EM61 AND MAGNETIC SENSORS: APPLICATION AND PERFORMANCE
SUMMARY AT FORMER CAMP SAN LUIS OBISPO

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In this presentation, the performance of commercial sensors demonstrated at former Camp San Luis Obispo (SLO), California as part of ESTCP’s second Large Scale Classification Study will be discussed. Because significant effort was spent during the planning, seeding, and excavation phases, the subject study provides an excellent opportunity to evaluate sensor performance in terms of being able to not only detect the items of interest, but also classify the buried objects as items of interest or not. Multiple targets of interest are present at former Camp San Luis Obispo.

Commercially available electromagnetic induction (EMI) and magnetic sensors have long been used as detection aids during clean-up of sites contaminated with unexploded ordnance. The sensors work by exploiting spatial and temporal changes in the local electromagnetic and/or magnetic fields caused by the presence of the unexploded ordnance (UXO). The degree to which the local electromagnetic and/or magnetic field is altered depends on the composition, size, and shape of the ordnance’s metallic casing. Over the years, the commercial EMI and total-field magnetic sensors have proven to be field rugged, easy to use, and capable of detecting isolated ordnance items. In addition to reviewing the basic phenomenology that is exploited by these sensors, the speaker will review the various sensor platforms, the measured data, processing and analysis schemes, available target attributes, and finally, overall performance as demonstrated at former Camp San Luis Obispo. The discussion will provide a performance benchmark using commercial sensors and establish a basis for discussing advanced sensors that are designed to exploit additional details of the targets’ EMI response.