

REMEDIAL INVESTIGATIONS THROUGH REMEDIAL ACTIONS: SOLVING COST ESTIMATION CHALLENGES AND ANOMALY DENSITY DISCREPANCIES

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Advances in near surface electromagnetic induction (EMI) technology partnered with policy changes in the Military Munitions Response Program (MMRP) has resulted in a better understanding of limitations in anomaly density estimations. Recent case studies using advanced EMI sensors with higher resolution, 100% digital mapping, and intrusive investigation of grids has demonstrated that traditional methodologies have drastically underestimated the anomaly density as well as the total amount of work required to remediate Munitions Response Sites (MRSs). Additionally, these advances in technology and policy changes have had significant effects on estimated costs. Data from previous Remedial Investigations (RIs) has proven to be insufficient in quality and quantity to accurately scope a Remedial Action (RA) and develop a realistic cost model.

Underestimation of project costs have been noted in numerous Formerly Used Defense Sites (FUDs) Feasibility Studies (FSs). The costs developed in the FS phase are usually carried forward to the Decision Document (DD), Remedial Design (RD), and subsequently the Cost-to-Complete (CTC). Variables in site conditions including access, vegetation, terrain, and anomaly density are often misunderstood leading to the development of a poor cost estimates. This has resulted in schedule delays and postponement of contract awards. This becomes increasingly critical as the program progresses into the RA phase as the RA is where a significant portion of MMRP project's environmental liabilities are encountered.

A case study will be presented in this talk which will highlight the uniqueness of site condition variables at each location. Data collection from the RI/FS will be discussed at length and new interpretations of the data will be presented to highlight coverage issues as well as any discrepancies in anomaly densities. Together, this information will be used to correct density estimations on data previously collected during the RI/FS phase as well as re-assess cost estimates.

New MMRP policies and advances in EMI technology have led to discrepancies in density assumptions and cost estimations in previously executed RI/FS phases which have been carried forward to the DD and RD. Subsequently, these estimated costs are also often used to calculate CTC estimates which make up a large portion of the FUDS environmental liabilities. This talk will focus on a case study which will highlight actions currently being taken to correct density estimations and solve cost discrepancies. Current improvements to data interpretation and understanding the impacts to cost models will be discussed; however, further analysis of multiple sites is required to develop an adequate, defensible data set to improve project understanding and costs.