Fort Jackson MMRP Case Study

Using Range Complexing, Field Technologies, and Master Planning to Support No Further Investigation Decisions at Small Arms Ranges
MMRP Site Inspection at Fort Jackson

- Site Inspection (SI) included:
  - Historical Records Review (HRR) – records search to supplement information obtained during the Range Inventory
  - SI Field Activities – Munitions and Explosives of Concern (MEC) and Munitions Constituents (MC)
  - SI Report – Draft, Stakeholder Draft, and Final
  - Stakeholder Involvement / Technical Planning Process

- Goal of field screening/sampling:
  - Collect sufficient information to determine whether MEC and/or MC are present at the MMRP sites
MMRP Sites – Range Inventory and HRR

- 10 other than operational ranges identified (from the Phase 3 CTT Range Inventory) for inclusion in the SI.

- Of the original 10 ranges, 3 were small arms ranges located in the Cantonment Area.

- At least 6 additional small arms ranges were identified in the Cantonment Area during the HRR.

- Another 20+ ranges were identified during the HRR that overlapped the other SI sites. This presentation focus only on the Cantonment Area small arms ranges (i.e., only some of the MMRP sites).
INDEPENDENT ENVIRONMENTAL ENGINEERS, SCIENTISTS AND CONSULTANTS

300-Yard Range Target Area
INDEPENDENT ENVIRONMENTAL ENGINEERS, SCIENTISTS AND CONSULTANTS

- Backstop Berm
- Transition Range
- Backstop Berm
- Pistol Range NR 2
- Machine Gun Range
- Firing Point
- Pistol Range
- 1000" Range Nos. 14, 15, 16
- Landscape Target Range

MALCOLM PIRNIE
Range Complexing – Cantonment Area Small Arms Ranges

- The 9 Cantonment Area small arms ranges were complexed into 2 Munitions Response Sites (MRSs)
  - Camp Jackson Ranges (81 acres, 1918-1926)
  - Small Arms Ranges East of Chesnut Road (546 acres, 1946-1970)

- Ranges were grouped based on:
  - Geographical location
  - Period of use
  - Range type

- Complexing reduced the level of effort required to investigate, document findings, and track decisions by more than 50 percent.
MMRP Site Inspection Field Activities

- Goal of MEC field activities:
  - Gather sufficient evidence to support (or contradict) the historical information documented in the HRR.

- Goal of the MC field activities:
  - Determine whether or not sites have been impacted by historical range activities by obtaining and analyzing biased surface soil samples for MC.
MMRP Site Inspection Field Activities – Cantonment Area Small Arms Ranges

- No MEC was suspected at the small arms ranges.
  - As reported in the HRR, the ranges were used for small arms training only.
  - MEC was not observed during the SI field activities.

- Limited MC (lead) was anticipated at the Cantonment Area small arms ranges.
  - Discrete surface soil samples were collected at the small arms ranges.
  - Samples were analyzed for MC (total lead using USEPA Method 6010B).
MMRP Site Inspection Field Activities – Cantonment Area Small Arms Ranges

- Discrete surface soil samples were collected from sampling locations based on:
  - Field observations
  - Historical range data
  - All metals detector findings
  - XRF screening values

- Sampling locations chosen were biased to:
  - Areas where former range features had been identified (through historical map review and/or visual observations)
  - Areas where the all metals detector located expended cartridges, bullets, and/or bullet fragments
  - Locations where higher XRF screening values were determined
MMRP Site Inspection Findings – Cantonment Area Small Arms Ranges

- Small arms ranges only; no MEC observed
- Munitions debris included expended small arms cartridges and bullets/bullet fragments
- One M20 Rifle (Smoke) Grenade was observed – not associated with historical range activities at sites
- None of the 170 XRF readings or 98 surface soil samples exceeded the Region 9 Residential PRG for lead (400 mg/kg)
MMRP Site Inspection Results – Cantonment Area Small Arms Ranges

- Reduced the number of MMRP sites from 9 ranges to 2 MRSs using range complexing
- Reduced the number of samples to less than 100 for the 2 MRSs comprising more than 600 acres
- No Further Investigation Decision for both MRSs
- Master Plan annotated to indicate former small arms training areas
- Regulatory Stakeholder Concurrence