

Proposed Plan for Soil and Dry Sediment

Erie Burning Grounds (EBG)

and

Open Demolition Area #2 (ODA2)

Ravenna Army Ammunition Plant

Ravenna, Ohio

Presented by:

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Presentation Agenda

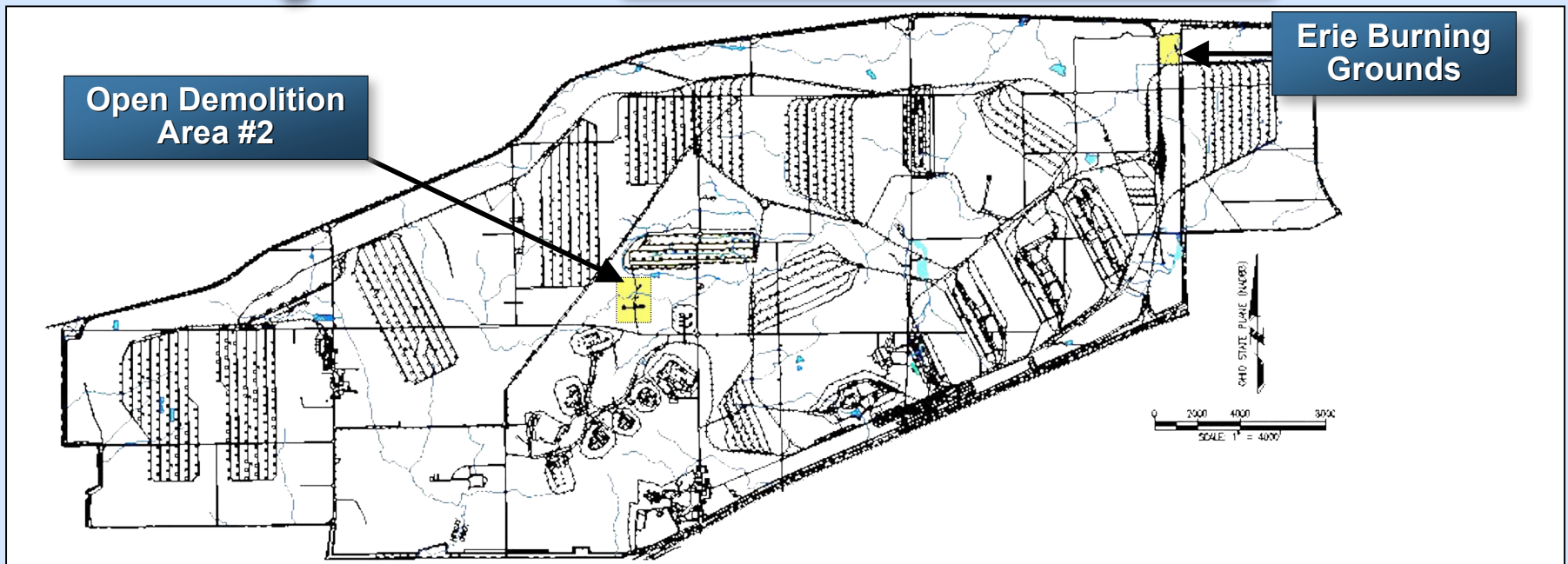
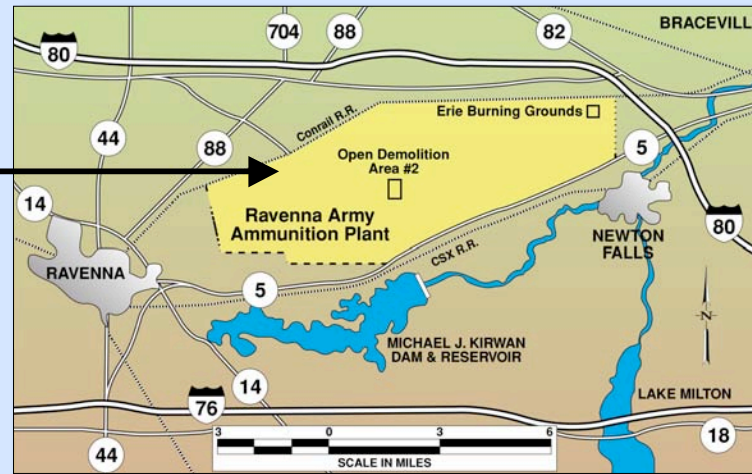
- Two Areas of Concern – first EBG, then ODA2
- Historical Operations and Investigations
- Scope of the Response Actions
- Recent Investigations and Risk Assessments
- Proposed Plan for Soil/Dry Sediment
- Future Military Munitions Response Program Actions
- Questions and Comments
- Adjourn

Location of EBG and ODA2



Open Demolition Area #2
Area of Concern (AOC) No. RVAAP-04

Erie Burning Grounds
Area of Concern (AOC) No. RVAAP-02

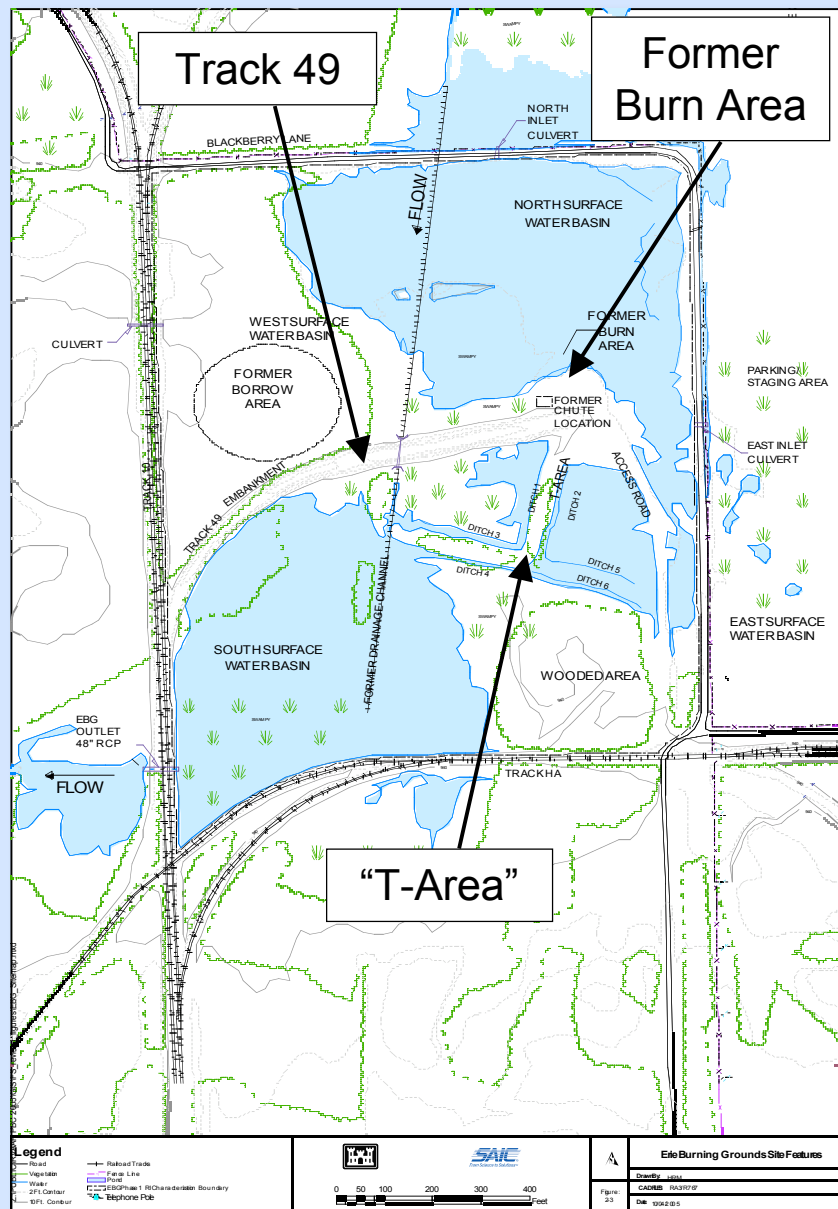




- Disposal of explosives by open burning.

- Bulk explosives, black powder, and propellants	- Sawdust from load lines
- Explosives-contaminated burnable wastes (e.g., paper)	- Explosives-contaminated metal items (equipment and munitions)

- Army dug drainage channels and built a rail spur (Track 49).
- Used from 1941 to 1951, burning in two designated areas.
- Metal items recovered for salvage or recycling. Ash residues left on the AOC.
- After 1951, the area became wetland due to beaver activity.



About 60% of EBG today is high-quality wetland.



- Two phases of remedial investigation (RI) completed as of 2005.
- 110 soil samples collected and analyzed.
- Soil contaminants include:
 - Metals.
 - Explosives.
 - Petroleum-related chemicals from burned fuels.
- Most contamination along Track 49 and the “T-Area.”
- Most soil contamination is shallow (e.g., 0 to 1 ft depth).



- RI Addendum completed for EBG in September 2006 included:

– Updated contamination fate and transport

– Updated human health risk assessment

– Updated ecological risk assessment

– Developed preliminary cleanup goals

- The RI Addendum determined the need for either:
 - 1) Further investigation.
 - 2) No further action.
 - 3) Engineering Feasibility Studies for soil cleanup.



- Chemicals in soil not predicted to impact groundwater.
- Human risk assessment for soil evaluated a wide range of possible scenarios:

– **Fire/Dust Suppression Worker (intended use)**

– **National Guard Trainee**

– **Trespasser**

– **Resident Subsistence Farmer**

- Contaminants less than preliminary cleanup goals for intended land use.
- Ecological clean-up goals are not required.

– **Healthy ecosystem, not likely to change.**

– **Low levels of soil contamination and ecological risk**

– **Low likelihood of contaminant movement from soil to adjacent wetland**

– **Lots of nearby high-quality habitat**

– **Soil removal could cause more habitat damage than chemical risk**



- This response action addresses soil and dry sediment.
- Ohio Army National Guard (OHARNG) intends to maintain EBG as a restricted access area:
 - Preserve wetland habitat.
 - Possible munitions and explosives of concern (MEC).
 - Security patrols, surveys, and environmental sampling allowed.
 - Possible surface water use for emergency fire response.
- Future decisions for surface water and groundwater.
- Munitions to be addressed under the Military Munitions Response Program (MMRP).



EBG – No Further Action

- To be maintained as restricted access.
- No OHARNG training.
- Preserve high-quality wetland.
- Fire/Dust Suppression Worker = intended use.
- No chemicals above preliminary cleanup goals for intended use.
- Soil removal to eliminate ecological risk could damage surrounding wetland habitat.
- Future surface water, groundwater, and MEC actions.



- Munitions destruction by open detonation.

– Various caliber artillery munitions and projectiles	– Off-specification bulk explosives
– Bombs	– Miscellaneous munitions components

- Operations started in 1948.
 - Main open detonation area (about 1.5 acres).
 - Open burning areas within the main open detonation area (1981 – 1986).
 - 40MM projectile test range.
 - Several MEC burial sites.
- Scattered munitions fragments throughout the AOC.
- MEC removal in 1999 in the main open detonation area recovered over 100,000 items (primers, fuzes, artillery rounds, fragments)
- Extensive MEC remains at the AOC.

Because of remaining MEC at ODA2, the area is restricted access.





- Three phases of CERCLA investigation completed as of 2005.
- 160 soil samples collected and analyzed.
- Soil contaminants include metals and explosives.
- Most contamination found in the main open detonation area, floodplain adjacent to Sand Creek, and northwest portion of ODA2.
- Most soil contamination is shallow (e.g., 0 to 1 ft depth).



- RI Addendum completed for ODA2 in September 2006 included:

- Additional 12 soil samples collected to define extent of contamination.

- Updated contamination fate and transport

- Updated human health risk assessment

- Updated ecological risk assessment

- Developed preliminary cleanup goals

- The RI Addendum determined the need for either:
 - 1) Further investigation.
 - 2) No further action.
 - 3) Engineering Feasibility Studies for soil cleanup.



- Some chemicals may leach from soil, but no chemicals are expected to migrate beyond ODA2.
- Due to access restrictions, the risk assessment for soil evaluated only a Security Guard/Maintenance Worker scenario.
- Contaminants less than preliminary cleanup goals.
- Ecological clean-up goals are not required:

– **Healthy ecosystem, not likely to change**

– **Low levels of soil contamination and ecological risk**

– **Lots of adjacent high-quality habitat**

– **Low likelihood of contaminant movement from soil to adjacent waters (Sand Creek)**

– **Soil removal could cause more habitat damage than chemical risk**



- This response action addresses only soil and dry sediment.
- Ohio Army National Guard (OHARNG) intends to maintain ODA2 as a restricted access area:
 - Extensive MEC.
 - Security patrols, property surveys and maintenance.
 - Environmental sampling.
 - Demolition of recovered MEC.
- Future decisions for surface water and groundwater.
- MEC to be addressed under the MMRP.



ODA2 – No Further Action

- Maintained as restricted access.
- No OHARNG training.
- Security Guard/Maintenance Worker = intended use.
- No chemicals above preliminary cleanup goals for intended use.
- Soil removal to eliminate ecological risk would damage habitat more than current chemical risk.
- Future surface water, groundwater, and MEC actions.



MMRP Discussion



Questions?