

Summary of the Phase I Removal Action in the Lower Passaic River

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Introduction: The Phase I Removal Action in the Lower Passaic River consisted of dredging approximately 30,600 cubic meters (CM) of highly contaminated sediment to a depth of 3.7 meters. The dredged material was subsequently processed and dewatered, all of which required innovative approaches to design and construction. The objective of the work was to remove sediments containing the highest dioxin concentrations in the Lower Passaic River Study Area (LPRSA). The sediments also contained elevated levels of polychlorinated biphenyls (PCBs), herbicides, pesticides, volatile organic compounds (VOCs), and semivolatile organic compounds (SVOCs).

Methods: The design included a sheet pile cofferdam (enclosure), approximately 0.8 hectare in size, to isolate the work area from the surrounding tidally influenced river and provide adequate draft for dredging and other equipment within the enclosure. Sediments were classified based on in-situ characterization as either Environmental Media (waste that does not demonstrate hazardous characteristics and can be directly disposed of at a landfill) or Hazardous Characteristic Material (waste that requires treatment, e.g. incineration, prior to disposal). The design included multiple processes: mechanical dredging, screening and slurring of dredged material, and transport of the slurry through a pipeline to an upland processing facility (UPF) approximately 0.4 kilometer downstream of the project site; dewatering of the slurry using membrane filter presses (MFPs); water treatment; offsite transport, treatment, and disposal; backfill; and control of air emissions and odors.

Results: The team worked cooperatively with USEPA and stakeholders throughout each phase of the project to successfully complete the Removal Action within approximately four years following issuance of the Administrative Settlement Agreement and Order on Consent (AOC). Project successes include completion of dredging on schedule, no recordable safety incidents, active community engagement and local economic benefits, and the MFP filter cake significantly exceeded percent solids performance criteria thereby reducing waste quantities and costs.

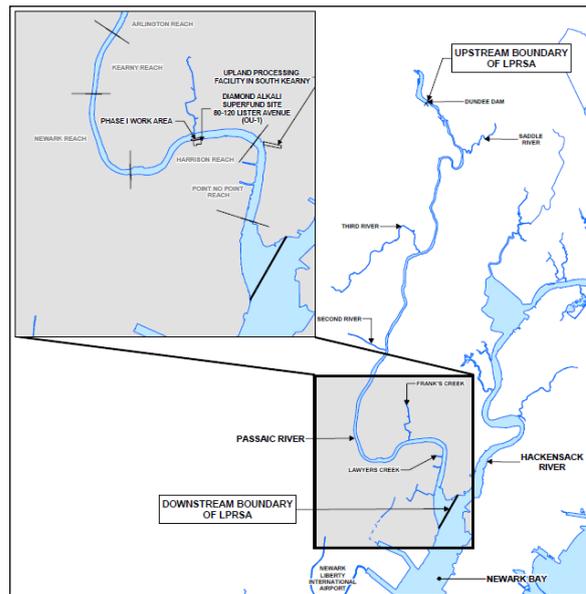


Fig. 1: Site and Study Area

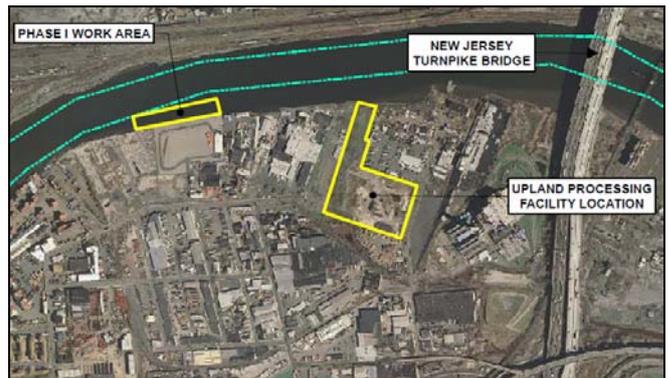


Fig. 2: Work Area and Processing Facility

Discussion: This paper will give an overview of the project and discuss design and construction challenges as well as lessons learned.

References: N/A