# APPLYING ADVANCED GEOPHYSICAL CLASSIFICATION TECHNOLOGY TO REMEDIAL INVESTIGATIONS AND FEASIBILITY STUDIES

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The objective of the ESTCP-funded Advanced Geophysical Classification (AGC) Remedial Investigation/Feasibility Studies (RI/FS) project was to perform AGC treatability investigations as part of three RI/FSs. Using AGC for remediation at munitions and explosives of concern (MEC) contaminated sites could limit the required intrusive investigations and reduce the cost of remediation. Including AGC as part of the RI/FS demonstrates to regulators that the technology works with the site conditions and MEC types at a specific site.  Performing AGC during the RI also provides more accurate cost of implementation for the FS.

At the first site, dynamic EM61-MK2 data were collected over 19 acres of the former Motlow Range in Tullahoma, TN. Cued data were collected over 903 targets to test the TEMTADS 2x2 sensor and the AGC process. The dig list resulted in a correct identification of all TOI on site with a 57% reduction in digs.

Dynamic MetalMapper data were collected over 5.4 acres at the Pueblo Army Depot in Pueblo, CO. Much of the site was too dense to pick individual targets, but 1,164 targets were identified in the dynamic data for cued MM data collection. Cued surveys were conducted and resulted in an over 95% reduction in clutter digs.

Dynamic and cued MetalMapper data were collected over 9 acres at the Hawthorne Army Depot in Hawthorne, NV. Approximately 92% of the 409 non-TOI locations were correctly classified as non-TOI in the ranked dig list. Of the 134 locations classified as digs and excavated outside of the investigate all area, 110 (82%) were identified as TOI during the intrusive investigation. Twenty-eight of the TOI were recovered from below 60cm below ground surface depth. The 60cm depth was the required depth of detection for the 2.75 rocket warhead TOI, which is the depth limit for the remedial alternative.