Where’s the MQO?

*Steve Stacy, USACE, USA*

*Andrew Schwartz, USACE, USA*

*John Jackson, USACE, USA*

*Elise Goggin, USACE, USA*

*Michael Madcharo, USACE, USA*

Measurement Performance Criteria (MPCs) and Measurement Quality Objectives (MQOs) are critical in evaluating whether data collected during an investigation or remedial action meet the project’s data quality objectives (DQOs). MPCs are project specific; document the requirements necessary to meet data quality objectives; guide development of sample design; and provide criteria for data usability assessment at the end of the study. MQOs are used to perform testing, inspections, and quality control of data during project execution to identify whether the data can be used for their intended purposes.

Guidance documents such as Engineering Manual (EM) 200-1-15, the Advanced Geophysical Classification (AGC)-Quality Assurance Project Plan (QAPP) Template, and the Munitions Response (MR)-QAPP Toolkit Modules 1 and 2 focus heavily on MPCs and MQOs associated with analog and digital geophysical mapping (DGM), including AGC, geophysical surveys and the resultant intrusive investigations. Technologies that are not specifically mentioned in these guidance documents include older technologies (e.g., excavation and sifting) and newer technologies, which include aerial Light Detection and Ranging (LiDAR) surveys, simultaneous location and mapping (SLAM) positioning systems, and marine geophysical surveys.

The USACE EM CX performs independent technical reviews (ITRs) of project documents to ensure project teams are performing munitions response work in accordance with available guidance and to ensure consistency across the program. During reviews of several recent MR-QAPPs, the USACE EM CX identified MQOs that were either inadequate or missing for technologies where there is no available guidance. In one case, the missing MQOs would have led to the unsuccessful implementation of a selected remedy in a Record of Decision. In this presentation, we will provide the intent behind many existing MQOs and provide general guidance on how to modify common DGM MQOs for technologies not specifically mentioned in available guidance documents. In addition, minimum MQOs will be provided for using LiDAR, SLAM positioning systems, and some marine geophysical surveys.