ATTACHMENT 1-9
CHWSF CONTAINER MANAGEMENT

1.0 INTRODUCTION

1.1 This Attachment provides information about the management of containers in U.S. Army Dugway Proving Ground's (DPG's) Container Storage Building at the Central Hazardous Waste Storage Facility (CHWSF) as required in 40 Code of Federal Regulations (CFR) §§264.170 through 179 and Utah Administrative Code R315-8-9.

1.2 This Attachment is organized in the following sections:
- Container Storage Area and
- References.

2.0 CONTAINER STORAGE AREA

2.0.1 This section describes the physical location of the CHWSF, the different buildings that compose the CHWSF, and the types of waste stored in each building.

2.0.2 The CHWSF was constructed to provide an adequate central storage area for the accumulation of hazardous waste from all outlying temporary storage areas prior to transportation to off-site treatment and disposal. The CHWSF receives wastes such as spent solvents, paints and paint thinners, battery acid, contaminated fuels, discarded lab chemicals, and decontamination solutions. For a description of the wastes managed at the CHWSF, see Attachment 1-1.

2.0.3 The CHWSF is located 2.3 miles west of Fries Park as shown on the location map in Figure 1. Plans and elevations of the Container Storage Building were presented in File Document 6 during the Part A Permit Application process and is included as a reference in this permit.

2.0.4 Operations at the CHWSF are performed in accordance with the following documents:
- Standing Operating Procedure (SOP) HWSF-01 for the CHWSF,
- SOP HWSF-02 for Sampling Hazardous Waste/Materials,
- SOP HWSF-03 for Pick-Up and Transportation of Hazardous Waste,
- 49 CFR 173 Subpart B and the 49 CFR §172.101 Hazardous Materials Table, and
- Compatibility of Hazardous Wastes U.S. Environmental Protection Agency (EPA) 600 2-80-076, April 1980.

2.0.5 Within the fenced compound of the CHWSF are three buildings: the Container Storage Building, and the Polychlorinated Biphenyl (PCB) Storage Building, and a Storage Building. The CHWSF office trailers are located outside the south gate to the compound.

2.0.6 The Container Storage Building (Building 6672) was designed to provide covered storage in a fully enclosed, prefabricated metal building having plan dimensions of 60 feet by 120 feet with an area of 7,200 square feet. The Container Storage Building has an overhead door for the forklift, as well as a personnel door, along the south side; a second personnel door is located along the north side of the building.

2.0.7 Building 6674, the PCB Storage Building, is a Quonset hut located at the east side of the CHWSF. Polychlorinated biphenyl (PCB) wastes are regulated under the Toxic Substances

Control Act (TSCA). TSCA requirements are not addressed in this permit.

2.0.8 Standard operating procedures for sampling, tracking, lab packing and orphan waste management are listed below:

- SOP HWSF-02 for Sampling Hazardous Waste/Materials,
- SOP HWSF-14 for Tracking Hazardous Waste,
- SOP HWSF-13 for Management of Orphan Wastes, and
- SOP HWSF-20 for Lab Packing.

2.0.9 This section includes the following information regarding storage of waste at the CHWSF:

- Description of Containers,
- Drum Handling,
- Aisle Space and Container Storage,
- Security,
- Inspection,
- Clean Up of Spills and Leaks,
- Overpacking and Recontainerizing,
- Corrective Action,
- Emergency Shower,
- Secondary Containment System,
- Requirement for the Base or Liner to Contain Liquids,
- Containment System Capacity,
- Control of Run-On, and
- Removal of Liquids from Containment System.

2.1 DESCRIPTION OF CONTAINERS: 40 CFR 264.171 and 264.172; R315-8-9.2 and 8-9.3

2.1.1 DPG uses only U.S. Department of Transportation (DOT)-approved containers and drums for hazardous waste storage at the CHWSF. Generally, wastes are stored in 5-, 8-, 10-, 15-, 20-, 30-, and 55-gallon steel or polyethylene drums. Eighty five- (85) gallon and 95-gallon drums are used for overpacks and extra overpack drums are maintained at the facility.

2.1.2 All appropriate DOT containers may be used for storage of solid and liquid hazardous wastes. Small bottles, jugs, etc. of waste chemicals may be stored in appropriate storage cabinets. In addition, all solid F999 wastes will be stored in appropriate containers and may be stored on pallets.

2.1.3 DPG uses 49 CFR **§**173 Subpart B and the Hazardous Materials Table in 49 CFR **§**172.101 to match waste types to container types. In addition, Compatibility of Hazardous Wastes EPA 600/2-80-076 will be used to match drums to waste types as well as segregate wastes. New, used, and reconditioned containers are used. If a container is damaged after it is filled, it is overpacked to ensure proper storage of hazardous waste. All drums bear hazardous waste labels and hazard class labels. The hazard class labels identify whether the waste is corrosive, ignitable, or reactive.

2.2 DRUM HANDLING: 40 CFR 264.173; R315-8-9.4

2.2.0 Drum handling is discussed under the following headings:

- Receiving,
- Logging In,

- Inspecting,
- Storing, and
- Preparing for Off-site Shipment.

2.2.1 Receiving

2.2.1.0 Material will be brought to the CHWSF by the on-site generators or picked up and transported by the CHWSF operations contractor. The generators and the CHWSF operations contractor transport containerized wastes in flatbed or pickup trucks from the DPG generator sites to the loading/unloading areas at the CHWSF, where the CHWSF personnel use material handling equipment (MHE) to load and unload the containers.

2.2.1.1 As described in the CHWSF part of Attachment 1-6, Sections 2.1 and 2.5, Unloading Operations and Personal Protective Equipment, respectively, the generators and storage facility personnel involved in unloading the hazardous wastes will be equipped with proper material handling and personal protective equipment (PPE) at all times. A large forklift is dedicated for service at the CHWSF to load and unload containers and move pallets and individual drums of hazardous waste. A two-wheeled drum cart is also available to move individual drums at the CHWSF. The MHE is used to move the containers from the loading/unloading areas into the Container Storage Building. Entry into the Container Storage Building is through an overhead door located on the south side of the building next to the loading/unloading area.

2.1.1.2 The CHWSF personnel unload all containers as they are delivered. In no case will containers remain loaded on transport vehicles parked at the CHWSF for a time period exceeding 24 hours prior to being accepted and placed in storage at the Container Storage Building. The 24-hour period starts on the day that the transport vehicle arrives at the storage area and the hazardous waste load is logged in the facility.

2.2.2 Logging In

2.2.2.1 All containers stored at the CHWSF have identifying labels and bar codes. A description of the characteristics and/or hazardous constituents of the waste in each container is on file at the CHWSF. Waste must be properly marked, labeled, containerized and documented prior to acceptance into the CHWSF.

2.2.2.2 All material accepted into the CHWSF is logged in a computer database, which is backed up weekly on the DPG network drive. The operating record is the responsibility of the CHWSF Manager and provides all basic information about the container including, at a minimum, the container number, the date of receipt and shipment, material name, weight, volume and hazard class, waste codes, generator name, location in the Container Storage Building and other information as outlined in 40 CFR §264.73. The CHWSF operator may include additional information in the computer database for his own purpose. The operating record is reviewed daily for completeness and accuracy. A separate log of weekly inspection requirements is also maintained in accordance with the procedures established in Attachment 1-3, Inspection Schedule, for this permit.

2.2.3 Inspecting

2.2.3.1 At the time of acceptance from the generator, the CHWSF Manager, or an authorized representative, is responsible to perform an inspection of drums to assure compliance with DOT,

Resource Conservation and Recovery Act, Utah Division of Solid and Hazardous Waste, and local regulations. This inspection includes review of the drum-specific data contained in the process knowledge and analytical information provided by the generator prior to scheduling transport of the containers from the on-site generator to the CHWSF. In addition, the following information is verified:

- Integrity of the containers (e.g., rusty, leaking, bulges),
- Accuracy and completeness of information on all container labels,
- All analytical information,
- Volume of waste in each container,
- Proper sealing of containers, and
- Weights of containers.

2.2.3.2 The CHWSF manager, or an authorized representative, inspects all containers within the CHWSF on a weekly basis. All containers are examined for leaks, container deterioration, storage stability, storage compatibility, and general safety. Problems are corrected upon discovery.

2.2.4 Storing

2.2.4.1 Incoming wastes will be segregated in accordance with Compatibility of Hazardous Wastes, EPA 600/2-80-076. A location in a particular containment bay in the Container Storage Building will be assigned by CHWSF personnel in order to minimize potential dangers. Although each containment bay generally stores a particular group of wastes defined by hazard class and compatibility, an empty bay may be reassigned for storage of drums containing waste of a different hazard class and compatibility. The CHWSF project manager and lead technician is authorized to reassign waste groups to empty bays. The CHWSF project manager or lead technician uses the floor plan in Figure 2 to indicate the containment bay where each waste group is stored. The floor plan is posted in the CHWSF office and must be immediately updated when there is a reassignment of waste groups to different containment bays.

2.2.4.2 Extreme care is used at all times when dealing with these wastes. The containers are not opened, handled, or stored in a manner that may cause them to rupture or leak. All containers are stored on pallets in the Container Storage Building. The containers are always closed, except when adding or removing waste. If CHWSF personnel discover any potential hazards while moving containers, they report it immediately to the CHWSF Manager or lead technician and appropriate measures will be taken to correct the problem.

2.2.5 Preparing for Off-Site Shipment

2.2.5.1 The procedures used for loading drums at the CHWSF for off-site disposal are similar to those used during unloading of containers from on-site generators by CHWSF personnel (SOP HWSF-03). When the transportation vehicle arrives to pick up stored wastes for off-site disposal, CHWSF personnel assist in the loading operations with a forklift. DPG or their authorized representative prepares and signs the manifest. Personnel handling the waste review all safety requirements before loading the vehicle. No employee handles hazardous waste unless proper safety equipment is available and the hazards are known. The training required for the CHWSF personnel is described in Attachment 1-4.

2.2.5.2 Small containers of waste chemicals are lab-packed by CHWSF personnel in accordance with 40 CFR 264.316 and 268.42(c) and SOP HWSF-20, Lab Packing Operations. After the material is loaded for off-site shipment, CHWSF personnel will update the facility operating record. The

manifest and a copy of the turn-in document are consolidated and attached together for filing. The CHWSF Project Manager assures that the containers are properly documented in the operating record prior to filing the manifest and attached documents. The manifest document number files the documents. The manifest numbers are listed in the operating record and provide ready access to information for any shipment. All hazardous wastes are shipped off-site with a uniform hazardous waste manifest and all appropriate documentation needed to comply with the land-disposal restrictions.

2.3 AISLE SPACE AND CONTAINER STORAGE

2.3.1 As shown in the drawings in File Document 6, the Container Storage Building is designed as a series of containment bays that can each contain up to 28 55-gallon drums or their equivalent volume of 1,540 gallons. The building has 16 bays, with each bay holding a maximum of 28 drums (16 drums on pallets on the floor, and 12 drums on pallets on the shelving). Therefore, the maximum capacity of the building is 448 55-gallon drums or their equivalent volume of 24,640 gallons. The aisle width between bays is 14 feet 10 inches. Containers are stored on pallets and may be stacked on shelving within the containment bays; however, drums on the shelving may only be stacked one high. The design of each bay allows the storage of one row of pallets along its length. A maximum depth of two drums is possible in each bay. It is possible to walk behind each bay to inspect drums from behind (see Figures 3 and 4).

2.3.2 The Container Storage Building also includes five chemical storage cabinets for small quantities of waste laboratory chemicals. These chemicals are segregated by compatibility and stored in the cabinets until they are lab-packed and transported to an off-site treatment, storage, and disposal facility. The cabinets are located in the southwest corner of the Container Storage Building. The secondary containment for each of these cabinets is provided in the base of the cabinet; three of the cabinets provide additional containment on the shelving. The total storage capacity for all chemical storage cabinets is 240 gallons, which will not be exceeded. Therefore, the total storage capacity of containment bays (24,640 gallons) and chemical storage cabinets (240 gallons) is 24,880 gallons. CHWSF personnel handle the waste chemical containers manually.

2.4 SECURITY

2.4.1 DPG follows the requirements of 40 CFR §264.14 for maintenance of security at the CHWSF. An 8-foot-high chain-link fence surrounds the CHWSF with locked double gates at the driveways leading into the northeast and southeast corners of the site. Signs with the legend, "Danger -- Unauthorized Personnel Keep Out," are posted on all sides of the fence and are legible from a distance of at least 25 feet. The double gates are unlocked only when the CHWSF personnel are on-site. Additional information on security is provided in Attachment 1-2.

2.4.2 Several telephone extensions are presently in use at the CHWSF which serve telephones located in the office trailers and a phone in the Container Storage Building. A separate telephone extension, (435) 831-2195, serves a telephone located outdoors along the north fence near the double gate at the northeast driveway for the CHWSF.

2.5 INSPECTION

2.5.1 Weekly inspections are conducted of the CHWSF security devices, safety equipment, storage areas, emergency devices, and overall CHWSF Operations and Maintenance. The inspector notes problems found and records corrective actions taken on inspection forms. Inspection procedures

and forms are presented in detail in Attachments 1-3 and 1-6.

2.6 CLEAN UP OF SPILLS AND LEAKS

2.6.1 The procedures for clean-up of spills and leaks of containers are presented in Attachment 1-7.

2.7 OVERPACKING AND RECONTAINERIZING

2.7.1 Containers that are rusting, bulging, or displaying other defects are overpacked or recontainerized, i.e., replacement of the container, when the original container is unsafe for storage.

2.7.2 New drums are used to recontainerize or overpack containers that deteriorate. For example, the old drums of waste collected during the cleanup of DPG during the late 1980s were replaced with new drums if the original container was damaged, badly corroded, or deteriorating in some other manner. Drums containing commercial chemicals may be recycled to hold hazardous wastes similar to the commercial chemicals that they originally held.

2.8 CORRECTIVE ACTION

2.8.1 Sumps in the Container Storage Building are inspected daily. All spills, leaks, or other problems are cleaned up or corrected upon discovery. If substances are found in a sump, the source of the release is located, corrective action is taken, and the action is noted in the operating record.

2.9 EMERGENCY SHOWER

2.9.1 An emergency shower unit for personnel is located in the southeast corner of the Container Storage Building. The shower unit has a self-contained water supply. Wastewater is collected in the shower and discharged to an underground storage tank located outside the southeast corner of the Container Storage Building. Following each use, the wastewater is sampled to determine whether it is hazardous or non-hazardous, and disposed of accordingly.

2.10 SECONDARY CONTAINMENT SYSTEM: 40 CFR 264.175(a) and (b)(2), 264.175(d); R315-8-9.6(a), 8-9.6(b)(2), 8-9.6(d)

2.10.1 The layout of the Container Storage Building is shown in Figures 2 through 4, and File Document 6. As shown in the drawings, the containment area is completely enclosed to prevent precipitation from accumulating in the containment area trenches. To direct drainage away from the storage areas, the floor is designed with a 0.25 inch per foot slope to trenches located along the back of each containment bay. The trenches in the Container Storage Building are 22 feet long by one foot wide by one foot deep and are not continuous between containment bays. A six-inch- wide curb surrounds each bay, except on the open, upgradient entry side. There are two six-inch-wide curbs where the bays are located next to each other, which create a one-foot thick wall between the trenches of adjacent bays. This design allows for the segregation of spilled wastes from other containment bays. The trenches are constructed of concrete and sloped to drain to sumps. Each trench has a volume of 22 cubic feet, or approximately 164.6 gallons, which is 10.7 percent of the maximum volume of waste (28 drums or 1,540 gallons) stored in each bay.

2.10.2 Calculations for the storage capacity of the Container Storage Building are provided in Section 2.12 of this Attachment, Containment System Capacity.

2.11 REQUIREMENT FOR THE BASE OR LINER TO CONTAIN LIQUIDS: 40 CFR 264.175(b)(1); R315-8-9.6(b)(1)

2.11.1 Several design features were used to ensure that the concrete floor slab or base of the Container Storage Building has the capability to contain liquids in the event of an accidental release. To prevent cracks or gaps from developing, the floor slab was designed with construction joints placed lengthwise at a spacing of 30 feet and control joints placed widthwise at a spacing of 14 feet 10 inches. The details of this construction are shown in File Document 6. The control joints are not located in the storage bays, but only in the aisle space areas. DPG's engineering inspectors to ensure compliance with the design monitored the construction of the building. Because the Container Storage Building was constructed in accordance with the design drawings, there was no need to produce as-built drawings. To provide a base that would be impervious to precipitation, or any type of waste that could accidentally be released, an epoxy sealant was placed over the finished concrete surface. The epoxy sealant was inspected by DPG's engineering inspectors and found to have been properly applied.

2.12 CONTAINMENT SYSTEM CAPACITY: 40 CFR 264.175(b)(3); R315- 8-9.6(b)(3)

2.12.0 The following calculations demonstrate that the Container Storage Building's containment system has sufficient capacity to contain 10-percent of the maximum volume of the containers that could be stored in the Container Storage Building (see File Document 6).

2.12.1 <u>Outer Trenches</u>

10 (number of bays) x 22 ft (l trench) x 1 ft (w trench) x 1 ft (h trench) = 220 ft^3

where: ft = feet
l = length
w = width
h = height
ft^3 = cubic feet

2.12.2 <u>Inner Trenches</u>

6 (number of bays) x 22 ft x 1 ft x 1 ft = 132 ft^3

where: ft = feet
ft^3 = cubic feet

2.12.3 <u>Total Containment Capacity of the Trenches</u>

220 ft^3 + 132 ft^3 = 352 ft^3

or

352 ft^3 x 7.48 gal/ft^3 = 2,633 gal

where: ft^3 = cubic feet
gal = gallon

2.12.4 <u>Maximum Volume of Waste Stored</u>

448 drums x 55 gal/drum = 24,640 gal

where: gal = gallon

2,633 gallons containment capacity of the trench calculated in Section 2.12.3 is approximately 10.7 percent of 24,640 gallons maximum waste stored.

2.13 CONTROL OF RUN-ON: 40 CFR 264.175(b)(4); R315-8- 9.6(b)(4)

2.13.1 The Container Storage Building was constructed as an enclosed building and is raised 8 inches above the finish grade surrounding it. There is no run-off into the building since all entrance areas slope away from the building toward the finish grade.

2.14 REMOVAL OF LIQUIDS FROM CONTAINMENT SYSTEM: 40 CFR 264.175(b)(5); R315-8-9.6(b)(5)

2.14.1 At the Container Storage Building, small quantities of liquids (e.g., puddles) will be removed from the secondary containment trenches by using absorbent and removal equipment. Cleanup materials used to absorb hazardous wastes will be managed as hazardous waste. Cleanup materials used to absorb non-hazardous waste will be managed as non-hazardous waste. Reusable equipment is decontaminated prior to storage for re-use.

2.14.2 Larger quantities of liquid will be pumped from the sump(s) into DOT-approved containers. The source of the leak will be determined and the spilled liquid will be managed as appropriate.

2.14.3 All personnel wear appropriate PPE during any clean-up operations at the CHWSF.

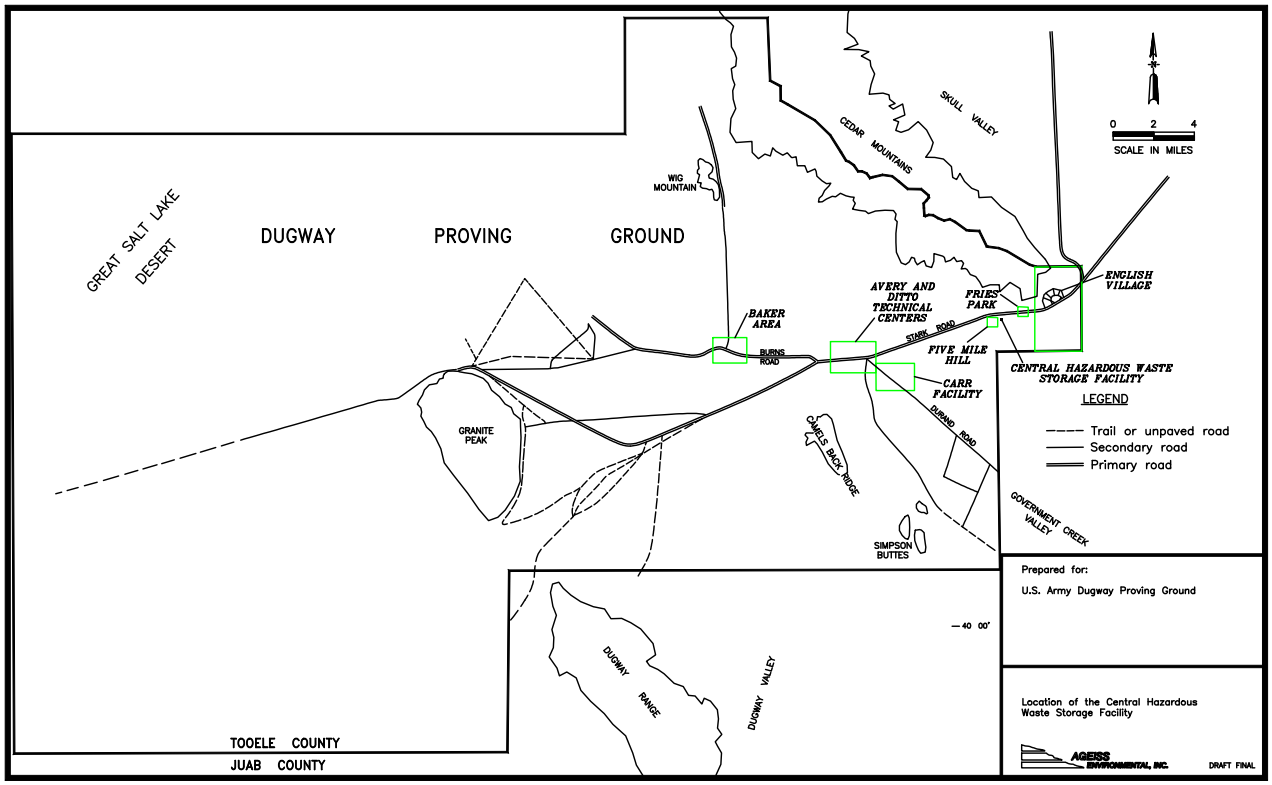
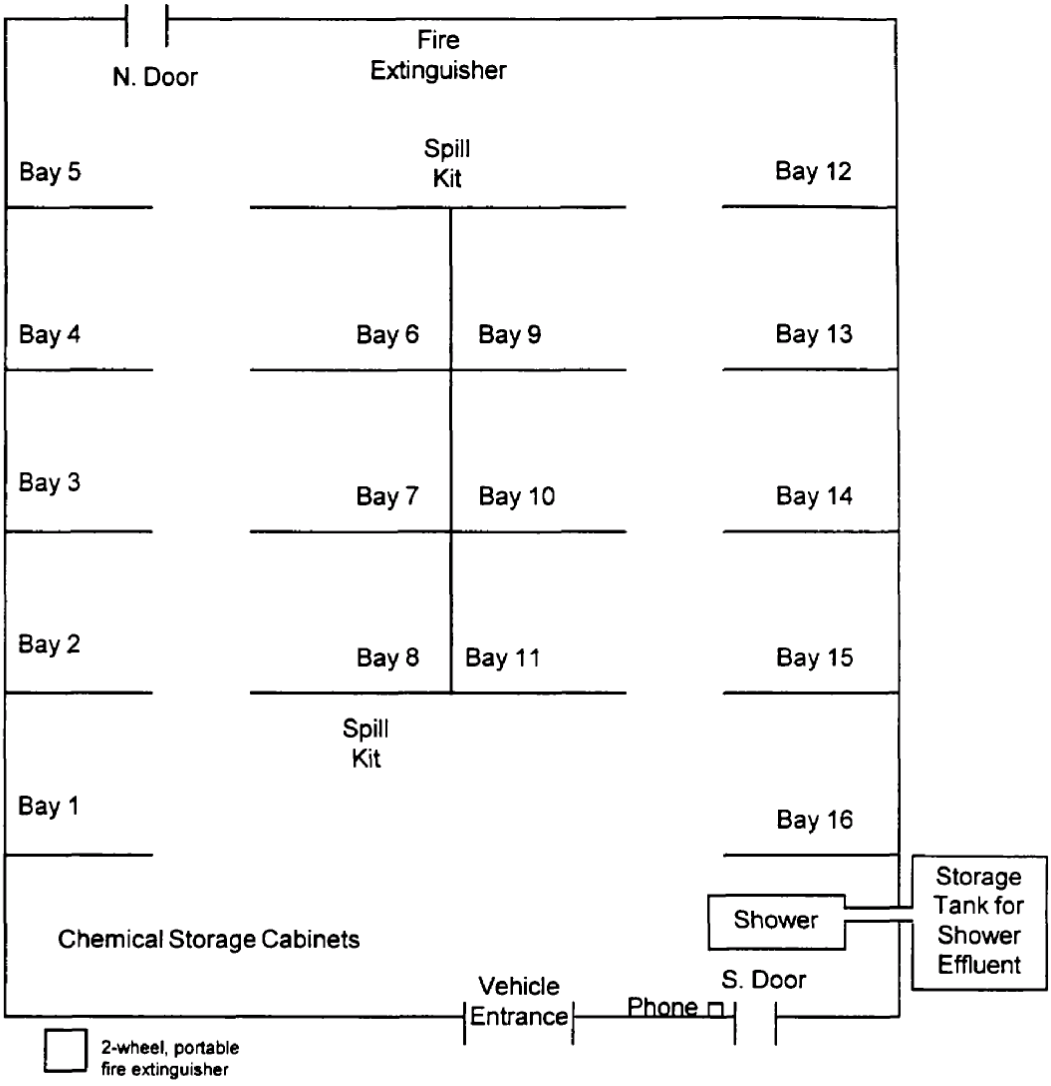


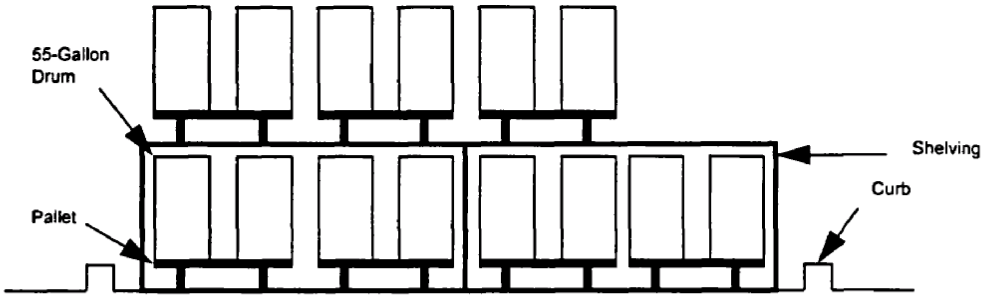
Figure 1. Location of the Central Hazardous Waste Storage Facility

Figure 2. Representative Storage Plan* for the Container Storage Building

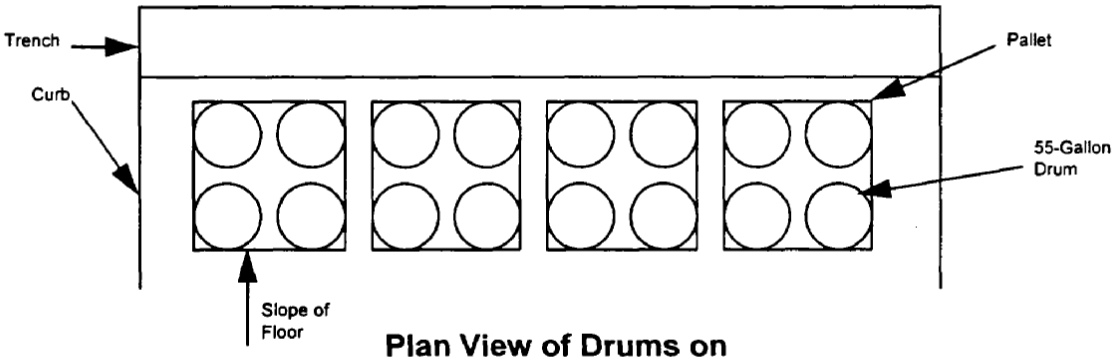


* Storage is based on availibility and will vary. Multiple and unique hazards need to be isolated. This is a representative plan that has been changed as the waste inventory has fluctuated in each general waste category.

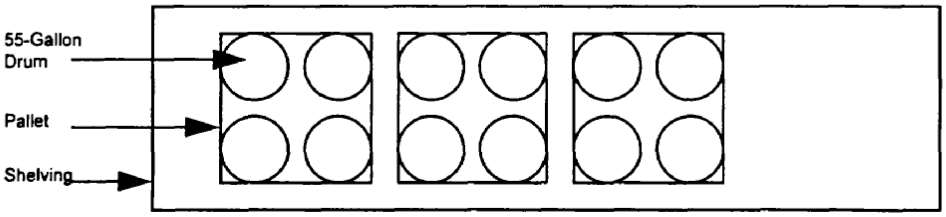
Figure 3. Layout of 55-Gallon Drums in Storage Bay



Front View of Storage Bay

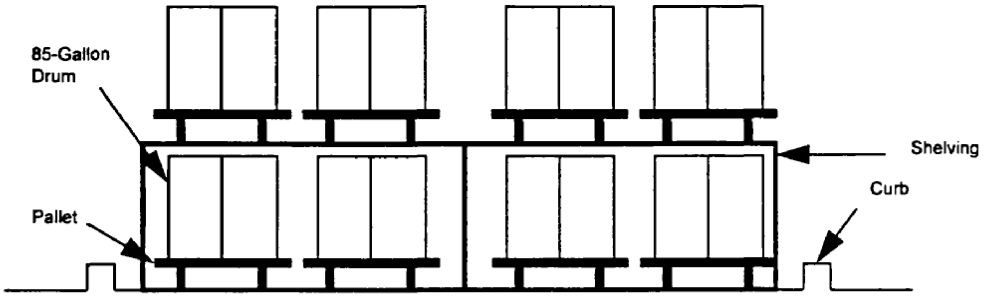


Plan View of Drums on Floor of Storage Bay

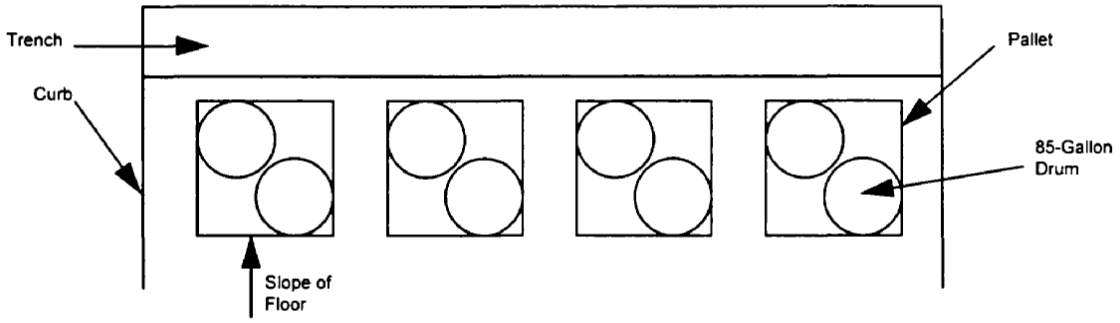


Plan View of Drums on Shelving of Storage Bay

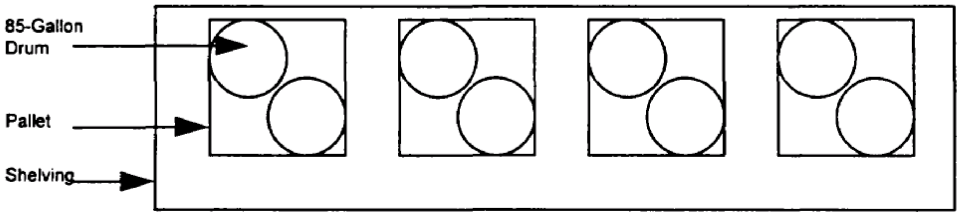
Figure 4. Layout of 85-Gallon Drums in Storage Bay



Front View of Storage Bay



Plan View of Drums on Floor of Storage Bay



Plan View of Drums on Shelving of Storage Bay