Subpart X Permitting Group Case Study

Shredder

Shredder

- Project Manager – Amy Potter
- Spokesman – Shannon Ridley
- Documentation – Toni Evans
- Aid – Roselle Foote
- Team
  - Keith West
  - Mark Harrison
  - Garcia Javier
  - Michael Malires

Permit Conditions

- RCRA Part A Permit Application
- RCRA Part B Permit Application
  - Facility description
  - Federal and state laws
  - Process information (design drawings, treatment, SOPS for treatment processing)
  - Groundwater information
  - Training plan
  - Closure plan
  - Contingency plan
  - Waste characteristics (waste analysis plan)
  - Health & safety plan

Areas of Inspection

- O_2 meter
- Emergency shut-off (for safety and clogs)
- Reverse motor (for clogs)
- Cameras in all shredder chambers
- Door interlock (shredder does not operate if door open)
- Inspect systems for leaks
- Liquid handling system operating properly
- Conveyor operating properly
- Gas handling system
- No manual handling
- Drum feed rate – 5 drums/hr

Areas of Inspection (cont'd)

- Metal separation
- Secondary containment (precipitation, leaks, cracks)
- Daily operating log
- Hydraulic system (doors)
- Blade replacement
- Maintenance schedule
- Air monitoring
- Inspect staging areas (evidence of release)
- Drum labels
- Hoppers closed
- Wash materials (solvents, H_20)
- Training

Inspection Checklist

- Shredder/conveyor/maceration tank
  - Condition of unit (external and internal)
  - Doors and seals (leaks and tightness)
  - Conveyors (leaks and condition)
  - Condition of tank (leaks at seams, pipe couplings, etc.)
  - Condition of containment
    - Presence of liquids
    - Cracks and gaps in base
    - Sealant (intact)
    - Evidence of fugitive emissions or leaks and spills
    - Sumps (liquids, cracks)
    - Condition of roof
    - Condition of berms or curbs

Inspection Checklist (cont'd)

  - Security devices
    - Condition of gates, fencing, locks
- Staging areas/satellite accumulation areas
  - Conditions of containers
    - Labeling
    - Leaking containers
  - Containment (liquids, cracks)
  - Hoppers (labeling, open/closed, leaks)

Inspection Checklist (cont'd)

- Safety and emergency equipment
  - Condition of communication systems
    - Method – telephone, hand-held, intercom, 2-way radios
    - Accessibility of communications
    - Method to communicate while shredder is operating due to noise
  - Condition and operation of shower and eye wash
    - Location
    - Accessibility
  - PPE inventory and condition
    - Workers are wearing proper PPE
  - Fire extinguishers/sprinklers for operating condition
    - Is it charged
    - Number and locations
    - ABC extinguisher for chemical fires

Inspection Checklist (cont'd)

- Inspection & Maintenance Records
  - Planned and unplanned maintenance on shredder and ancillary equipment
  - Inspection conducted each operating shift
  - Remedial actions
  - Accumulation containers and tanks rate of change-out
- Environmental monitoring reports
  - Sampling results, waste analysis
  - Air monitoring data
  - Scrap metal decontamination analysis

Inspection Checklist (cont'd)

- Training records
  - Specific training on unit
  - Operation and wastes
- Compatibility test records
  - Proper waste codes
  - Results of testing
- Waste Minimization
- Recycling solvents and contaminated water from metal wash
- Proper maintenance
- Evaluate waste characteristics
- Group by waste codes

Inspection Checklist (cont'd)

- Decontamination facility – shower, clean and dirty room, employee procedures
- Air emission controls
  - Subpart CC
    - Control device – operation and condition of equipment
    - Piping and door tightness
    - Area around building (evidence of fugitive emissions)
- Record keeping
  - SOPS
    - Unit operation, routine maintenance schedule, monitoring protocol, method and criteria for updating SOPs
  - Operating logs (waste processed in unit)
    - Rate of treatment
    - Cross-reference to manifest numbers, waste codes

Subpart X Permitting Group Case Study

Drum Crusher

Drum Crusher

- Project Manager – Lisa Woodward
- Spokesman – Joe Putnam
- Team
  - Stan Kukier
  - Keith Goff
  - Jamie Smathers
  - Elizabeth Bartlett - Recorder

Maintenance

- Epoxy seal floor
- Tank clean-out schedule
- Facility decontamination between incompatible wastes
- Maintain conveyors
- Maintain air locks, hydraulic ram, maceration tank, fire suppression system, relief valves, communication system, sumps, nitrogen purge system

General Permit Conditions
from CFR §§270.14 and 264, Subpart B

- Facility description; EPA ID #
- Waste characteristics/analysis
- Procedures to prevent hazards
- Contingency plan
- Personnel training
- Closure & post-closure plans
- Groundwater protection
- Surface water protection
- Waste minimization
- Inspections

General Permit Conditions (cont'd)
from CFR §§270.14 and 264, Subpart B

- Financial assurance
- Corrective action
- Security
- Notices
- Recordkeeping
- Construction quality assurance
- Location standards
- Incompatibility requirements

Waste Characterization

- Waste profile
- Test pH, specific gravity
- Composite samples for PCBs
- 10% of containers sampled, composited and sent to lab (if PCB waste, use 10% also)
- Inspect containers
- PCBs analyzed per Methods 3510C and 3620B requirements or equivalent approved method
- Must be manifested

Operating Conditions

- Processing rate
- Decontamination rate
  - Number of drums
  - Incompatible waste streams
- Sampling rates for solids, liquids and air
- Performance standards
- Emission rates
- If shipment fails screening analysis, then shipment can not be processed

Operating Conditions (cont'd)

- Modeling for air emissions to determine permit conditions
- Modeling for normal/upset operating conditions (site specific)
- Sample drinking water wells – make sure sampling includes appropriate constituents

Safety

- Contingency plan
- Secondary containment
- Personnel training
- SOPs for safety equipment
- Incompatible wastes

Separated Metal

- Metal must be managed as hazardous waste for transportation

Monitoring

- Air emission points
- Nitrogen levels
- Processing feed rates
- Secondary containment sumps
- Groundwater monitoring
- Tank levels
- Process monitoring

Inspection Checklist

- Physical condition of unit
- Waste analysis
  - Sampling 10%
  - Recordkeeping
- Containment devices
  - Berms
  - Floor
  - Sumps
- Run-on and run-off control
- Security devices
- Check monitoring well and air emissions data (schedule)

Inspection Checklist (cont'd)

- Satellite accumulation areas
- Hazardous waste storage areas
- Safety and emergency equipment
  - Communication system
  - Emergency shower
  - PPE
  - Fire equipment
  - Alarms
- Air monitoring points and devices
- Sampling locations

Inspection Checklist (cont'd)

- Recordkeeping
  - SOPs
  - Operating log
  - Inspection log
- Tanks
- Waste transfer areas
- Other processing areas

Subpart X Permitting Group Case Study

Hurd Trailer

Hurd Trailer

- Paul – South Carolina
- Brian – Alabama
- Jack – South Carolina

Issues for Permitting

- Operating conditions
  - ≤24 times/year
  - Notification
  - Risk assessment or air pollution control
  - Mobile source
  - Recycling or disposal of residuals
- Emergency conditions
  - <5 times/year
  - Reporting
  - Air monitoring
  - $ fee

Standard Conditions

- Effect of permit – 5 years
- Severability
- Signatory requirement
- Documents to be maintained by owner
  - Operator certification
  - Proper disposal of residuals
  - Documentation of quantity treated
  - Structural integrity testing/inspection
- Annual waste minimization report

General Unit Conditions

- Security
- Inspection requirements
- Design and operation of unit
- Requirements for incompatible waste
- Required equipment
- Testing and maintenance – after each event
- Communitions and alarm system
- Emergency procedures and coordinator

General Unit Conditions (cont'd)

- Operating record
- Closure requirements
- Disposal of residuals properly
- Financial responsibility
- Only treatment may occur in Hurd trailer (no storage or transportation)

Special Conditions

- Notification of agency prior to each event
  - Waste identification
    - D003 (and may carry D008)
      - Small caliber ammunition (22 cal to 20 mm; max per event – 100 lbs.)
      - Class “C” fireworks (1.4.G; max per event – 30 lbs.)
  - Method of treatment
    - Hurd trailer
      - Length: 12 feet
      - Width: 6 feet
      - Height: 6 feet
      - Stack Height: 6 feet
      - Top inside diameter: 15.13 feet

Special Conditions (cont'd)

- Fueled by LP gas (5 lbs/hour capacity)
- Lead recovery door (beneath)
- Entrance door
- Screen above floor (for waste loading)

– Computation of required burn time

– Location
  - Minimum 50 feet setback distance – per 40 CFR §264 (note: setback distance minimum to be determined based on calculated distance setback for unit failure)
  - Obtain written permission from property owner
  - Treatment shall occur between 8 am and 5 pm, Monday - Friday

Special Conditions (cont'd)

- Disposal of residue
  - Inspect residue to ensure proper treatment
  - Remove residue the same day treatment occurs
  - Make waste determination of residue
    - Hazardous
    - Non-hazardous
    - Recyclable material
  - Document destination/disposal of residue

Special Conditions (cont'd)

- Required equipment
  - Air pollution control device (APCD) (to be negotiated with owner to address issues such as PM 10, Pb, projectibles)
- Compliance schedule
  - APCD to be installed prior to use
  - Notification of the agency at least 2 weeks before event
  - Final report due within 30 days of event
    - Documentation of residue disposal
    - Length of event
    - Documentation of any events not described in notification

Inspection Checklist

- Structural integrity of the unit
- Air pollution control equipment is functional
- Structural integrity of the trailer
- Integrity of LP gas
- Residue has been properly removed from Hurd trailer to avoid storage issues

Subpart X Permitting Group Case Study

Open Burn Unit

General Conditions

- Effects of permit
- Permit actions
- Severability
- Duties and requirements
- Signatory requirements
- Documentation
- Closure/post-closure plan
- Contingency plan
- Security
- Training

General Conditions (cont'd)

- Reporting/notification
- Waste analysis
- Risk assessment
- LDR evaluation
- Compliance schedules
- Waste minimization
- Health and safety plan

Operating Conditions

- Elevate pan
- Professional Engineering approved screen and pan design
- Pre/post-burn structural integrity pan inspection
- Tie down screen
- Cover pan when not in use
- Use rounded screen for potential pop-out and flat screen for burn dispersion of ash
- Clean pans with dedicated disposable equipment
- Pick-up fragments and inspect area after treatment as described in risk assessment
- Screen doors must remain closed unless loading/unloading

Operating Conditions (cont'd)

- Secondary containment required – facility proposed
- Run-on/run-off control
  - Buffer between pan and screen
  - Man-made wetlands beyond unit boundary
- Only black powder may be used for initiating ignition
- Treatment Operations
  - Remain 50 ft. from treatment area during burning
  - Burn time less than 5 minutes
  - Alternate pans when igniting
  - Operate during daylight hours
  - No liquid wastes

Operating Conditions (cont'd)

  - No solvents
  - No mixture of munitions/pyrotechnics/fireworks
  - Meteorological conditions
    - Wind speed $3 < \varnothing < 20$ mph
    - Wind direction
    - No chance of precipitation
    - Cloud height
    - Air temperature
  - Determine maximum amount per day/year
- No farming, grazing, or fishing based on risk assessment determination

Operating Conditions (cont'd)

- Segregate units as special units for potential TCLP waste
- Every year re-evaluate treatment process
- Residues placed in 55-gallon drums in a satellite accumulation area
- Modeling for air emissions to determine permit conditions
- Modeling for normal/upset operating conditions (site specific)
- Sample drinking water wells – make sure sampling includes appropriate constituents

Monitoring

- Quarterly sampling of the following media:
  - Groundwater
  - Soil
  - Air
  - Surface water

Inspection Checklist

- Physical conditions
  - Burn units
    - Burn pit meets technical specifications in unit description
    - Integrity of primary treatment pan (warping, deterioration, seams, bolts & clips, cracks, rusting, scaling)
    - Condition of screens (large openings, pop-out potential)
    - Support structure (differential settling, adequate clearance from soil)
    - Secondary containment
      - Integrity (liners, water run-off control, damage to berm
      - Ponding water
      - Ash/residue inside containment area

Inspection Checklist (cont'd)

- Operating Conditions
  - Emergency and safety concerns
    - Communications check (fire, police, government)
    - PPE check (gloves, clothing, etc.)
    - Fire equipment
  - Storage area
    - Containers (condition, labeling, manifests)
    - Containment area (covered, containment grounded)
    - Transfer methods
    - Satellite storage
    - Records

Inspection Checklist (cont'd)

- Precipitation controls
  - Run-on/run-off control
  - Collection system
  - Roll-off lid and covers used
- Weather conditions
  - Wind direction/speed/wind sock
  - Temperature
  - Inversions and forecasts
- Treatment area
  - Vegetation condition
  - Fire prevention clearances
  - Security devices (fencing, signs, etc.)

Inspection Checklist (cont'd)

- Records/reporting
  - SOP
  - Operating log (burn amounts, burn type, number pans used, burn time, appearance)
  - Environmental monitoring reports (soil, surface water, groundwater)
  - Weather reporting (wind speed/direction, precipitation/forecast, air temperature, inversions, data source)
  - WAP

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