AGC Projects at Urban Wilderness and Residential Sites

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Introduction

Military Munitions Response Sites situated in residential settings pose a unique set of challenges that are not inherent to a traditional site.

Objectives

- Use AGC Technologies to achieve project objectives under the direction of the United States Army Corps of Engineers

Challenges

- Planning
- Working with Homeowners/ Logistical
- Survey Conditions
- Technological
- Data Analysis
- Intrusive Related

Site Locations and Former Uses

- Project sites
  - WESTON conducted AGC in residential settings on three different projects.
  - Two sites formerly utilized for live fire training in early 1900's
    - TOI's: 3-inch/4-inch Stokes Mortars, Livens projectiles, 75-mm projectiles, and MkIV boosters
  - One site formerly utilized as basic infantry training camp during WWII
    - TOI's: Trip flares, smoke canisters, landmines

Site Locations and Description

Site 1 (SVFUDS, NW Washington, D.C.)

- MPV Dynamic and Cued, G-858 Magnetometer Dynamic (Burial Pits)
- Remedial Action
- Urban Residential
  - Single-family detached dwellings
- Urban wilderness
  - Forested, enclosed by residential housing and intersected with roadways

Site 2 (undisclosed)

- MPV Dynamic and Cued
- Remedial Investigation
- Suburban Residential
  - Single-family detached dwellings

Site 3 (undisclosed)

- EM61 Dynamic, MM2x2 Cued
  Remedial Action
- Rural Residential
  - Single-family detached dwellings, typically associated with farming/ranching
- Rural wilderness
  - Vegetated forest, intersected with roadways, campgrounds, and parking areas

Planning Considerations

- Level of Public Attention
- IVS Location
- Verification and Validation Plan

Working with Homeowners

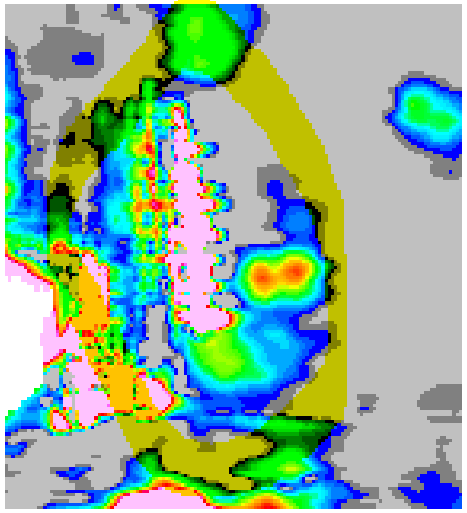
- Obtaining right-of-entry
- Helping homeowners understand the process
- Building trust/relationships with homeowners
- Community relations
- Minimize site disturbance/site restoration

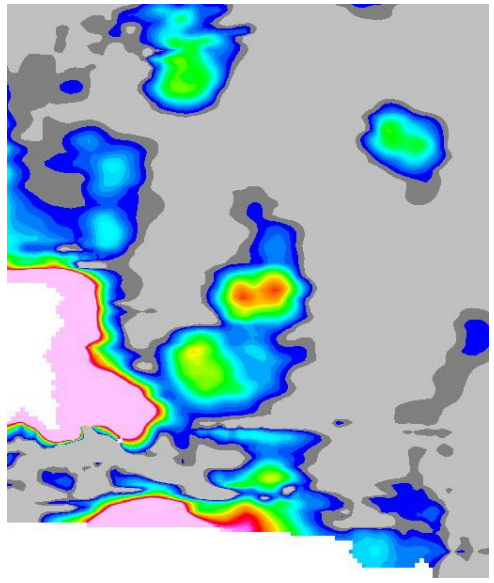
Survey Conditions

- Sensor Selection
- Working around landscaping, hardscaping, and cultural features
- Vegetation Removal
- Property boundary discrepancies

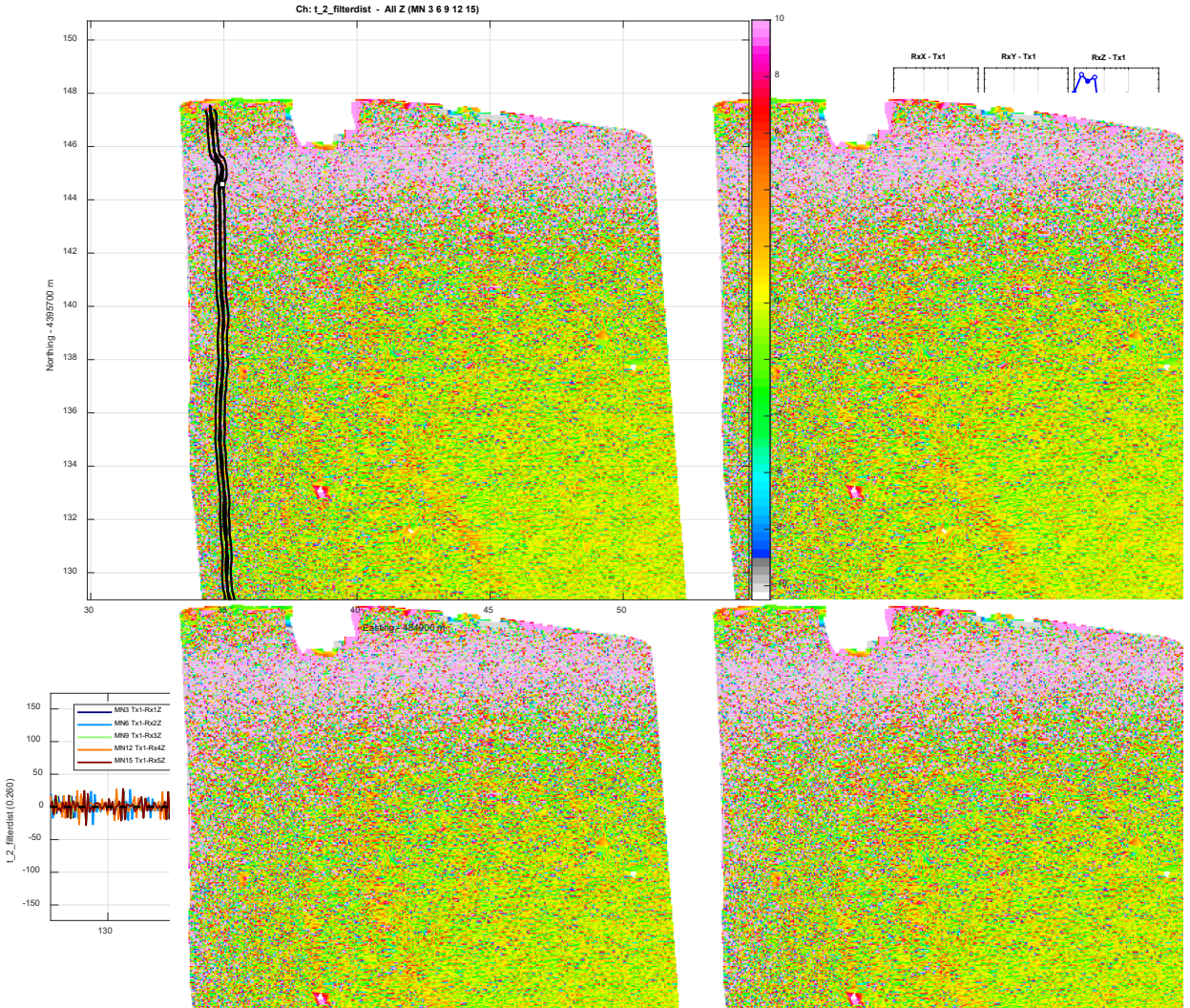
Survey Conditions and Data Analysis

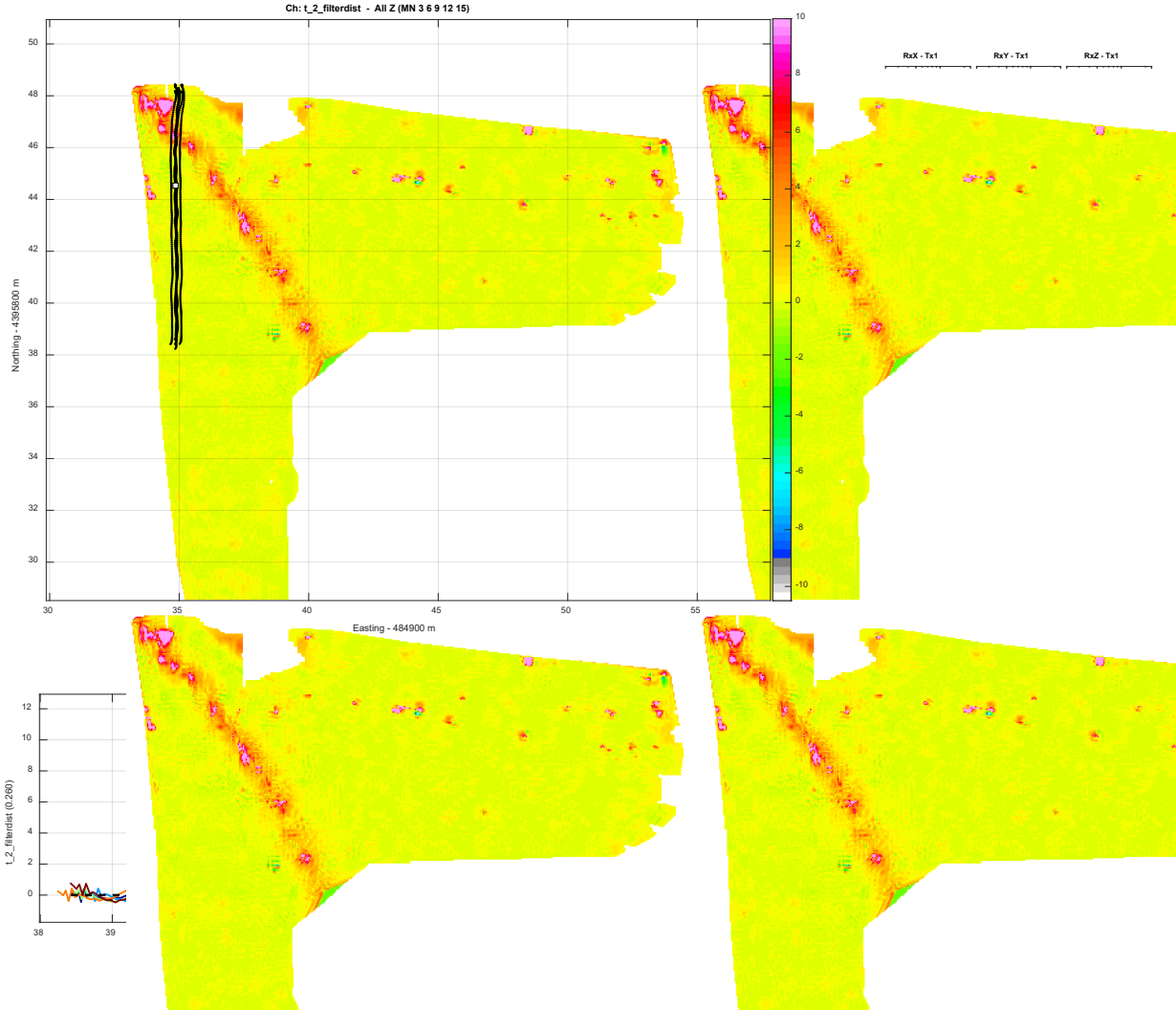
- Moveable objects on residential properties can present data quality challenges
- Allow proper distance from movable metallic objects during dynamic/cued surveys
- Coordinate with homeowners to have these moved to an area on the property where data was already collected



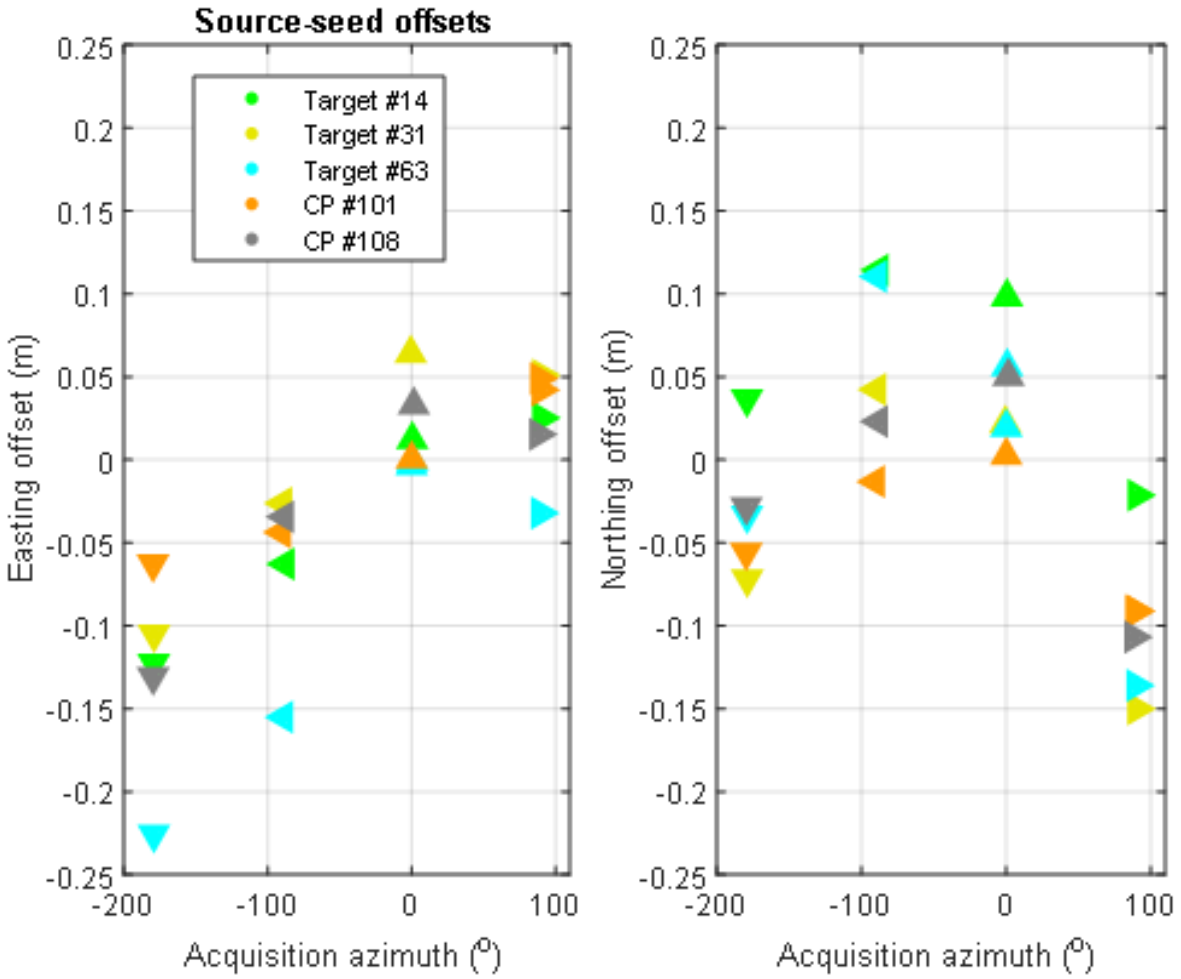


Data Analysis: Magnetic disturbance affecting EMI data





Data Processing: Magnetic disturbance affecting IMU Data



Here cued data were collected in the 4 cardinal directions over 5 targets scattered over a property. The data were subsequently inverted to predict the buried target location.

The predicted location depended on the IMU orientation, suggesting a heading error of up to 9 degrees (23 cm).

The minimum errors occurred when the IMU was pointing to the North.

⇒ **The property was cued with the sensor pointing to the North.**

Intrusive Challenges

- Moveable Objects (again!!)
- Digging conditions
- Hardscape targets
- Considerations when you encounter a fuzed item

Successes

- AGC dig reduction rate greater than 95%
  - For all three sites:
    - Approximately 95,000 detections from dynamic surveys
    - 37,000+ unique cued locations
    - 4,000+ targets intrusively investigated
- New data collection methods established
- Successful implementation of new AGC Technology
- Improved efficiencies over project
  - Common responses to rebar, landscape staples, etc…allowed for reduced dig lists
  - Dynamic/cued daily production rates increased
  - Ability to troubleshoot/repair AGC equipment = less downtime
- Satisfied homeowners
- Volume of completed properties
- Future work

Questions & Answers

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Contact Us

How can we best serve you?

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