**Estimating Site-specific Effective Classification Depths using the UX-Analyze Background Validation Tool for Cued AGC Data**

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**Abstract**

Forward modeling approaches to estimating munitions detection depths are well established and accepted for a variety of geophysical sensors, but there are no widely accepted methods for estimating classification depths (i.e. the depth at which a specific target of interest (TOI) can consistently be classified correctly as TOI or non-TOI). The classification depth for a cued AGC sensor can be reduced by variable geologic conditions or increased noise levels which decrease the effectiveness of background response removal. The UX-Analyze background validation tool was used to estimate the site-specific classification depth for the MPV cued AGC sensor for small, medium, and large ISOs in the challenging geological environment at the Former Waikoloa Maneuver Area (FWMA). A robust physical QA and QC seeding program was also implemented at the FWMA. The classification depths estimated using the UX-Analyze Background Validation Tool were consistent with the physical seed results and explained unanticipated classification depth limitations. This presentation will propose using the UX-Analyze Background Validation Tool to estimate classification depth for ISOs in the early stages of MMRP remedial actions and discuss the strengths and weakness of this approach.