# Alabama Regulatory Perspectives

Open Burning and Open Detonation Sites

# Department of Defense (DoD) OB/OD Sites in Alabama

Anniston Army Depot*

Fort Rucker

Pelham Range (Ft. McClellan)

Redstone Arsenal*

# Regulatory Requirements for OB/OD

Alabama Regulates Open Burning and Open Detonation Sites as **Subpart X** units (also called **Miscellaneous Treatment** units)

Regulatory Citations:

**Alabama Admin. Code r. 335-14-5-.24**

(40 CFR 264.600 – 603)

# OB/OD Permit Requirements

## Waste Feed Requirements

- Allowable waste feed
  - Characteristic waste codes (toxicity)
  - Listed waste codes (dependent on munitions constituents)
- Prohibited waste feed
  - Liquid filled rounds
  - White/red phosphorous
  - Riot control agents

# OB/OD Permit Requirements

## Groundwater Monitoring

- Detection Monitoring
- Compliance Monitoring
- Corrective Action Monitoring

# Anniston OD Unit

## Open Detonation
## Anniston Army Depot

- 900ft x 300ft operating area of 51 acre site
- 8 detonation pits – 2 detonations allowed per pit daily (16 max)
- Daily limits per pit per detonation – 15 lbs NEW above ground (240 max) or 1,000 lbs NEW buried (16,000 max)

# Anniston OB Pans

- 400ft x 800ft operating area of 17 acre site
- 10 burn pans– 1 burn allowed per pan daily (10 max)
- Daily limits -2,000 lbs NEW per pan (20,000 lbs max)

Open Burning Anniston Army Depot

# RSA OD Unit

## Open Detonation Redstone Arsenal

- 7 detonation pits – 1 to 2 detonations per pit daily not to exceed a maximum of 350 lbs
- Daily limits – 25 lbs NEW per pit for 2 detonations per day or 50 lbs NEW per pit for one detonation per day

# RSA OB Pans

## Open Burning Redstone Arsenal

- 5 burn pans
- Daily limits
  - **Hazard Class 1.1**
    100 lbs NEW per pan
    (500 lbs max)
  - **Hazard Class 1.3**
    2,000 lbs NEW per pan
    (10,000 lbs max)
  - **Oxidizer**
    1000 lbs NEW per pan
    (5000 max)
  - **D003 Solvents**
    < 900 lbs NEW per pan

# Challenges for OB/OD

- Compatibility of various hazard classes of explosives/propellants
- Fragments and unexploded items outside of OD operating boundaries
- Improper placement of items in burn pans

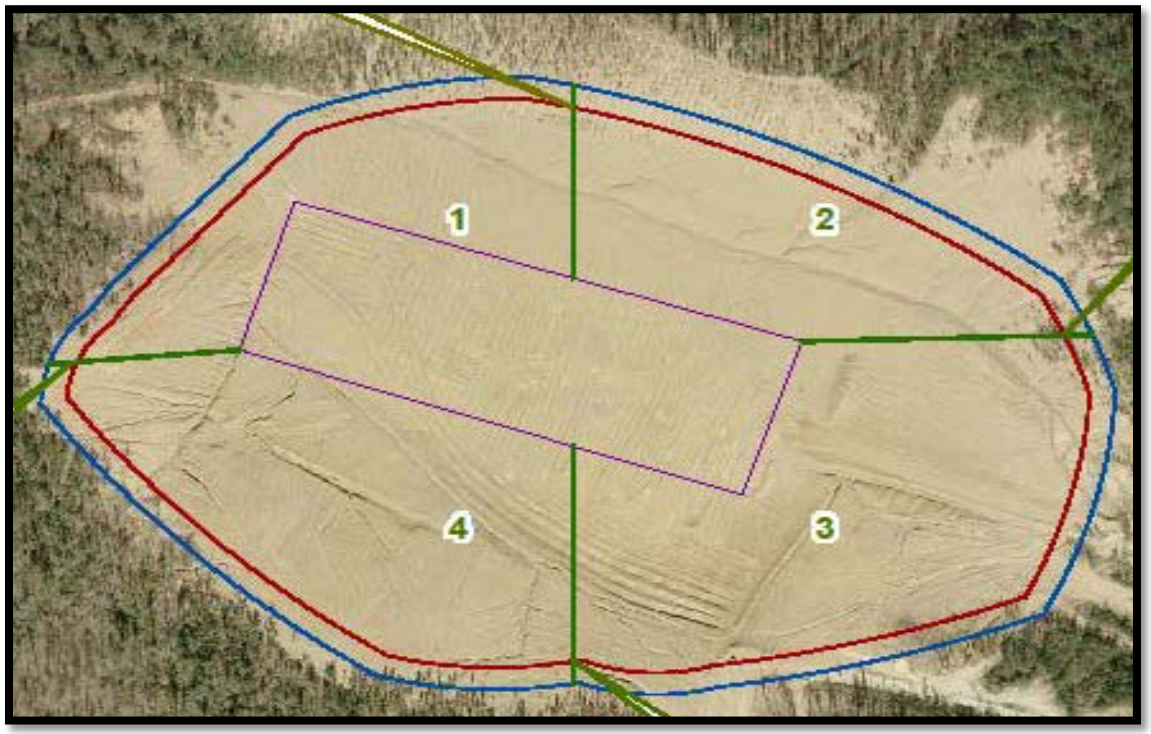
# OB/OD Permit Requirements

## Residue Management

- Safety Buffer Zones
- Operating Unit Boundaries
- Clean up of Ejected Material

# ANAD OD Boundaries

## Arial Photo of ANAD Boundaries

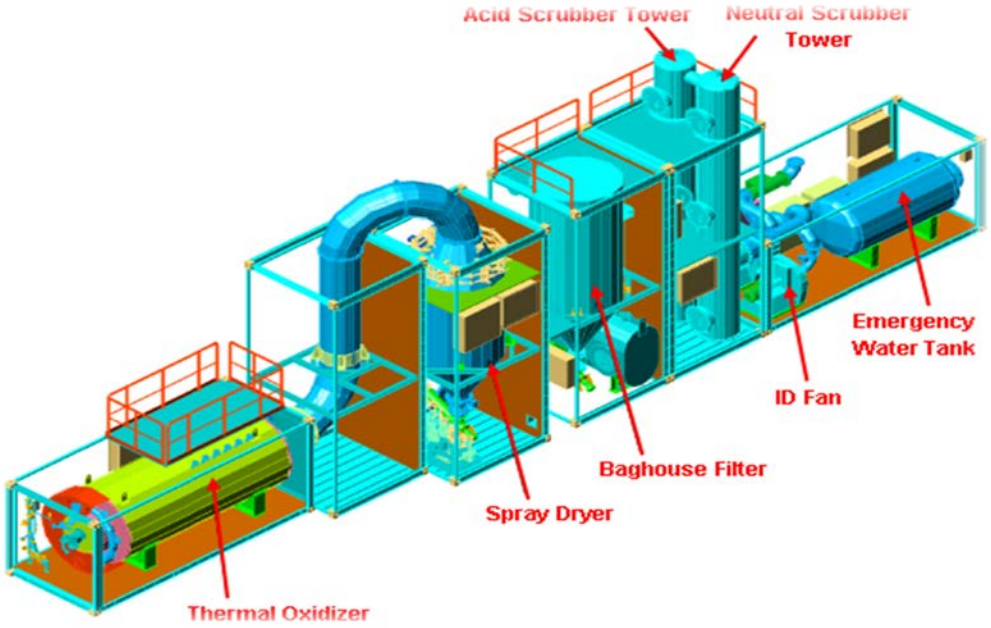



- Active Area boundary
- Validation Area boundary
- Assessment Area boundary

# ANAD Former Buffer Area MRS

Anniston Army Depot Former OD Buffer Area MRS

# Alternatives to OB/OD


**Reuse**

**Recycle**

**Advanced Technology**

# Thermal Treatment Closed Disposal Process (TTCDP)

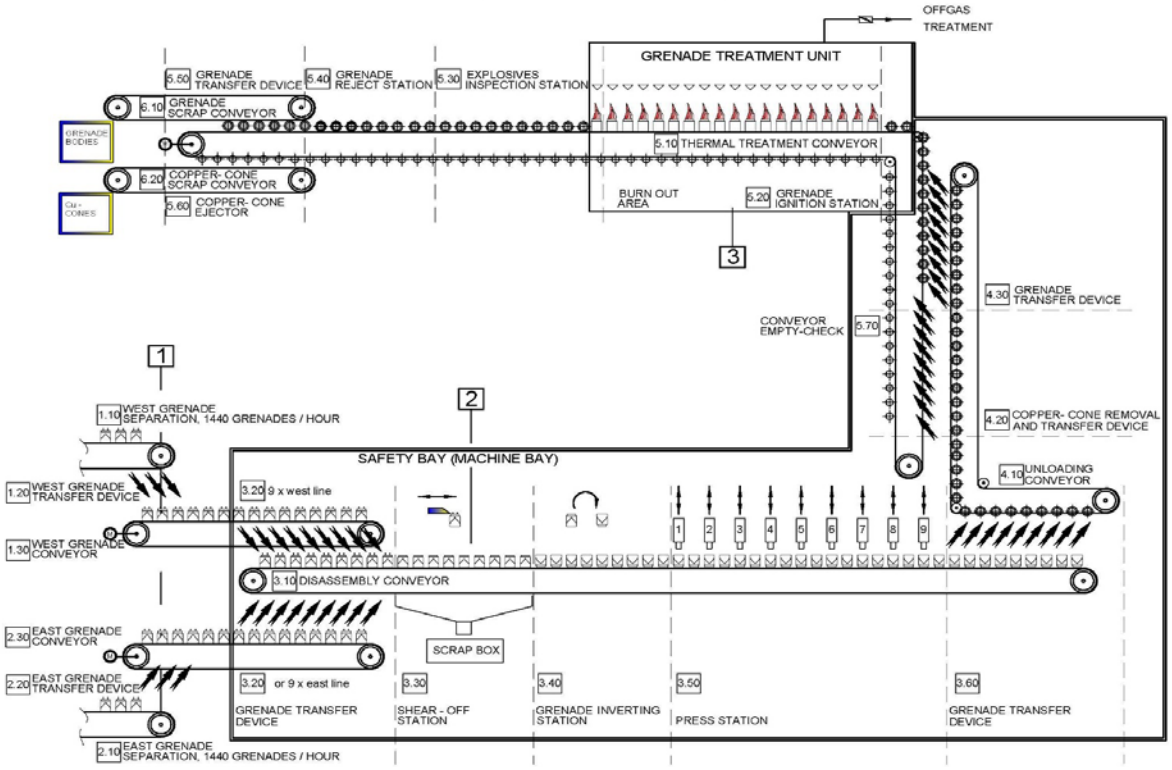
## Treatment of M77 Grenade Submunitions

- Grenade Treatment Unit (GTU) – thermal convey system
- Munitions Destruction System (MDS) – small Dynasafe detonation chamber

# TTCDP Operations

**M77 Grenade Thermal Treatment Closed Disposal Process (TTCDP)**

- **Automated operations to dismantle the grenade**
- **Thermally treats energetics in the grenades and fuses**
- **Results in empty grenade bodies and copper cones for scrap recycling**
- **Design processing rate of 2,300 grenades per hour**



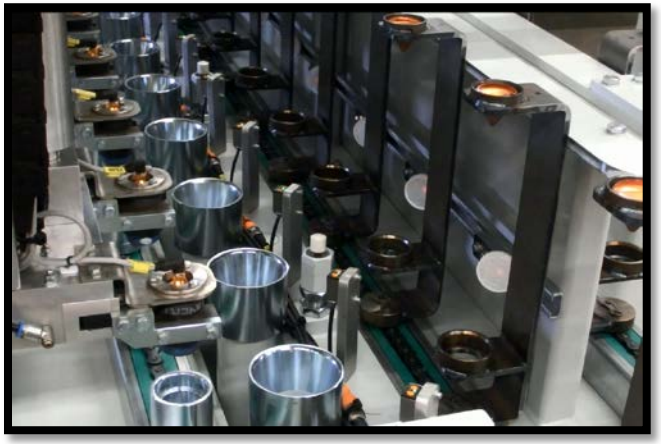

The TTCDP consists of the following Stations:

- Shear Off Station
- Grenade Inverting Station
- Press Station
- Copper Cone Removal Station
- Grenade Transfer Device
- Grenade Ignition Station
- Explosive Inspection Station
- Off Gas Treatment
- Scrap Collection

# Copper Cone Removal

Grenade Press Station

Copper Cone Removal Station



Grenade Transfer Device

# Grenade Ignition

**Grenade Ignition Station**

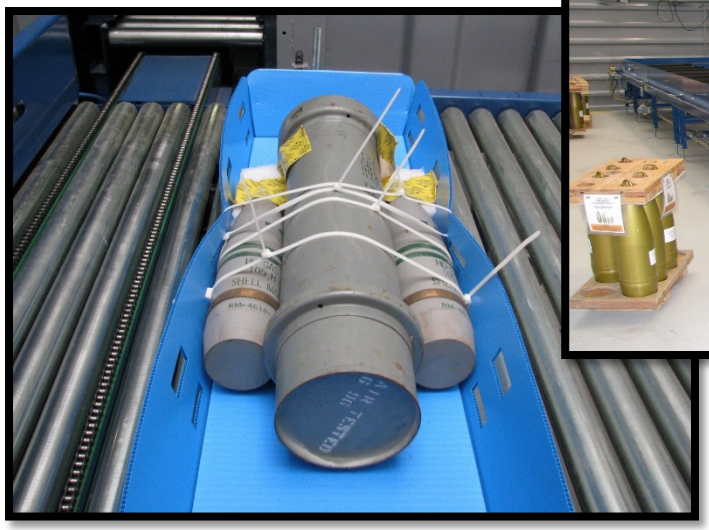
- Grenade ignition is done by electric heated coils that are moved into the grenades.
- A set of 9 grenades is ignited simultaneously
- The off gasses are processed through a HEPA filtration system

# Grenade Fuses

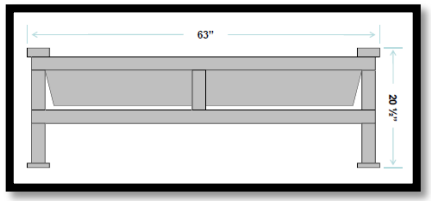
Munitions Destruction System (MDS) for grenade fuses

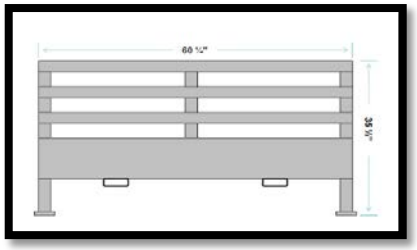
Processed fuses for scrap metal recycle

# Static Detonation Chamber Anniston

# Energetic Treatment Unit
# Anniston




# Energetic Destruction System at Redstone

Energetic Destruction System (EDS)

Redstone Arsenal

# Why OB/OD?

OB and OD will continue to be required for certain munitions and situations:

1. Some munitions items are too large for closed disposal systems
2. Many older/larger munitions were not manufactured in a manner that facilitates disassembly for treatment of individual components
3. Some explosive compounds and munitions may be too unstable for transport
4. Some disposal alternatives do not provide sufficient worker safety

# Spartan Missiles

Spartan Missile Storage

Temporary Berm for Emergency Open Burn

# Summary

Alabama strongly supports alternatives to OB/OD and continues to collaborate with the DoD on permitting alternative treatment technologies as they are identified and developed.

Alabama recognized that OB/OD will continue to be necessary for use in some circumstances where alternative technology is not available or is impracticable, and has developed permitting requirements to ensure protection of human health and the environment.

# Contact Information

Stephen A. Cobb, Chief

ADEM – Land Division

(334) 271-7730

sac@adem.Alabama.gov