

Unit B-3E

E MACHINE GUN FLATS ROAD

BARLOY CANYON ROAD

BLM AREA B, UNIT B-2A  
MORTAR INVESTIGATION  
FORMER FORT ORD, CALIFORNIA

Unit B-2A



**KEMRON**  
ENVIRONMENTAL SERVICES

# PROJECT DESCRIPTION

- A 4.2-inch screening smoke mortar projectile was recovered in BLM Area B Unit B-2A during surface removal operations on December 11, 2017
- Based on the potential for 4.2-inch mortar projectiles with unknown filler to remain in the shallow subsurface, a limited subsurface removal is being conducted

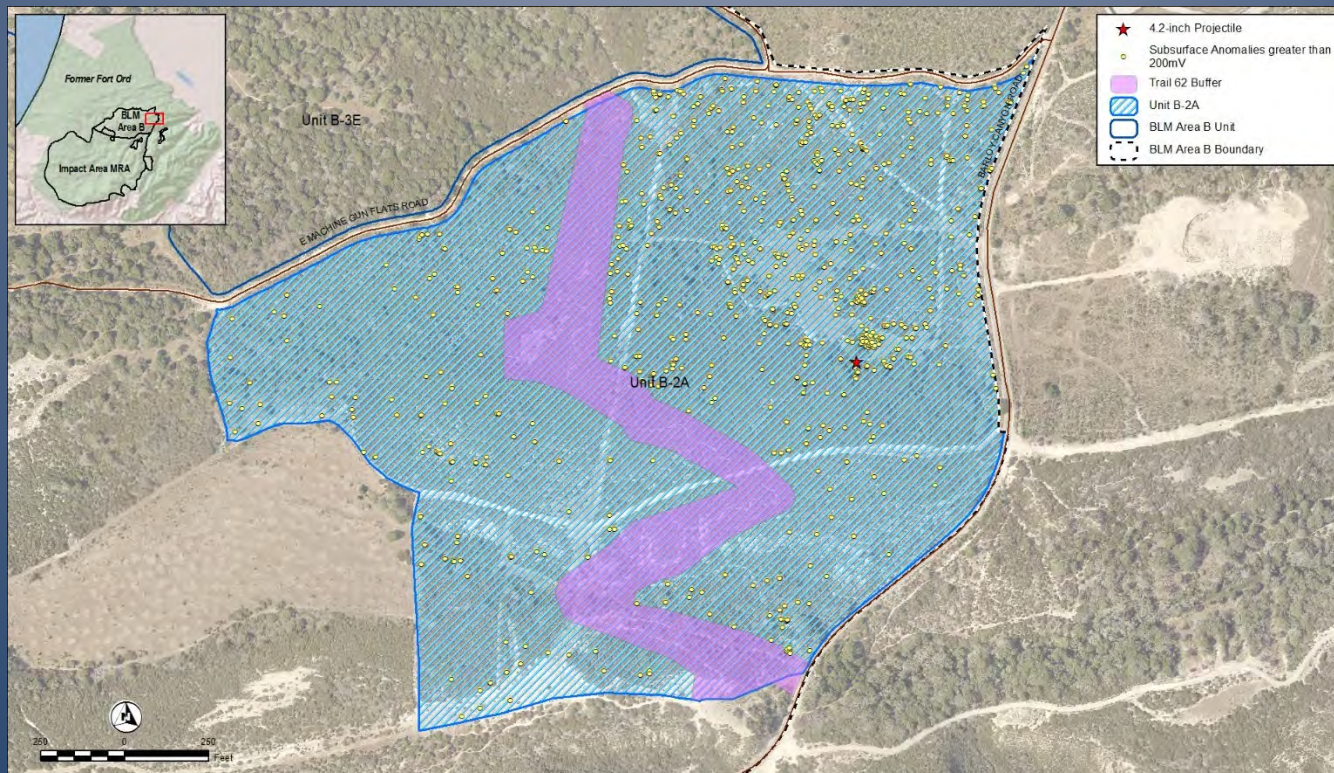


## SUBSURFACE REMOVAL APPROACH

- Selection of subsurface anomalies potentially related to 4.2-inch mortar projectiles to 2 feet below ground surface
- Static MetalMapper 2x2 classification survey to acquire robust measurements at each selected anomaly location
- Modeling and classification of measured data to identify each anomaly source as a likely target of interest (TOI) or non-TOI
- Intrusive investigation (to 18 inches below ground surface) and removal of anomaly sources classified as TOI

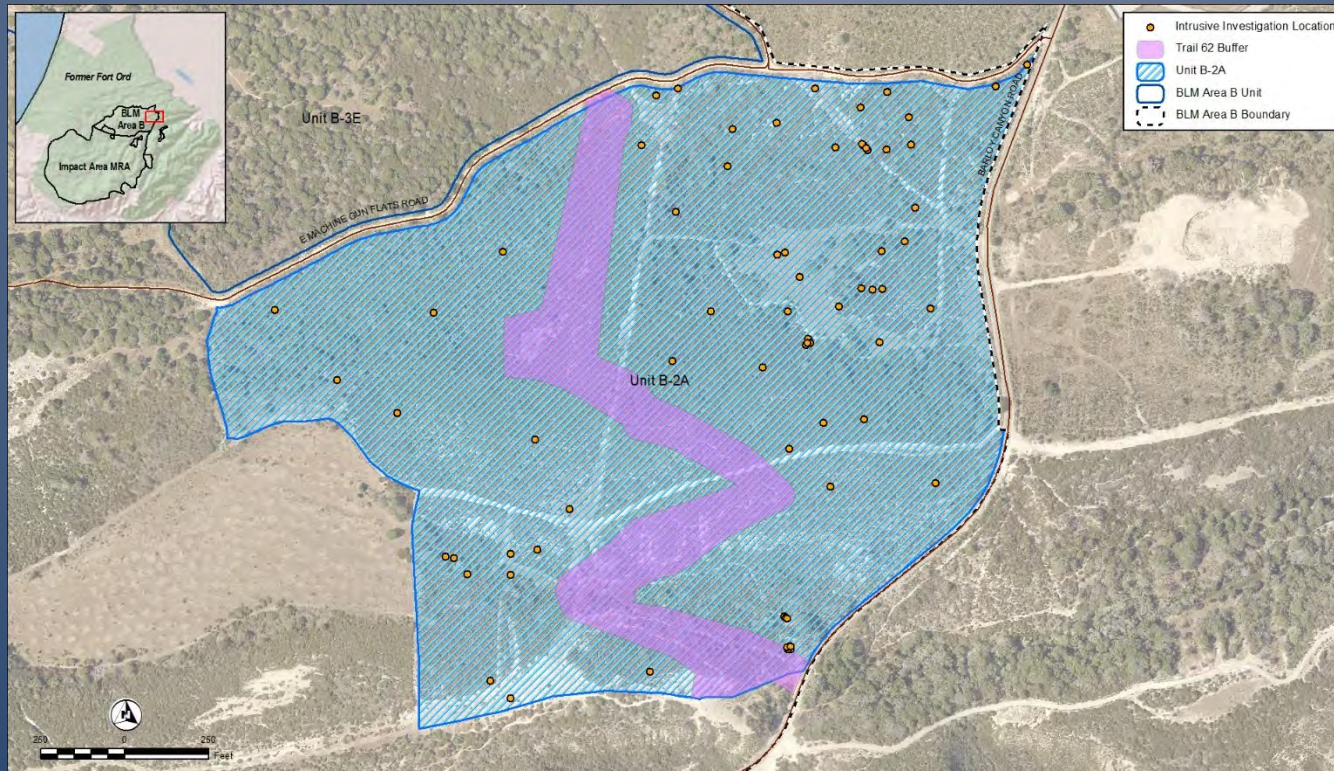
# IDENTIFICATION OF SUBSURFACE ANOMALIES

- Response threshold based on Naval Research Laboratory EM61 response curves for a 4.2-inch mortar 2 feet below ground surface
- Targets with response amplitudes greater than 200mV selected from EM61 DGM data
- 749 subsurface anomalies selected



# METALMAPPER 2X2 CLASSIFICATION SURVEY

- 69 targets identified for intrusive investigation and subsurface removal
  - 33 Category 0 (Cannot Analyze)
  - 13 Category 1 (High-Confidence TOI)
  - 14 Category 2 (Inconclusive)
  - 9 Category 3 (High-Confidence Non-TOI – QC verification investigations)



# INTRUSIVE INVESTIGATION AND SUBSURFACE REMOVAL

- Two 4.2-inch screening smoke mortar projectiles recovered (currently MPPEH status)
- 43.5 pounds of munitions debris recovered
- 18 QC seeds recovered



# QUALITY CONTROL AND QUALITY ASSURANCE

- Quality Control verification activities:
  - Blind seeding (18 small ISO QC seed items)
  - MQO performance verification
  - Daily instrument verification (function tests and IVS surveys)
  - 9 library match threshold verification investigations added to dig list
  - Inspections of DGM activities
  - Inspections of UXO activities
  - Inspections of intrusive investigation results (in progress)
- Quality Assurance validation activities:
  - Pending finalization of QC activities