-coded in order to understand where the contamination occurs.

Document Results

While the document itself provides a very concise narrative summary within the text, the Attachments provide copies of original field and laboratory analysis records. This 'complete' package enables a reviewer to cross-check and verify the information provided.

Validated results of sediment, floodplain soil, surface water, and pore water are shown in Tables for each media. Summary statistics of the validated results are provided and include the number of samples, number of detections, and minimum, maximum, and average detected values. A summary of key results for sediment and soil is provided below.

Sediment Information:

- 63 sediment cores are collected.
- Sediment samples collected from 0 – 0.5 feet below ground surface showed total PCB concentrations ranging from: <1 ppm to 436 ppm; the maximum concentration is located adjacent to Lewis Chemical; and an average concentration is 37.9 ppm.
- Sediment samples collected from all depths (0 – 6.3 feet) showed total PCBs ranging from <1 ppm to 2,646 ppm; the maximum concentrations are located adjacent to the

Lewis Chemical (0.5 to 3.7ft) and T&H dam impoundment (5 ft – 6ft), and the average concentration is 117 ppm.

Soils Information:

• 109 soil borings are collected from 0.5 ft to 4 ft.

• Soils samples collected from 0 – 1 foot below ground surface showed a total concentration range of <1 ppm to 173 ppm; with 7 locations exceeding 100 ppm; and the average concentration is 12.1 ppm.

Summary

The "Data Evaluation Summary Memorandum – Phase 1" document for the Lower Neponset River Superfund Site achieves the goal to provide a summary of the Phase 1 sampling activities and associated data analysis results from the samples collected. The document provides enough foundational information within the Attachments for a reviewer to verify the results provided in the document. Furthermore, the document introduces the use of PALs for comparative purposes in order to identify areas with PCB concentrations that are elevated. The results are provided in multiple formats including narrative text, table summaries and Figures depicting location-specific results overlain with aerial photographs. An example is shown below. This Figure allows the reviewer to understand the nature and extent of PCBs in surface sediment within the Phase 1 area of the Neponset River Superfund Site.