Standardized UXO Demonstration Sites

Active Response Site

The GPS system is being used to measure the location of an anomaly.

For more information

U.S. Army Environmental Command
Public Affairs Office
410-436-2556, fax 410-436-1693
e-mail: APGR-USAECPublicAffairsOffice@conus.army.mil
http://aec.army.mil

The U.S. Army Environmental Quality Technology (EQT) Unexploded Ordnance (UXO) Technology Program utilizes and funds standardized demonstration test sites located at Aberdeen Proving Ground (APG), Maryland, and Yuma Proving Ground (YPG), Arizona. The purpose of the test sites is to provide demonstrators an opportunity to demonstrate and validate their UXO detection and discrimination systems in a controlled environment. The standardized sites are on an area of APG and YPG that have been previously impacted by UXO. UXO was removed prior to the construction of the standardized test sites. Inert ordnance, ordnance items whose explosive component has been removed, was emplaced in all of the different areas of the standardized sites, such as the calibration lane, blind grid, open field, and other challenge areas along with range scrap. Every item, either inert ordnance or range scrap, was carefully measured and documented prior to placement in the ground. The APG site contains challenge areas such as a wooded area and a convex mogul scenario, while YPG site offers challenges such as a desert extreme area and a concave moguls scenario.

The Active Response Site is a two-acre area adjacent to the APG standardized test sites that was never cleared of anomalies during the construction of the standardized sites. The items contained within the Active Response Site were deposited during military operations at APG over the last century. The Active Response Site was not cleared of anomalies because the UXO Technology Program wanted to represent those conditions that are found on former military practice and training ranges, which can be much more challenging than the Standardized Test Sites.

Prior to the first sensor technology demonstration at the Active Response Site, explosive ordnance disposal (EOD) technicians certified that the site was safe to use for UXO detection and discrimination demonstrations. An additional safety measure was taken by applying 100 pounds of pressure to the Active Response Site using an armored roller/dozer. The site was then divided into 20 grid cells, each grid cell being 20 meters in length and 20 meters in width. Each grid cell was assigned an estimated density rating of either low, medium, or high. These density ratings correlate to the number of items

assumed to be in the ground based on initial ground surveys. During the demonstrations, grid cells were surveyed in sequence by each demonstrator to ensure similar coverage.

Recovery operations for half of the Active Response Site began at the conclusion of the demonstrations. Approximately one half of the Active Response Site will remain untouched because the UXO Technology Program would like to reserve it for future UXO detection and discrimination demonstrations. The recovery operation was a difficult process because every anomaly had to be investigated and carefully inventoried. The detailed inventory consisted of noting the items exact location, depth, and orientation. The anomaly was also identified as either a piece of scrap such as a tail fin or actual UXO. A ground truth was established once all of the information about the subsurface items were collected. This ground truth was then compared to the data that was submitted by a demonstrator. The Army published a scoring record for each demonstration at the Active Response Site once the data was analyzed.

The Active Response Site benefits the UXO community by creating a test area that represents site conditions found on former military ranges. It is essential to correlate the technology performance between the Standardized Sites and realistic range areas in order to validate the Standardized Sites and demonstrate the technologies "real" performance. The ability of a technology to effectively and efficiently detect UXO and discriminate from range scrap will ultimately save the government both time and money.

Team documents and investigates an anomaly.