**A CHRONOLOGY OF RCAS WITH NEW AGC TECHNOLOGY IN CHALLENGING ENVIRONMENTS**

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A remedial action is being conducted to cleanup munitions and explosives of concern (MEC) over more than 1,000 acres of Croft State Park, South Carolina. Located near Spartanburg, former Camp Croft served as a World War II basic training center and is now a Formerly Used Defense Site (FUDS) ranked on the FUDS priority list. Historically, analog geophysical methods were the preferred approach to remediate MEC in an active park setting to minimize impact on the landscape so recreational activities are minimally affected. However, the selected remedy from the Decision Document emphasized the use of Advanced Geophysical Classification (AGC) to the most extent possible across the park. Due to the prolific high slopes and dense forest across the site, a ruggedized one-pass Advanced Geophysical Classification (AGC) technology paired with simultaneous localization and mapping (SLAM) positioning equipment was selected for site survey. Six APEX AGC systems, the first large scale deployment of new one-pass dynamic data collection technology, are currently deployed across Camp Croft and providing an efficient site remediation engineering solution with minimal impacts to park visitors in contrast to the originally contemplated multi-phase approach. While integrating these new technologies has proven to be effective with the challenging terrain at Camp Croft, there has been an interesting sequence of root cause analyses (RCAs) for measurement quality objective (MQO) failures that have arisen due to site conditions such as ferrous soils, saturated response areas, transmission line interference, SLAM geodetic control, and even wildlife seed disturbances. As a result of these issues, geophysical data processing has been refined since the beginning of the project to better accommodate the subsurface characteristics of the site with filtering methods and assigning classification categories other than targets of interest (TOI). Additionally, intrusive recoveries have provided a needed supplemental reference to optimize data processing parameters, source selection, and categorization of sources. Continued project exposure with these lessons learned and overcoming the myriad of challenges will contribute to the overall success of the project.