

# Subpart X Permitting Group Case Study

Open Detonation Unit

# Black Box – Detonation Pit

- Project Manager – Kevin Regan
- Spokesman – Billy Hendricks
- Team
  - Chris Hurst
  - Josh Woody
  - Garwin Eng
  - Dick Denton
  - Mike Suezzero
  - Sanjay Thirunagari

# Black Box – Detonation Pit

- Inputs
  - Off-spec fireworks
  - Damaged fireworks
- Outputs
  - Air emissions
  - Water emissions
  - Ejected materials
  - Specific substances
    - Metals
    - Nitrates
    - Phosphates

# Black Box – Detonation Pit

- Site considerations
  - Sweep for debris
  - Properly dispose of material collected
  - If intact firework is found, then retreat
- Generator is required to make hazardous waste determination (40 CFR §262.11)
  - Any non-hazardous waste residue must be shipped off-site as solid waste

# Description of Unit

- (BB1) 40' x 40' x 6' reinforced concrete box filled with sand, in ground (like a tank, it stands alone)
- Detonate off-spec fireworks from factory
- Cover fireworks with sand – 30 lb. total weight maximum
- Soil is silt sandstone with limestone aquifer
- No surface water on site
- 5 acre open space in valley with one boundary being a former gravel mine

# Permit Conditions

- Apply only to this unit (BB1)
- Groundwater monitoring must be provided
- Tank integrity checked once per year and certified by a professional engineer
- Run-off and run-on controls
- Precipitation removal

# Inputs

- Waste stream
  - Off-spec fireworks (display type)
  - Damaged fireworks (display type)
  - Packaging for fireworks
- Other
  - Donor charge
  - Dunnage

# Inputs (cont'd)

- Permit Conditions
  - No off-site waste allowed
  - Only commercially available donor charges allowed
  - Non-dunnage will be allowed
  - Waste analysis (maintain batch logs for inspection)
  - Treatment limited to constituents used in finished and off-spec manufacturing of display type fireworks
  - Screen materials such as solvents or prohibited materials for other disposal options



# Process Operations

- Permit Conditions
  - Quantity of waste to be treated limited to less than 30 lb. per event
  - Amount of donor charge must be appropriate to amount of waste treated