

## Is Your Remedy Based on Incomplete Data?

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**Background/Objectives.** Adequate delineation of the nature and extent of impacts at legacy contaminated sediment sites can require multiple and extensive investigations during the Remedial Investigation. In some cases, Remedial Investigations are completed without a full delineation of impact, and the incomplete delineation is used as the basis of remedy selection in Records of Decision (RODs). When remedy decisions are based on incomplete data, robust pre-design investigations are needed to provide additional site characterization data to define the limits of remediation, which may include assessing risk associated with constituents of concern and the feasibility of the Selected Remedy. Results of the pre-design characterization can result in remedial footprints and quantities that are inconsistent with the assumptions documented in RODs, which can greatly increase the scope and cost of remediation. Increased costs can trigger the need for ROD Amendments or Explanations of Significant Differences (ESDs). This process delays the implementation of remedial actions and can result in higher overall project costs.

This presentation discusses the strategy and methods used to work with regulatory agencies and other stakeholders to revisit ROD elements, and if needed negotiate an ESD consistent with the regulatory framework. The objective is a revised remedial extent and approach that enhances the implementability and cost-effectiveness while achieving or exceeding the remedial action objectives of the Selected Remedy.

**Approach/Activities.** This presentation will first provide examples of how incomplete delineation can have a significant impact on the selected remedy, to provide a frame of reference for potential impacts. The presentation will then discuss strategies for minimizing remedy risk through a strategic pre-design investigation and if necessary the use of an ESD to modify the remedy. Execution of an ESD often requires evaluation of multiple lines-of-evidence and active engagement with regulators and project stakeholders to develop a proposed alternative sediment remedial extent and/or approach to achieve remedial action objectives (RAOs).

**Results/Lessons Learned.** Examples of projects where a pre-design investigation and ESD has been successfully managed will be reviewed and key lessons learned that could be applied to other sediment sites will be discussed.