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PART III, OPERATING UNIT GROUP 9
T-PLANT COMPLEX

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C FACILITY DESCRIPTION AND PROCESS INFORMATION

C.1 T-Plant Complex (T-Plant) Description

The T-Plant Complex Operating Unit Group (T-Plant) is located in the 200 West Area of the Hanford Site. The primary missions of T-Plant are treatment of dangerous and/or mixed waste and storage of non-containerized and containerized dangerous and mixed waste (to include MLLW). Additional missions include characterization of Waste Retrieval Project (WRP) retrieved waste, container venting, verification sampling, treatment, and repackaging of dangerous and mixed waste. The following wastes may be managed at the T-Plant Operating Unit Group: dangerous or mixed waste that is generated from processes at the Hanford site, or waste that is specifically identified in Section II, paragraph 8 of the Settlement Agreement re: Washington v. Bodman, Civil No. 2:30-cv-05018-AAM, January 6, 2006. No other wastes may be managed at T-Plant unless authorized via a permit modification decision pursuant to Permit Condition I.C.3. Requests for Permit modifications must be accompanied by an evaluation adequate for Ecology to comply with SEPA.

Figure C.1 is an Aerial photo of T-Plant.

The mission of T-Plant is dynamic in nature. Wastes that can be managed at T-Plant include low-level waste, mixed low-level waste, transuranic waste, mixed transuranic waste, hazardous/dangerous waste and TSCA PCB waste. The multiple outside storage areas with different configurations provide the operational flexibility to support the dynamic nature of waste management activities at T-Plant. In some cases, physical separation between large containers is required to meet Atomic Energy Act controls, while in other cases large volumes of low-level waste are stored to allow for economic disposal of the waste.

T-Plant’s recent campaign is the venting and repackaging of mixed transuranic waste stored in drums to meet off-site waste disposal acceptance criteria. Future campaigns could include size reduction of large objects, treatment of high-level radioactive waste, or decontamination activities. Because of the size and complexity of the facility, T-Plant may be used for activities supporting cleanup of the Hanford Site. The different levels of radioactivity and container types associated with these activities require different storage configurations than those of drums.
C.1.1 T-Plant Dangerous Waste Management Units

T-Plant consists of the following dangerous waste management units (DWMUs) where dangerous and mixed waste is treated or stored. The type of dangerous waste management unit and the corresponding treatment authorization is indicated in Table C.1.

The T-Plant consists of the following indoor dangerous waste management units:

- 221-T Building
- 221-T Canyon Deck
- 221-T Cells
- 221-T Tank System*
- 221-T Railroad Tunnel
- 221-T Head End
- 2706-T Buildings
- 2706-T Building
- 2706-TA Building
- 2706-TB Building
- 214-T Building

The T-Plant consists of the following outdoor dangerous waste management units:

- 2706-T Storage Yard
- 2706-T Asphalt Pad
- Dangerous and Mixed Waste Storage Modules
  - HS-030 Storage Module
  - HS-031 Storage Module
  - HS-032 Storage Module
- 211-T Cage
- 221-T R-5 Waste Storage Area
- 221-TA Storage Area
- 243-T Covered Storage Pad
- 221-T Sand Filter Storage Area
- 211-T Pad
- 221-T BY Storage Area

*The 221-T Tank System which includes, the 211-T collection sump, tank 6-1 in canyon cell 6L, tank 5-7 in canyon cell 5R, tanks 5-6 and 5-9 in canyon cell 5L, tank 11R in canyon cell 11R, and tank 15-1 in canyon cell 15R, is identified for closure and is not authorized to accept waste. The last waste receipt into the 221-T Tank System occurred on June 3, 1999. The 221-T Tank System will be closed in conjunction with closure of the 221-T Canyon Building.

Table C.1 describes the T-Plant Complex dangerous waste management units. Treatment and storage activities occur within the authorized dangerous waste management units as indicated.
### Table C.1 Summary of T-Plant Dangerous Waste Management Units

<table>
<thead>
<tr>
<th>Management Unit Type</th>
<th>T-Plant Operating Unit Group DWMUs</th>
<th>Part A Treatment Type</th>
<th>Part A Storage Type</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Container (storage)</strong></td>
<td>221-T Head End, 211-T Cage, 221-TA Storage Area, 221-T R-5 Waste Storage Area, 221-T Sand Filter Storage Area, 211-T Pad, 214-T Building, 2706-T Storage Yard, 2706-T Asphalt Pad, 243-T Covered Storage Pad, 221-T BY Storage Area, HS-030 Storage Module, HS-031 Storage Module, HS-032 Storage Module</td>
<td>N/A</td>
<td>S01$^3$</td>
</tr>
<tr>
<td><strong>Container (storage and treatment)</strong></td>
<td>221-T Railroad Tunnel</td>
<td>T04$^3$</td>
<td>S01$^3$</td>
</tr>
<tr>
<td><strong>Tank (storage)</strong></td>
<td>221-T Building (221-T Tank System)</td>
<td>N/A</td>
<td>S02$^4$</td>
</tr>
<tr>
<td><strong>Containment Building (storage and treatment)</strong></td>
<td>221-T Cells, 221-T Canyon Deck</td>
<td>T04$^5$</td>
<td>S06$^5$</td>
</tr>
<tr>
<td><strong>Miscellaneous Unit (storage and treatment)</strong></td>
<td>2706-T Building, 2706-TA Buildings</td>
<td>T04$^6$, X99$^6$</td>
<td>S01$^6$, X99$^6$</td>
</tr>
</tbody>
</table>

1. Container storage  
2. Tank storage  
3. Containment building storage  
4. Miscellaneous unit storage and treatment

These buildings, storage pads/areas, and storage modules provide space for storing waste containers, bulk waste in the canyon cells, and for treating waste. The following section provides a description of each of the authorized dangerous waste management units within the T-Plant Operating Unit Group.
C.1.1.1 221-T Canyon Building

The 221-T Canyon Building contains multiple storage and treatment, and storage only dangerous waste management units. Table C.1 identifies the names and types of units. The dangerous waste management unit types can be categorized as containers (Section C.2.2 and C.2.3), tanks (Section C.2.4), miscellaneous unit (C.2.7), and containment building (Section C.2.6).

The 221-T Canyon Building; a containment building [WAC 173-303-695] (Figure C.2) is a canyon type building constructed of reinforced concrete 260 meters (≈850 feet) long, 21 meters (≈70 ft) wide, and 23 meters (≈75 ft) high, and covers an area of 5,400 square meters. The floor of the 221-T Canyon Building is 1.8 meters (6 ft) thick the northwest wall is approximately 0.9 meter thick (3 ft), and the southeast wall is approximately 1.5 meters (5 ft) thick. The building consists of the canyon (221-T Canyon Deck, 221-T Cells, and 221-T Tank System), three galleries (operating, pipe, and electrical), one crane-way and a head-end area (221-T Head End). The standard canyon cells normally are covered by four 1.83-meter (6 ft) thick concrete cover blocks. Each cover block has a carbon steel lifting bail to allow access into the cells. The area on top of the cover blocks is referred to as the 'canyon deck'. The canyon deck is approximately 12 meters (≈40 ft) below a 0.9 to 1.2 meter (≈3 to 4 ft) thick concrete roof. The canyon deck consists of 38 covered and uncovered process cells (2L through 20L) and the railway tunnel access. The process cells begin at Section 2R and continue through Section 20L.

The 221-T Canyon Building is maintained at a negative differential pressure with respect to the ambient atmosphere. The main exhaust system (located near the 291-T Building) pulls canyon air past the cell cover blocks down into the cells, through high-efficiency particulate air (HEPA) filters, and out the 291-T stack. A 3.2-meter-square (11 ft²) concrete exhaust air tunnel runs parallel to the canyon and provides exhaust for the canyon cells. The tunnel exits the 221-T Building at section 3, 6.7 meters (12 ft) below the deck level where the air tunnel narrows to a 1.2- by 2.1-meter (4 by 7 ft) duct. Figures C.2, C.3, C.4, and C.5 provide overhead views of each of the 221-T Canyon Building waste management levels, and 221-T Tank System tank locations. A cutaway diagram of the 221-T Canyon Building (Figure C.2) shows the general design of the facility.

A 41-metric-ton-capacity master crane is in operation that moves parallel to the canyon, allowing access to the canyon deck area. This facilitates remote decontamination, maintenance, treatment, and storage activities. The crane maintenance platform, located in section 20, allows hands-on crane inspection and maintenance.

The 221-T Canyon Building was designed and built to codes and standards applicable in 1944. These standards included static, vertical, live, and dead loads, and lateral wind forces based on the projected building area (WHC-SD-CP-SAR-007). Although these codes had no seismic provisions and no requirements for tornado resistance, the tornado and seismic stress that the building can tolerate has been calculated (HNF-6033).

The structure of the 221-T Canyon Building can withstand a tornado having a maximum tangential wind speed of 240 kilometers per hour with a 40-kilometer-per-hour translational speed (or a resultant speed of 280 kilometers per hour). The building also can withstand a negative pressure loading that results from a 5.2-kilopascal ambient pressure decrease in 3 seconds to a constant pressure held for 1 second and returned to ambient pressure at the same rate. Thus, the structure is able to survive a design-basis tornado.

An assessment of the capability of the 221-T Canyon Building to withstand a safe shutdown earthquake was conducted (HNF 6033). For the Hanford Facility, the safe shutdown earthquake is defined as a horizontal ground motion of 0.25 gravity force with the vertical motion taken as two-thirds of the horizontal motion. Results of the first phase elastic analyses indicate that the canyon walls would be substantially overstressed near the roof (above the canyon crane rails) and at the canyon wall-gallery slab intersections. The primary load bearing reinforced concrete of the canyon also would be damaged.
Figure C.2 221-T Building Cutaway Diagram.

**C.1.1.1.1 221-T Canyon Deck**

The 221-T Canyon Deck is permitted as a containment building storage and treatment area. The canyon deck is approximately 11.3 meters (≈37 ft) wide by 180 meters (≈600 ft) long. The canyon ceiling is 12 meters (≈40 ft) above the canyon deck. The 221-T Railroad Tunnel occupies Cell 2L. The tops of the cell cover blocks serve as the floor surface in much of the canyon deck. Each section is numbered according to the building section number and consists of two cells, one designated right (R) and the other left (L).

The canyon deck can be used for packaging, special decontamination services, repair, treatment, and storage. Equipment that requires decontamination for repair, reuse, recycle, storage, or disposal (e.g., pumps, motors, and resin columns) is stored on the canyon deck or in the canyon cells. The amount and type of equipment in the cells can vary with treatment and storage support requirements.

Sections 4 through 10 are the canyon service areas used as staging and storage areas for contaminated and decontaminated equipment (see Figure C.5). The primary staging and storage areas for pumps and agitators are located in sections 4 and 6. However, these locations within the canyon can change to support waste operations.
Secondary Containment

Secondary containment design and operations for the containment building is described in C.2.6.1.3. The canyon deck does not have engineered secondary containment, therefore any waste containers that require secondary containment that are to be stored within this area will be stored over devices meeting the requirements of WAC 173-303-630(7). At T-Plant, spill containment pallets are the device currently used to meet the requirement. When waste is stored on portable secondary containment, the drain plug (if existing) is kept closed and locked. The containment capacity of each device’s sump reservoir must have sufficient capacity to hold 10% of the total container volume or the volume of the largest container, whichever is greater.

Incompatible Waste

Requirements for incompatible wastes are described in Section C.2.3, and Addendum F.

Fire Suppression

The 221-T Canyon Building does not have engineered fire protection systems. The height of the ceiling above the canyon deck would require a large fire to trip a fire protection system. Administrative limits [as defined in the Master Document Safety Analysis (MDSA)] are used to control the amount of combustible material stored on the canyon deck. The MDSA is maintained and stored in the T-Plant Operating Record. The amount of stored material will be physically limited, such that, the maximum size of a fire will not trip a fire protection system. The Permittees will provide a fire protection system equivalent to an engineered fire protection system. Fire extinguishers are maintained for use by personnel in the event of a minor fire.

Figure C.3 Waste storage at the 221-T Canyon area (on the canyon deck).
Run-On

Run-on prevention is not required under 40 CFR 264.1101 for a containment building. The roof and walls of the 221-T Canyon Building provide protection from water collection. The canyon deck is located on the second floor above ground level. Additionally, the building structure is elevated above ground level to prevent run-on. Adjacent areas to the building are stabilized and graded to slope away from the building to preclude water collection.

Treatment

Treatment capabilities in the 221-T Canyon Deck pertain to containment building treatment. Containment building waste treatment activities of non-containerized dangerous and mixed waste include solidification, decontamination using solid media, or macroencapsulation. Containerized waste treatment activities include deactivation (neutralization, cementing, absorption, and controlled reaction with water), stabilization (absorption, and encapsulation), macroencapsulation, and volume reduction of waste (e.g., compaction).

Repackaging of waste includes but is not limited to the removal of prohibited items, puncturing of aerosol canisters, removal or collection of liquids, segregation or sorting, and waste consolidation. The waste can be sorted in glovebags. Field screening and sampling might be conducted within the glovebags to perform verification. Additional field screening or sampling could occur in these glovebags or outside of the glovebags to complete verification or assist in completing characterization of the waste. Nonconforming waste material can also be treated in the glovebags or other approved locations to meet land disposal restriction (LDR), 40 Code of Federal Regulations (CFR) 268 and/or other requirements. If sampling is necessary to verify treatment requirements, sampling is conducted in the glovebags or other approved locations. After processing waste in the 221-T Canyon Deck, waste is either stored in the 221-T Canyon Deck or is transferred out of the storage area. The use of individual spill containment pallets and glovebags provide the necessary controls to support treatment activities. The maximum treatment capacity is 60 metric tons per day.

Storage Capacity

The containment building (S06) storage capacity is incorporated into the 221-T Cells S06 storage capacity and not listed separately. The maximum storage capacity is 5,108,480 liters and secondary containment capacities are provided by individual spill control devices for those containers requiring secondary containment or incompatible segregation. The 221-T Cells meet the requirements for a containment building storage location, as a negative differential pressure with respect to the ambient atmosphere is maintained.

Container Types

A diverse range of waste containers is managed in the canyon deck storage and treatment area, including, but not limited to; waste boxes, drums, casks, self-contained waste. Containers come in varying sizes and types (e.g., metal, wood, concrete, reinforced fiberglass plywood, etc.) up to an including rail cars. The storage and treatment of containers in the 221-T Canyon Building Deck is limited by the weight and size of the container as detailed below.

221-T Canyon Building Deck Container Characteristics

<table>
<thead>
<tr>
<th>Size Limit</th>
<th>Container Weight Limit</th>
<th>Equipment Weight Limit</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.7 meters (22 foot) long by 4.0 meters (13 foot) high by 5.5 meters (18 foot) wide</td>
<td>Drums NTE 454 kg (1000 pounds) Boxes NTE rated capacity</td>
<td>41,000 kg (90,000 pounds)</td>
</tr>
</tbody>
</table>
Height:
• Drums will be stored a maximum of four drums per pallet.
• Drums will be stored to a maximum of three drums high.
• Boxes will be stored to a maximum of two boxes high.

Width:
Containers will be stored to a maximum of two containers wide.

Aisle Spacing:
Aisle spacing is addressed in Addendum F.

C.1.1.1.2 221-T Containment Building and Cells

Description
The 221-T Cells are permitted as a containment building for storage and treatment. The 221-T Canyon Building contains 37 process cells, grouped into 12-meter (40-ft) sections arranged in a single row running the length of the canyon.

The 221-T Containment Building and Cell design and operation meet the requirements of 40 CFR 264 part DD for containment structures as described in Section C.2.6. Nine process cells, (3L, 7L, 8R, 9L, 10L, 13L, 14R, 15L, and 16R) are identified as containment building cells where some have been modified for a secondary containment liner.

Shielding walls made of 2.7-meter (9 ft) thick reinforced concrete separate the cells from the electrical and pipe galleries. The operating gallery is separated from the canyon deck by a 2.1-meter (7 ft) thick reinforced concrete wall. The crane cab is protected by a 1.5-meter (5 ft) thick concrete wall that extends 2.7 (9 ft) meters above the floor level.

Figure C.4 Inside a T-Plant Process Cell (221-T Building).

Structure
Each section in the canyon is numbered according to building section and consists of two cells, one designated (R) and one (L). There is an expansion joint between each section. Sections 2 through 20 are
divided into cells. Cells within each section are separated by a 2.1 meter (7 ft) thick reinforced concrete wall. The cells measure 5.5 meters (18 ft) long by 4 meters (13 ft) wide by 8.5 meters (28 ft) deep except for Cells 2R, and 5R. Cell 2R measures 4 meters (13 ft) wide, 8.5 meters (28 ft) long, and 8.5 meters (28 ft) deep. Cell 5R is 5.5 meters (18 ft) long by 4 meters (13 ft) wide, and 14.6 meters (48 ft) deep. The standard canyon cells normally are covered by four 1.83 (6 ft) meter thick concrete cover blocks. Each cover block has a carbon steel lifting bail to allow access into the cells. Several cells are partly or completely uncovered. The building is maintained below atmospheric pressure with the exhaust filtered through a series of filters. The building design and operation meet the requirements of 40 CFR 264 part DD for containment structures.

All cell floors except 5R slope to one corner, where a drain leads to liquid collection line running the length of the building that empties into tank 5-7 in cell 5R. This liquid collection system is no longer in service. The cell deck is about 12 meters (40 ft) below a 0.9- to 1.2-meter (3-4 ft) thick concrete roof.

Figure C.5 221-T Building Functional Areas Description.

Secondary Containment

Secondary containment for the 221-T Cells containment building is addressed in Section C.2.6.1.6. The RCRA-compliant modification is composed of a freestanding steel liner, equipped with container placement guides for six Large Diameter Containers (LDC) with one storage position slightly larger than the other five to accommodate a container overpack should one be required to store a leaking container. The liner will meet the volume requirements of the Toxic Substances Control Act of 1976, which requires the liner capacity to be equal to at least 25 percent of the total volume of the containerized waste stored. Each liner will be sloped to a sump equipped with leak detection and a sump pump assembly designed to remove any material resulting from a leak. The wetted parts of the leak detection and pump assemblies are made from materials compatible with the waste. The leak detection system will be equipped with
conductivity probes to determine the presence of liquid in the sump. The system will be connected to the central enunciator panel in addition to remotely alarming at the local panel(s) in the in the 221-T Operating Gallery.

**Incompatible Waste**

Incompatible wastes will be segregated within this area by placing and storing incompatible wastes in separate cells. Additional information on incompatibility is contained in Addendum F.

**Fire Suppression**

The 221-T Canyon Building does not have engineered fire protection systems. The height of the ceiling above the canyon deck would require a large fire to trip a fire protection system. Administrative limits will be used to control the amount of combustible material stored on the canyon deck. The amount of stored material will be physically limited, such that, the maximum size of a fire will not trip a fire protection system. The Permittees will provide a fire protection system equivalent to an engineered fire protection system. Fire extinguishers will be maintained for use by personnel in the event of a minor fire.

**Run-On**

Run-on prevention is not required under 40 CFR 264.1101 for a containment building. However, the roof and walls of the 221-T Canyon Building will provide protection from water collection. Additionally, the building structure is elevated above ground level to prevent run-on. Adjacent areas to the building will be stabilized and graded to slope away from the building to preclude water collection.

**Container Management**

Generally containers of Dangerous Waste will not be managed in the containment cells. These cells are used to manage wastes with high levels of radiation requiring the shielding the cells provide. Containers of Mixed Dangerous Waste stored in the containment cells will be managed in accordance with the As Low As Reasonably Achievable (ALARA) radiation exposure principle for the protection of human health and the environment.

**Treatment**

Containment building waste treatment activities of non-containerized waste include solidification, decontamination using solid media, or macroencapsulation. Treatment in the 221-T Cells will typically be accomplished remotely using the canyon crane.

**Containment Building Waste Management**

The maximum storage capacity is 10,700,000 liters. This storage capacity includes the capacity from the 211-T Canyon Deck. The maximum secondary containment provided by the cell liners is 2,000 liters per installed liner. The maximum treatment capacity is 10 metric tons per day.

A diverse range of waste can be stored in the containment cells including contaminated process equipment and non-containerized waste.

The storage height of an item will be limited to 6.5 meters (21 ft) which is the depth of the cell after the cover blocks are in place. The use of secondary containment further reduces the height of an item that can be stored in the containment cell. Criticality requirements are expected to dictate storage volumes that are significantly less than the maximum storage capacity for Dangerous Waste alone.

The size and shape of other items will be stored in a manner that meets the requirements outlined in Addendum I, Inspection Plan. Access to the waste in the containment cells is through the use of an overhead crane. Access by surveillance personnel to the cell floor is not feasible. Criticality requirements are expected to dictate spacing that is significantly greater than the 30-inch aisle space required for Dangerous Waste alone.
C.1.1.1.3 221-T Tank System

Description

The non-operational 221-T Tank System consists of six tanks located in the 221-T Building that are out of service and awaiting closure: Tank 5-6, Tank 5-7, Tank 5-9, Tank 6-1, Tank 11-R, and Tank 15-1. The 221-T Tank System contained at one point a multi-phasic waste originally comprised of liquids and sludges. The liquid portion was primarily rainwater mixed with dilute decontamination solutions. The sludge portion is highly radioactive solids that are primarily dirt, sandblasting grit, oil, and grease from T-Plant decontamination operations. Liquids have naturally evaporated from the tank waste at a rate of approximately 30 liters per day (11,053 liters per year) until presently the tank system contains only dry waste residues.

In addition, the associated 211-T Sump, located between the 2706-T and the 221-T Building, has been isolated and is awaiting closure. This system is isolated from further waste additions and is, by agreement with Washington State Department of Ecology, considered non-operating. Tanks 5-6 and 5-9 are located in cell 5L. Tank 5-7 is located in cell 5R; Tank 6-1 is located in cell 6L with Tank 11R located in cell 11R and Tank 15-1 located in cell 15R. The tanks are located in canyon cells below the surface of the canyon deck. Tanks 15-1, 11R, 6 1, 5-6, and 5-9 have bottoms 9 meters (28 feet) below the canyon deck. Tank 5-7 is the lowest tank in elevation (bottom at 15 meters (48 feet) below the canyon deck). Tanks 5-6, 5-7, 5-9, 11R, 15-1, and Sump 5-8 are equipped with liquid level monitors. The Tank 6-1 design does not include liquid level monitoring while the liquid level monitors for tanks 11 R and 15 1 are out of service.

The last addition of waste to the 221-T tank system occurred on June 3, 1999. The tank system was then isolated and permanently removed from service (99-EAP-425 and Addendum H). After that time, rainwater had occasionally leaked through the canyon roof and into some of the open top tanks. In April 2008, a metallic sloping roof was installed over the original flat asphalt roof, which has eliminated rainwater infiltration into the tank system. The volume of waste contained in the tanks has fallen below that which can be detected by the tank level indicators, so the tanks are considered empty with heels remaining to be addressed at closure. Cell floors slope to a corner drain that drops into a 61-cm (24-in.) diameter tile sewer running the length of the building and draining to Cell 5R. The bottom of cell 5R where Tank 5-7 is located forms sump 5-8. Both Tank 5-7 and Sump 5-8 have level indication instrumentation.

Structure

The six tanks are stainless steel closed bottom tanks of varying size located in 221-T Canyon Building cells. The 211-T Sump is a below grade concrete basin located between the 221-T Canyon Building and the 2706-T Building.

Secondary Containment

The 221-T Tank System pre-dates the effective date of mixed waste (August 19, 1987) and the subsequent secondary containment and tank control requirements required by 40 CFR 264 Subpart J and WAC 173-303-640. No individual secondary containment is provided for each tank. Any overflow or leakage from tanks 5-6, 5-9, 6-1, 11R, or 15-1 is collected in the 24 inch cell drain header and flows to cell 5-R and is collected in the 5-8 sump which is the bottom of cell 5R. Any leaks or overflow from tank 5-7 will be collected in the 5-8 sump. The 5-8 sump is equipped with level indication and a remote display and alarm panel in the 221-T Operating Gallery. The 5-8 sump may hold up to 187,000 liters (50% of the 5R cell volume) of liquid.

Incompatible Waste

No incompatible wastes will be stored in the 221-T Tank System and the last addition of waste to these tanks occurred on June 3, 1999.
Fire Suppression
The 221-T Canyon Building does not have engineered fire protection systems. The height of the ceiling above the canyon deck would require a large fire to trip a fire protection system. Administrative limits are used to control the amount of combustible material stored on the canyon deck. The amount of stored material will be physically limited, such that, the maximum size of a fire will not trip a fire protection system. The Permittees will provide a fire protection system equivalent to an engineered fire protection system. Fire extinguishers will be maintained for use by personnel in the event of a minor fire.

Run-On
The roof and walls of the 221-T Canyon Building will provide protection from water collection. Additionally, the building structure is elevated above ground level to prevent run-on. Adjacent areas to the building will be stabilized and graded to slope away from the building to preclude water collection.

Tank Management
The last addition of waste to the 221-T tank system occurred on June 3, 1999. The tank system was then isolated and permanently removed from service (99-EAP-425) and slated for closure in accordance with Addendum H. The volume of waste contained in the tanks has fallen below that which can be detected by the tank level indicators and is effectively zero. The tank system will be inspected in accordance with the requirements in Addendum I, Inspection Plan. Inspections of the storage area are documented and maintained in the Hanford Operating Record, T-Plant Operating Unit Group File. The 221-T Tank System will be closed in conjunction with closure of the 221-T Canyon Building.

Storage Capacity
The tank system storage capacity of the 221-T Tank System is 213,247 liters.

C.1.1.1.4 221-T Railroad Tunnel
Description
The 221-T Railroad Tunnel is permitted as a container storage and treatment area. The 221-T Tunnel storage area is located within the railroad tunnel that enters the 221-T Canyon Building at cell 2L. Waste and the equipment to be stored in the 221-T Building are brought into the tunnel on railcars or vehicles. Materials are lifted by crane and placed in the desired storage location. Although normally used only as a transfer and staging area for waste, the tunnel may also be used for waste storage. This area will be maintained below atmospheric pressure with the exhaust filtered through a series of filters as part of the 221-T containment building design. The 221-T Railroad Tunnel S01 storage capacity is identified in Table C.2.

Structure
The tunnel measures 63.7 meters (209 ft) long, 4.9 meters (16 ft) wide, and 7.3 meters (24 ft) high. The floor, walls, and ceiling are of reinforced concrete. It is overburdened with a minimum of approximately 0.9 meters (3 ft) of native rock and soil. At the west end of the tunnel, a 4.9 meter (16 ft) wide by 6.7 meter (22 ft) high overhead rollup door provides vehicular and railway access. The tunnel floor is 10.4 meters (34 ft) below the level of the canyon deck. A stair provides access between the tunnel and the canyon deck.
Secondary Containment

Secondary containment design and operations for containers is described in Section C.2.2.1. The tunnel does not have engineered secondary containment, therefore any waste containers that require secondary containment that are to be stored within this area will be stored over devices meeting the requirements of WAC 173-303-630(7). At T-Plant, spill containment pallets are the device currently used to meet the requirement. When waste is stored on portable secondary containment, the drain plug (if existing) will be kept closed and locked. The containment capacity of each device’s sump reservoir will have sufficient capacity to hold 10% of the total container volume or the volume of the largest container, whichever is greater.

Incompatible Waste

Requirements for incompatible wastes are described in Section C.2.3, and Addendum F.

Fire Suppression

The 221-T Railroad Tunnel does not have engineered fire protection systems. Administrative limits will be used to control the amount of combustible material stored on the tunnel floor in addition to vehicle fuel and combustible material. The amount of stored material will be physically limited, such that, the maximum size of a fire will not trip a fire protection system. The Permittees will provide a fire protection system equivalent to an engineered fire protection system. Fire extinguishers will be maintained for use by personnel in the event of a minor fire.

Run-On

Run-On prevention for container management units is addressed in Section C.2.2.3. The roof and walls of the tunnel provide protection from water collection. Adjacent areas to the buildings are stabilized and are graded to slope away from the tunnel entrance to preclude water collection.

Treatment

Waste management activities include storing, sorting, treating, repackaging, sampling, and physical/chemical screening to characterize retrieved waste; and to verify the characterization of containers of dangerous and mixed waste. Treatment of mixed waste includes deactivation (neutralization, cementing, absorption, and controlled reaction with water), stabilization (cementing, absorption, and encapsulation), and repackaging of waste.

Storage Capacity

The maximum total container management (S01) storage volume is 224,640 liters. The maximum treatment capacity is 5 metric tons per day.

Container Types

A diverse range of waste containers is managed in the tunnel storage and treatment area, including, but not limited to; waste boxes, drums, casks, self-contained waste. Containers come in varying sizes and types (e.g., metal, wood, concrete, reinforced fiberglass plywood, etc.) up to and including rail cars. The storage of containers in the 221-T Railroad Tunnel will be limited by weight and size of the container as detailed below.

<table>
<thead>
<tr>
<th>Size Limit</th>
<th>Container Weight Limit</th>
<th>Equipment Weight Limit</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.7 meters (22 foot) long by</td>
<td>Drums NTE 454 kg (1000 pounds)</td>
<td>41,000 kg (90,000 pounds)</td>
</tr>
<tr>
<td>4.0 meters (13 foot) high by</td>
<td>Boxes NTE rated capacity</td>
<td></td>
</tr>
<tr>
<td>5.5 meters (18 foot) wide</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Height:

- Drums will be stored a maximum of four drums per pallet.
- Containers will be stored to a maximum of three containers high.
- Boxes will be stored to a maximum of two boxes high.

Width:

- Containers will be stored to a maximum of two containers wide.

Aisle Spacing:

- Aisle spacing is addressed in Addendum F.

**C.1.1.1.5 221-T Head End**

**Description**

The 221-T Head End is permitted as a container storage area. The Head End is located at the north end of the building at all three floor levels and the craneway level. At the canyon deck level, the head end provides a working space for contamination control activities and container storage. The northernmost portion of the head end is a mezzanine level accessed by open metal stairs. There is direct access to a portion of the craneway from the mezzanine. An overhead rolling door provides direct access to the exterior on the east side of the 221-T Canyon Building. A concrete ramp provides vehicular access from grade level.

**Structure**

The floor, roof, and other walls are continuations of the canyon construction. A metal wall of corrugated sheet metal on steel beams isolates the head end from the canyon at the beginning of Section 2. A double-wide door has been added to the sheet metal wall separating the head end from the balance of the canyon.

**Secondary Containment**

Secondary containment design and operations is described in Section C.2.2.1. The Head End does not have engineered secondary containment, therefore any waste containers that require secondary containment that are to be stored within this area will be stored over devices meeting the requirements of WAC 173-303-630(7). At T-Plant, spill containment pallets are the device currently used to meet the requirement. When waste is stored on portable secondary containment, the drain plug (if existing) will be kept closed and locked. The containment capacity of each device’s sump reservoir will have sufficient capacity to hold 10% of the total container volume or the volume of the largest container, whichever is greater.

**Incompatible Waste**

Requirements for incompatible wastes are described in Section C.2.3, and Addendum F.

**Fire Suppression**

The 221-T Canyon Building does not have engineered fire protection systems. The height of the ceiling above the canyon deck would require a large fire to trip a fire protection system. Administrative limits will be used to control the amount of combustible material stored in the Head End. The amount of stored material will be physically limited, such that, the maximum size of a fire will not trip a fire protection system. The Permittees will provide a fire protection system equivalent to an engineered fire protection system. Fire extinguishers will be maintained for use by personnel in the event of a minor fire.

**Run-On**

Run-On prevention for container management units is addressed in Section C.2.2.3. The roof and walls of the 221-T Canyon Building provide protection from water collection. The Head End storage area is...
located on the second floor above ground level. Additionally, the building structure is elevated above
ground level to prevent run-on. Adjacent areas to the building are stabilized and graded to slope away
from the building to preclude water collection.

Treatment
No treatment is authorized in the 221-T Head End.

Storage Capacity
The maximum storage capacity is 8,320 liters.

Container Types
A diverse range of waste containers is managed in the Head End storage area, including, but not limited
to; waste boxes, drums, casks, self-contained waste. Containers come in varying sizes and types (e.g.,
metal, wood, concrete, reinforced fiberglass plywood, etc.).

Height:
- Drums will be stored a maximum of four drums per pallet.
- Containers will be stored to a maximum of three containers high.
- Boxes will be stored to a maximum of two boxes high.

Width:
- Containers will be stored to a maximum of two containers wide.

Aisle Spacing:
Aisle spacing is addressed in Addendum F.

C.1.1.2 2706-T Building, 2706-TA Building and 2706-TB Building
This section contains the description of the 2706-T Building, 2706-TA Building, and 2706-TB Building.

C.1.1.2.1 2706-T Building
Description
The 2706-T Building is permitted as a miscellaneous storage and treatment unit. The 2706-T Building
also contains the 2706-T effluent collection system. The effluent collection system is used for the
collection, filtration, transfer, storage, and containment, of liquid mixed waste from treatment and
decontamination activities in the 2706-T Building and 2706-TA Building and from direct additions of
liquid mixed waste from other treatment and storage activities. Miscellaneous unit operations allow for
the storage of non-containerized waste potentially containing free liquids and for decontamination or
treatment activities using free liquids solvents on 2706-T Building operational area floors.

In the 2706-T Building, fugitive particulate emissions are controlled through the use of negative pressure
differentials and filters. The core of the air filtration system is an atmospheric cleanup train (ACT) unit
permitted through air operating permits. Air locks exist at personnel entries to maintain differential
pressure. The effluent filtration and transfer systems are currently not in service. Modifications to the
effluent transfer system are required to return it to service. The sumps are fully functional, and liquids are
removed manually, if needed.

Waste management activities include venting, segregation, repackaging, verification, and storage of
dangerous and mixed waste in containers (boxes and drums) and non-containerized waste. The use of
individual spill containment pallets is the preferred control to support treatment activities however the
floor and the building sumps are designed to provide secondary containment.
Figure C.6 Overhead Schematic of the 2706-T Buildings
Figure C.7 T-Plant 2706-T Buildings (2706-T, 2706-TA, and 2706-TB)

Structure

The 2706-T Building is an 18 meter (60 ft) wide, 20 meter (65 ft) long, and 7.6 meter (25 ft) high ground level building constructed of prefabricated steel with 6 meter (19.5 ft) high sidewalls. The exterior walls of the 2706-T Building are 15 cm (6 inches) thick and consist of insulation sheathed in prefabricated steel. The 2706-T Building has openings on the east and west ends (leading to 2706-TA Building) fitted with roll up metal doors. The west side has two doors, the larger of which is 3.7 meters (12 ft) wide by 4.9 meters (16 ft) high and will be the entrance to the railroad pit area from 2706-TA Building. The east side door and the other door on the west end, leading to the 2706-TA Building, are 2.7 meters (9 ft) wide by 4.3 meters (14 ft) high. The building has a concrete floor with an epoxy floor sealant applied to all operational area floors. Personnel access into the decontamination area is gained through an airlock between the railroad and automotive pit doors.

The 2706-T Building contains a railroad pit, approximately 17 meters (56 ft) long by 5.2 meters (17 ft) wide by 1.8 meters (6 ft) deep. The pit floor is sloped to drain to a 400-liter (106 gallon) below-grade sump. This sump will be connected to the 2706-T effluent collection system. The 2706-T Building will be the loadout point for all liquid waste generated in the 2706-T and 2706-TA Buildings. An overhead crane is available for maintenance use and can travel the length of the building.

The building was constructed to withstand wind design loads of not less than 73.2 kilograms per square meter (kg/m²) for a vertical projection of the building and not less than 97.6 kg/m² for horizontal projection. The rigid frame of the building is capable of supporting a minimum of 2,490 kilograms at each load point, which enables the building to support the crane that travels the length of the building. The bridge crane only can be moved by a hand-operated pulley. The building loading foundation is based...
on an allowable soil-bearing load of 19,500 kg/m² (HNF-SD-WM-ISB-006).

The 2706-T Building was designed and built to the applicable UBC requirements for Type IV buildings. The 2706-TA Building was designed to meet design loads equal to those of the 2706-T Building. Consequently, the 2706-T Building was built to withstand wind design loads of not less than 73.2 kgs/m² for a vertical projection of the building and not less than 97.6 kgs/m² for horizontal projection. The rigid frame of the building is capable of supporting a minimum of 2,490 kgs at each load point, which supports the crane that travels the length of the building. The bridge crane only can be moved by a hand-operated pulley. The building loading foundation is based on an allowable soil-bearing load of 19,500 kg/m² (HNF-SD-WM-ISB-006).

Secondary Containment
Secondary containment design and operations for the miscellaneous unit is described in Section C.2.7.4. The floor and sump will provide secondary containment for containers and also provide containment, leak detection, and liquid removal capability for non-containerized waste containing free liquids and for liquids generated during treatment activities. The floors are constructed from reinforced concrete sealed with a polyurethane enamel epoxy resin. When cured, this sealant has properties similar to glass. The polyurethane sealant is chemically resistant and inert with respect to acids, bases, oxidizers, combustibles, and flammables. Periodic surveillances for cracks, gaps, corrosion, or other deterioration that could allow releases of waste will be conducted. Floor surfaces will be inspected before and after operations involving free liquids solvents. Surveillance results will be recorded on data sheets and retained in the T-Plant operating record. If any problems are identified, steps will be taken to correct the problem and the actions recorded on data sheets.

Incompatible Waste
Requirements for incompatible wastes in miscellaneous units are described in Section C.2.7.5.2.

Fire Suppression
Automatic fire suppression systems at the 2706-T Building include wet-pipe sprinkler systems and dry chemical suppression systems. Piping will be sized in accordance with NFPA 13, 1986 edition, ordinary hazard pipe schedule, or better. The ordinary hazard pipe schedule sprinkler systems for the 2706-T Building have been hydraulically tested with the existing water supply and determined to be adequate. The analysis included allowance for hose streams. The building will be equipped with an automatic heat detection system with heat detectors in all areas of the building. Manual pull stations will be located at each exit door. The two sprinkler systems and deluge system will require alarm and supervisory devices.

Run-On
Run-on prevention for the miscellaneous unit is not directly required under WAC 173-303-680, however the roof and walls of the 2706-T Building will provide protection from water collection. Additionally, the building structure is elevated above ground level to prevent run-on. Adjacent areas to the building will be stabilized and graded to slope away from the building to preclude water collection.

Treatment
Treatment activities occur for the miscellaneous unit. Waste management activities include venting, storing, opening, sorting, treating, repackaging, sampling, and physical/chemical screening to characterize retrieved waste; and to verify the characterization of containers of dangerous and mixed waste. Treatment of mixed waste in containers includes deactivation (neutralization, cementing, absorption, and controlled reaction with water), stabilization (absorption, and encapsulation), and repackaging of waste. The use of individual spill containment pallets is the preferred control to support treatment activities. Waste treatment activities of non-containerized waste in the miscellaneous unit include solidification, decontamination using liquid or solid media, or macroencapsulation. Decontamination or treatment in the miscellaneous unit using free liquids can occur directly on building operational area floors.
Storage Capacity

The maximum storage volume for the miscellaneous unit is 13,186,000 liters. The maximum secondary containment volume is 400 liters. Storage of containers requiring secondary containment beyond this sump volume design capacity will be achieved through the use of portable secondary containment.

Treatment Capacity:

The maximum treatment volume for the miscellaneous unit is 13,186 cubic meters.

Container Types:

A diverse range of waste can be stored and treated in the 2706-T Building including contaminated process equipment and containerized and non-containerized waste. Containerized waste may include waste boxes, drums, casks, and self-contained waste. Containers come in varying sizes and types (e.g., metal, wood, concrete, reinforced fiberglass plywood), including railcars.

Height:
- Drums will be stored a maximum of four drums per pallet.
- Containers will be stored to a maximum of three containers high.
- Boxes will be stored to a maximum of two boxes high

Width:
- Containers will be stored to a maximum of two containers wide.

Aisle Spacing:

Aisle spacing is addressed in Addendum F.

C.1.1.2.2 2706-TA Building

Description

The 2706-TA Building is permitted as a miscellaneous storage and treatment unit. The 2706-TA Building is used for equipment decontamination and dangerous and mixed waste treatment and storage activities. The 2706-TA Building has an equipment roll up door 3.5 m (11.5 ft) wide by 4.6 m (15 ft) high, and a larger door 5.4 m (17.5 ft) wide by 6.1 m (20 ft) high, located at the west end of the building along with the roll up doors to the 2706-T Building. The building has a concrete floor with an epoxy floor sealant applied to all operational area floors. The building contains a 2,000 liter (528 gallon) sump to collect decontamination liquids and a second sump to collect HVAC condensate.

Structure

The 2706-TA Building, constructed of pre-fabricated steel, is approximately 15 meters (49 ft) wide and 7.6 meters (25 ft) high, with a concrete foundation and floor. The 2706-TA Building has an equipment roll up door 3.5 meters (11.5 ft) wide by 4.6 meters (15 ft) high, and a larger door 5.4 meters (17.5 ft) wide by 6.1 meters (20 ft) high, located at the west end of the building along with the roll up doors to the 2706-T Building.

The 2706-TA Building was installed over the concrete pad located west of the 2706-T Building. The building and foundation meet design loads equal to those of the 2706-T Building. Personnel access decontamination areas through airlocks at the 2706-T Building or the west end of the 2706-TA Building. The inner building has a filter room.

The 2706-TA Building was designed and built to the applicable UBC requirements for Type IV buildings. The 2706-TA Building was designed to meet design loads equal to those of the 2706-T Building. Consequently, the 2706-TA Building was built to withstand wind design loads of not less than 73.2 kgs/m² for a vertical projection of the building and not less than 97.6 kgs/m² for horizontal projection. The rigid frame of the building is capable of supporting a minimum of 2,490 kgs at each load point,
which supports the crane that travels the length of the building. The bridge crane only can be moved by a
hand-operated pulley. The building loading foundation is based on an allowable soil-bearing load of
19,500 kg/m² (HNF-SD-WM-ISB-006).

Secondary Containment

Secondary containment design and operations for the miscellaneous unit is described in Section C.2.2.1.4.
The floor and sump provide secondary containment for containers and also provide containment, leak
detection, and liquid removal capability for non-containerized waste containing free liquids and for
liquids generated during treatment activities. The floors are constructed from reinforced concrete sealed
with a polyurethane enamel epoxy resin. When cured, this sealant has properties similar to glass. The
polyurethane sealant is chemically resistant and inert with respect to acids, bases, oxidizers, combustibles,
and flammables. Therefore, there are no compatibility problems with the base floor and the waste stored
in the 2706-T, 2706-TA, and 2706-TB buildings. Periodic surveillances for cracks, gaps, corrosion, or
other deterioration that could allow releases of waste will be conducted. Floor surfaces will be inspected
before and after operations involving free liquids. Surveillance results will be recorded on data sheets and
retained in the unit operating record. If any problems are identified, steps will be taken to correct the
problem and the actions recorded on data sheets.

Incompatible Waste

Requirements for incompatible wastes in miscellaneous units are described in Section C.2.7.5.2.

Fire Suppression

Automatic fire suppression systems at the 2706-T Complex include wet-pipe sprinkler systems and dry
chemical suppression systems. Piping is sized in accordance with NFPA 13, 1986 edition, ordinary
hazard pipe schedule, or better. The ordinary hazard pipe schedule sprinkler systems for the 2706-T
Complex have been hydraulically analyzed and with the existing water supply and determined to be
adequate. The analysis included allowance for hose streams. The building will be equipped with an
automatic heat detection system with heat detectors in all areas of the building. Manual pull stations will
be located at each exit door. The two sprinkler systems and deluge system will require an alarm and
supervisory devices.

Run-on

Run-on prevention for the miscellaneous unit is not directly required under WAC 173-303-680, however
the roof and walls of the 2706-TA Building provide protection from water collection. Additionally, the
building structure is elevated above ground level to prevent run-on. Adjacent areas to the building is
stabilized and graded to slope away from the building to preclude water collection.

Treatment

The 2706-TA Building has waste treatment and decontamination capabilities equivalent to the 2706-T
Building. Treatment activities occur for the miscellaneous unit. Waste management activities include
venting, storing, opening, sorting, treating, repackaging, sampling, and physical/chemical screening to
characterize retrieved waste; and to verify the characterization of containers of dangerous and mixed
waste. Treatment of mixed waste in containers includes deactivation (neutralization, cementing,
absorption, and controlled reaction with water), stabilization (cementing, absorption, and encapsulation),
and repackaging of waste. The use of individual spill containment pallets is the preferred control to
support treatment activities however the floor and the building sump is designed to provide secondary
containment meeting the requirements of WAC 173-303-630(7).

Decontamination or treatment using free liquids can occur directly on building operational area floors.

Storage Capacity

The maximum storage volume for miscellaneous unit is 13,191,000 liters.
Treatment
The maximum treatment volume for the miscellaneous unit is 13,191,000 liters. The maximum treatment capacity is 30 metric tons per day.

Container Types
A diverse range of waste can be stored and treated in the 2706-TA Building including contaminated process equipment and containerized and non-containerized waste. Containerized waste may include waste boxes, drums, casks, and self-contained waste. Containers come in varying sizes and types (e.g., metal, wood, concrete, reinforced fiberglass plywood), including railcars.

Height:
- Drums will be stored a maximum of four drums per pallet.
- Containers will be stored to a maximum of three containers high.
- Boxes will be stored to a maximum of two boxes high.

Width:
- Containers will be stored to a maximum of two containers wide.

Aisle Spacing:
Aisle spacing is addressed in Addendum F.

C.1.1.2.3 2706-TB Building
Description:
The 2706-TB Building was constructed to enclose the tanks that manage liquid mixed waste generated in the 2706-T and 2706-TA Buildings. The tanks are currently out of service. An elevation view of the 2706-TB Building and Storage Tanks is seen in Figure C.8.
Figure C.8 Elevation View of the 2706-TB Building and Storage Tanks.
Structure

The building is 9.5 meters (31 ft) wide, 14 meters (46 ft) long, and 9.6 meters (31 ft) high. This building is constructed of prefabricated steel and has a concrete foundation and floor. The 2706-TB Building contains two storage and treatment tanks with secondary containment and a chemical addition room located at the north end of the building. The two storage tanks, T-XX-2706-220 and T-XX-2706-221, are stainless steel tanks. These tanks will not be permitted for waste management in this Permit. See Section C.2.4 for additional information on the tanks. T-220 was removed from service and there are no current plans to repair the tank. T-221 is a useable tank, but has never been used for receipt of any type of material. Both tanks have been confirmed to be empty and have had their inlets and outlets blanked to prevent any addition of material to the tanks. The pipe blanking was witnessed by Ecology and documented via pictures.

Secondary Containment

The 2706-TB Building contains a secondary containment basin located beneath the floor grating to collect and contain leaks or spills as well as a 20-minute deluge from sprinkler activation. This basin can hold 60,300 liters (15,930 gallons). The basin contains a collection sump with a pump to transfer liquids out of the secondary containment back into one or both of the tanks as well as to the 2706-T Building liquid waste loadout area into collection containers.

Incompatible Waste

Incompatibility requirements are discussed in Section F.3.2.

Fire Suppression

Automatic fire suppression systems at the 2706-T Buildings include wet-pipe sprinkler systems and dry chemical suppression systems. Piping will be sized in accordance with NFPA 13, 1986 edition, ordinary hazard pipe schedule, or better. The ordinary hazard pipe schedule sprinkler systems for the 2706-T Complex have been hydraulically analyzed and with the existing water supply and determined to be adequate. The analysis included allowance for hose streams. The building will be equipped with an automatic heat detection system with heat detectors in all areas of the building. Manual pull stations are located at each exit door. The two sprinkler systems and deluge system will require an alarm and supervisory devices.

Run-on

The roof and walls of the 2706-TB Building provide protection from water collection. Additionally, the building structure is elevated above ground level to prevent run-on. Adjacent areas to the building will be stabilized and graded to slope away from the building to preclude water collection.

Treatment

No treatment is authorized in the 2706-TB Building tank system.

Container Types

Not applicable.

C.1.1.2.4 214-T Building

Description

The 214-T Building is located on the west side of the 221-T Building near the railroad tunnel. The 214-T Building has compliant secondary containment; therefore, containers requiring secondary containment can be stored in this container storage area without portable secondary containment. The concrete floor is covered with a chemical resistant coating and divided by a raised concrete berm to allow for the separation of incompatible waste types. The two floor areas are sloped to prevent mixing of incompatible materials and to direct any spills to separate floor sumps.
Figure C.9 214-T Functional Segregation Diagram and Acid and Base Example.

Structure
The 214-T Building, enclosed totally to protect containers from precipitation or run-on, is 15 meters (49 ft) wide, 8.8 meters (29 ft) long, 3.7 meters (12 ft) high. The building is constructed of corrugated steel.
overlying I beams and has a concrete floor.

Figure C.10 T-Plant 214-T Building

Secondary Containment
Secondary containment requirements for the 214-T Building are discussed in Section C.2.2.1.4. The 214-T Building secondary containment basins are designed to contain over 10 percent of the total volume of containers that can be stored over each containment basin. The 214-T Building, enclosed totally to protect containers from precipitation or run-on, is 15 m (49 ft) wide, 8.8 m (29 ft) long, 3.7 m (12 ft) high. The building is constructed of corrugated steel overlaying I beams and has a concrete floor. The west sump can contain up to 932 liters of liquid waste and the east sump can contain up to 449 liters of liquid waste. Storage of containers requiring secondary containment beyond this sump volume design capacity is achieved through the use of portable secondary containment.

Incompatible Waste
Requirements for incompatible wastes are described in Section C.2.3, and Addendum F. The two floor areas are sloped to prevent mixing of incompatible materials and to direct any spills to separate floor sumps. The sumps are not connected to any piping system. Steel gratings cover the containment basins and provide an even flooring surface for the movement of containers. The concrete floor is covered with a chemical resistant coating and divided by a raised concrete berm separating incompatible waste types. When cured, this sealant has properties similar to glass. The polyurethane sealant chemically is resistant and inert with respect to acids, bases, oxidizers, combustibles, and flammables.

Each type of incompatible waste will be physically separated from the other by means of a dike, berm,
Fire Suppression

The 214-T Building does not have engineered fire protection systems. Administrative limits are used to control the amount of combustible material stored. The amount of stored material physically limits the maximum size a fire could reach to a size that is well below that which would trip a fire protection system. This control provides the same level of fire protection provided by an engineered fire protection system. Manual pull stations are located at each exit door. Fire extinguishers are located in the building.

Run-on

Run-on information is found in Section C.2.2.3. The roof and walls of the 214-T Building provide protection from water collection. Additionally, the building structure is elevated above ground level to prevent run-on. Adjacent areas to the building will be stabilized and graded to slope away from the building to preclude water collection.

Secondary Containment

The 214-T Building secondary containment basins will be designed to contain over 10 percent of the total volume of containers that can be stored over each containment basin. The west sump can contain up to 932 liters (246 gallons) of liquid waste and the east sump can contain up to 449 liters (119 gallons) of liquid waste. Storage of containers requiring secondary containment beyond this sump volume design capacity will be achieved through the use of individual portable secondary containment.

Treatment

No treatment is authorized in the 214-T Building.

Storage

The maximum storage capacity is 67,392 liters.

Container Types

A diverse range of containerized waste can be stored in the 214-T. Containerized waste may include waste boxes, drums, casks, and self-contained waste. Containers come in varying sizes and types (e.g., metal, wood, concrete, reinforced fiberglass plywood), including railcars.

Height:

- Drums will be stored a maximum of four drums per pallet.
- Containers will be stored to a maximum of three containers high.
- Boxes will be stored to a maximum of two boxes high.

Width:

- Containers will be stored to a maximum of two containers wide.

Aisle Spacing:

- Aisle spacing is addressed in Addendum F.

C.1.1.3 T-Plant Outdoor Storage Areas

C.1.1.3.1 2706-T Storage Yard

Description

The 2706-T Storage Yard is a fenced, uncovered asphalt paved area for storage of containerized mixed and low-level waste. The 2706-T Storage Yard is located on the immediate north side of the 2706-TA and 2706-TB Buildings. It is irregular in shape and contains two engineered metal structures (HS-030 and HS-032). It covers an area of approximately 2,344 m² (25,200 ft²).
Secondary Containment

Secondary containment requirements for the 2706-T Storage Yard are discussed in Section C.2.2.1.4. The 2706-T Yard Waste Storage Area does not have a constructed secondary containment system. All waste containers requiring secondary containment for liquid will be stored over individual portable secondary containment. When waste is stored on individual portable secondary containment, the drain plug (if existing) is kept closed and locked. The secondary containment systems are designed to contain over 10 percent of the total volume of liquid in all containers that can be stored or 100 percent of the largest container, whichever is greater, and the additional volume that would result from precipitation of a maximum 25 year storm of 24 hours duration.

Incompatible Waste

Requirements for incompatible wastes are described in Section C.2.3, and Addendum F.

Fire Suppression

A fire extinguisher will be located within 50 meters of the storage area.

Run-on

Run-on information is found in Section C.2.2.3. Run-on will be controlled by drainage sloping away from the storage area. Waste containers are elevated to prevent contact with any accumulated liquids. Adjacent areas will be stabilized and graded to slope away from the storage location to preclude water collection.

Treatment

No treatment is authorized in the 2706-T Storage Yard.

Storage

The maximum storage capacity is 392,709 liters.

Container Types

A diverse range of containerized waste can be stored in the 2706-T Storage Yard. Containerized waste may include waste boxes, drums, casks, and self-contained waste. Containers come in varying sizes and types (e.g., metal, wood, concrete, reinforced fiberglass plywood), including railcars.

Height:

• Drums will be stored a maximum of four drums per pallet.
• Containers will be stored to a maximum of three containers high.
• Boxes will be stored to a maximum of two boxes high.

Width:

• Containers will be stored to a maximum of two containers wide.

Aisle Spacing:

• Aisle spacing is addressed in Addendum F.

C.1.1.3.2 Dangerous and/or Mixed Waste Storage Modules (HS-030, HS-031, and HS0-32)

The three storage units are engineered metal storage module, also called a CONEX box, and are located inside the 2706-T Complex fence-line. Each is completely enclosed by walls, a roof, and floor to protect containers from precipitation and run-on. The storage structures measure, 7.2 m (24 ft) long by 3.5 m (11.5 ft) wide by 2.7 m (8.5 ft) high, and are divided into two separate compartments or cells.

A picture of the typical mixed waste storage module can be seen in Figure C.11. Each cell within each module has a door that opens onto a loading platform or ramp. Inside, the containers rest on a chemical
resistant non-skid fiberglass grate above a steel secondary containment basin that is free of cracks and has a chemical resistant coating. The containment basin has a capacity of 3,142 liters (830 gallons). The roof collects and directs the precipitation to the rear of the building away from the doorways and loading platforms. Once the waste containers are placed on the loading platform, the containers are moved in and out of the storage cells using a drum dolly.

**C.1.1.3.3 Location of Modules**

- **HS-030 Storage Module** - located inside the 2706-T Storage Yard
- **HS-031 Storage Module** - and sits between the 2706-T Storage Yard and the 221-T Building.
- **HS-032 Storage Module** – located inside the 2706-T Storage Yard

![Figure C.11 Dangerous and/or Mixed Waste Storage Modules](image)

**Secondary Containment**

Secondary containment requirements for the HS-030 Storage Module, HS-031 Storage Module, and HS-032 Storage Module are discussed in Section C.2.2.1. The containment basin for each cell is a steel secondary containment basin that is free of cracks and has a chemical resistant coating.

**Incompatible Waste**

Requirements for incompatible wastes are described in Section C.2.3, and Addendum F. Each module has two cells isolated from each other allowing for the storage of incompatible wastes in different cells.

**Run-on**

Run-on information is found in Section C.2.2.3. The roof collects and diverts the precipitation to the rear of the building away from the doorways and loading platforms. Additionally, the building structure is
elevated above ground level to prevent run-on. Adjacent areas to the building are stabilized and graded to slope away from the building to preclude water collection.

**Treatment**

No treatment is authorized in the HS-030 Storage Module, HS-031 Storage Module, and HS-032 Storage Module.

**Storage**

The maximum storage capacity is 7,488 liters per storage module. Secondary containment capacities are 3,142 liters for each storage module.

**Container Types**

A diverse range of containerized waste can be stored in the HS-030 Storage Module, HS-031 Storage Module, and HS-032 Storage Module. Container size is limited to the door openings of the modules.

**Height:**

- Drums will be stored a maximum of four drums per pallet.
- Containers will be stored to a maximum of one container high.
- Boxes will be stored to a maximum of one box high.

**Width:**

- Containers will be stored to a maximum of two containers wide.

**Aisle Spacing:**

- Aisle spacing is addressed in Addendum F.

**C.1.1.3.4  2706-T Asphalt Pad**

**Description**

The 2706-T Asphalt Pad is an uncovered asphalt area for storage of waste in containers. This pad can store waste containers of various size and volume. It is 45.5 m (150 ft) long and 24.3 m (80 ft) wide. It is located northwest of the 2706-T Storage Yard. The 2706-T Asphalt pad can be seen in picture C.12. The 2706-T Asphalt Pad is maintained to store a variety of waste streams to ensure adequate capacity and operational flexibility consistent with the dynamic nature of the T-Plant Complex mission.
Secondary Containment
Secondary containment requirements for the 2706-T Asphalt Pad are discussed in Section C.2.2.1.4. The 2706-T Asphalt Pad does not have a constructed secondary containment system. Any waste containers requiring secondary containment for liquid or incompatible waste management are stored over portable secondary containment.

Incompatible Waste
Requirements for incompatible wastes are described in Section C.2.3, and Addendum F.

Run-On
Run-on information is found in Section C.2.2.3. Run-on is controlled by drainage sloping away from the storage pad area. Waste containers are elevated to prevent contact with any accumulated liquids. Adjacent areas are stabilized and graded to slope away from the storage location to preclude water collection.

Fire Suppression
No engineered fire suppression is provided for outside storage pads. A fire extinguisher will be located within 50 meters of the storage area.

Treatment
No treatment is authorized in the 2706-T Asphalt Pad.

Storage
The maximum storage capacity is 1,246,068 liters.
Container Management

Movement of containers to and from the storage area will occur via the use of forklifts, cranes, and other equipment to ensure safe and compliant movement of waste containers.

Container Types

Containerized waste may be stored in the 2706-T Asphalt Pad. Containerized waste may include waste boxes, drums, casks, and self-contained waste. Containers come in varying sizes and types (e.g., metal, wood, concrete, reinforced fiberglass plywood).

Height

Drums will be stored a maximum of four drums per pallet.

- Containers will be stored to a maximum of three containers high.
- Boxes will be stored to a maximum of two boxes high.

Width

- Containers will be stored to a maximum of two containers wide.

Aisle Spacing

- Aisle spacing is addressed in Addendum F.

C.1.1.3.5 211-T Cage

Description

The 211-T Cage is a fenced outside storage area with a locking gate for storing containerized waste. The containerized waste consists primarily of 208 liter (55 gallon), 321 liter (85 gallon) drums, and standard waste boxes. This location is used intermittently for the storage of maintenance wastes, used oil for recycling, and spent antifreeze for recycling. The storage of containerized waste for the purposes of segregating incompatible wastes or providing secondary containment for liquid wastes prior to treatment is one use of this storage area. The 211-T Cage will be maintained to store a variety of waste streams to ensure adequate capacity and operational flexibility consistent with the dynamic nature of the T-Plant mission.
Figure C.13 211-T Cage

Structure
The cage is 7.3 meters (24 ft) long and 4.7 meters (15 ft) wide. The 211-T Cage floor, sumps, and curbing will be constructed from reinforced concrete sealed with a polyurethane enamel epoxy resin. The 211-T Cage is split into two sections separated by a concrete berm and surrounded by a six-inch curb.

Secondary Containment
Secondary containment requirements for the 211-T Cage are discussed in Section C.2.2.1.4. The 211-T Cage is split into two sections that are separated by a concrete berm and surrounded by a six-inch curb. Each floor section slopes to a sump not connected to any piping system that provides containment. Storage of containers requiring secondary containment beyond this sump volume design capacity is achieved through the use of individual portable secondary containment.

Incompatible Waste
Requirements for incompatible wastes are described in Section C.2.3, and Addendum F.

Fire Suppression
A fire extinguisher will be located within 50 meters of the storage area.

Run-On
Run-on information is found in Section C.2.2.3. The roof collects and diverts the precipitation to the rear of the structure. Additionally, the building structure is elevated above ground level to prevent run-on. Adjacent areas to the building will be stabilized and graded to slope away from the building to preclude water collection.
Treatment
No treatment is authorized in the 211-T Cage.

Storage
The maximum storage capacity is 19,968 liters and the secondary containment capacities totals 870 liters. Storage of containers requiring secondary containment beyond this sump volume design capacity is achieved through the use of portable secondary containment.

Container Types
A diverse range of containerized waste can be stored in the 2706-T Asphalt Pad. Containerized waste may include waste boxes, drums, casks, and self-contained waste. Containers come in varying sizes and types (e.g., metal, wood, concrete, reinforced fiberglass plywood).

Height:
- Drums will be stored a maximum of four drums per pallet.
- Containers will be stored to a maximum of one container high.
- Boxes will be stored to a maximum of one box high.

Width:
- Containers will be stored to a maximum of two containers wide.

Aisle Spacing:
- Aisle spacing is addressed in Addendum F.

C.1.1.3.6 221-T R-5 Waste Storage Area

Description
The 221-T R-5 Waste Storage Area is an uncovered asphalt storage area. The 221-T R-5 Waste Storage Area will be used for storage of waste containers and equipment of various sizes and volumes. In the past it has stored roll-on/roll-off containers, standard waste boxes, fiberglass reinforced plywood boxes, and drums. The 221-TR-5 Waste Storage Area is maintained to store a variety of waste streams to ensure adequate capacity and operational flexibility consistent with the dynamic nature of the T-Plant mission.

Structure
It is an asphalt paved area 47 meters (155 ft) long by 18 meters (60 ft wide). A portable weather shelter, designated as 229-W, currently occupies the northeast end of the pad, only empty containers used for repackaging actives are stored in the 229-W structure.

Secondary Containment
Secondary containment requirements are discussed in Section C.2.2.1.4. The 221-T R-5 Waste Storage Area does not have a constructed secondary containment system. All waste containers requiring secondary containment for liquid will be stored over individual portable secondary containment. For waste stored on individual portable secondary containment, the drain plug (if existing) will be kept closed and locked. The secondary containment systems are designed to contain over 10 percent of the total volume of liquid in all containers that can be stored or 100 percent of the largest container, whichever is greater, and the additional volume that would result from precipitation of a maximum 25 year storm of 24 hours duration.

Incompatible Waste
Requirements for incompatible wastes are described in Section C.2.3, and Addendum F. Containers of incompatible wastes will be segregated to meet the requirements of WAC 173-303-630(9). Each type of incompatible waste will be physically separated from the other by means of a dike, berm, wall, or other
device.

**Fire Suppression**

No engineered fire suppression is provided for outside storage on a pad. A fire extinguisher will be located within 50 meters of the storage area.

**Run-On**

Run-on information is found in Section C.2.2.3. Run-on is controlled by drainage sloping away from the storage area. Waste containers will be elevated to prevent contact with any accumulated liquids. All waste containers requiring secondary containment for liquid or incompatible waste management will be stored over portable secondary containment. Adjacent areas will be stabilized and graded to slope away from the storage location to preclude water collection.

**Treatment**

No treatment is authorized in the 221-T R-5 Waste Storage Area.

**Storage**

The maximum storage capacity is 898,560 liters. Storage of containers requiring secondary containment is achieved through the use of individual portable secondary containment.

**Container Types**

Waste containers are managed in the storage area, including, but not limited to; waste boxes, drums, casks, self-contained waste. Containers come in varying sizes and types (e.g., metal, wood, concrete, reinforced fiberglass plywood, etc.).

Height:

- Drums will be stored a maximum of four drums per pallet.
- Containers will be stored to a maximum of one container high.
- Boxes will be stored to a maximum of one box high.

Width:

- Containers will be stored to a maximum of two containers wide.

Aisle Spacing:

- Aisle spacing is addressed in Addendum F.

**221-TA Storage Area**

**Description:**

The 221-TA storage area is an outside storage area at the southeast corner of the 221-T Building.

**Structure**

It is an asphalt paved area 23 meters (75 ft) long by 9 meters (30 ft) wide.

**Secondary Containment**

Secondary containment requirements are discussed in Section C.2.2.1.4. The 221-TA storage area does not have a constructed secondary containment system. All waste containers requiring secondary containment for liquids will be stored over individual portable secondary containment. For waste stored on individual portable secondary containment, the drain plug (if existing) will be kept closed and locked. The secondary containment systems are designed to contain over 10 percent of the total volume of liquid in all containers that can be stored or 100 percent of the largest container, whichever is greater, and the additional volume that would result from precipitation of a maximum 25 year storm of 24 hours duration.
Incompatible Waste

Requirements for incompatible wastes are described in Section C.2.3, and Addendum F. Containers of incompatible wastes will be segregated in the 2706-TA Building to meet the requirements of WAC 173-303-630(9). Each type of incompatible waste will be physically separated from the other by means of a dike, berm, wall, or other device.

Fire Suppression

No engineered fire suppression is provided for outside storage on a pad. A fire extinguisher will be located within 50 meters of the storage area.

Run-on

Run-on information is found in Section C.2.2.3. Run-on is controlled by drainage sloping away from the storage area. Waste containers will be elevated to prevent contact with any accumulated liquids. All waste containers requiring secondary containment for liquid will be stored over individual portable secondary containment. Adjacent areas will be stabilized and graded to slope away from the storage location to preclude water collection.

Treatment

No treatment is authorized in the 221-TA Storage Area.

Storage

The maximum storage capacity is 56,160 liters.

Container Types

A diverse range of waste containers is managed in the storage area, including, but not limited to; waste boxes, drums, casks, self-contained waste. Containers come in varying sizes and types (e.g., metal, wood, concrete, reinforced fiberglass plywood, etc.).

Height:

- Drums will be stored a maximum of four drums per pallet.
- Containers will be stored to a maximum of one container high.
- Boxes will be stored to a maximum of one box high.

Width:

- Containers will be stored to a maximum of two containers wide.

Aisle Spacing:

- Aisle spacing is addressed in Addendum F.

C.1.1.3.8 243-T Covered Storage Pad

Description

The 243-T Covered Storage Pad is an irregularly shaped area encompassing an asphalt and gravel pad containing a covered storage structure. This pre-engineered structure, located at the west corner of T-Plant provides protection of the waste containers from precipitation events. The structure is constructed with a structural steel frame, sheet metal roof, and open sides. Forklift access is from the southeast side (parking lot side).

Structure

The 243-T Covered Storage Pad is 22.9 m (75 ft) wide by 61 m (200 ft) long with 4.9 m (16 ft) eave height. The overall size of the pad measures 96 m (315 ft) long by 62.5 m (205 ft) wide, which includes the area beneath the sheet metal structure.
**Secondary Containment**
Secondary containment requirements are discussed in Section C.2.2.1.4. The 243-T Covered Storage Pad does not have a constructed secondary containment system. All waste containers requiring secondary containment for liquids will be stored over individual portable secondary containment. For waste stored on individual portable secondary containment, the drain plug (if existing) will be kept closed and locked. The secondary containment systems are designed to contain over 10 percent of the total volume of liquid in all containers that can be stored or 100 percent of the largest container, whichever is greater, and the additional volume that would result from precipitation of a maximum 25 year storm of 24 hours duration.

**Incompatible Waste**
Requirements for incompatible wastes are described in Section C.2.3, and Addendum F. Containers of incompatible wastes will be segregated in the 243-T Covered Storage Pad to meet the requirements of WAC 173-303-630(9). Each type of incompatible waste will be physically separated from the other by means of a dike, berm, wall, or other device.

**Fire Suppression**
No engineered fire suppression is provided for outside storage on a pad. A fire extinguisher will be located within 50 meters of the storage area.

**Run-on**
Run-on information is found in Section C.2.2.3. Run-on is controlled by drainage sloping away from the storage area. Waste containers will be elevated to prevent contact with any accumulated liquids. All waste containers requiring secondary containment for liquid will be stored over individual portable secondary containment. Adjacent areas will be stabilized and graded to slope away from the storage location to preclude water collection.

**Treatment**
No treatment is authorized in the 243-T Covered Storage Pad.

**Storage**
The maximum storage capacity is 591,168 liters.

**Container Types**
A diverse range of waste containers is managed in the storage area, including, but not limited to; waste boxes, drums, casks, self-contained waste. Containers come in varying sizes and types (e.g., metal, wood, concrete, reinforced fiberglass plywood, etc.).

**Height:**
- Drums will be stored a maximum of four drums per pallet.
- Containers will be stored to a maximum of one container high.
- Boxes will be stored to a maximum of one box high.

**Width:**
- Containers will be stored to a maximum of two containers wide.

**Aisle Spacing:**
- Aisle spacing is addressed in Addendum F.

**C.1.1.3.9 221-T Sand Filter Storage Area**

**Description**
The 221-T Sand Filter Storage Area is an uncovered gravel storage area. The 221-T Sand Filter storage
area will be used to store waste containers of various sizes and volumes. The 221-T Sand Filter Storage Area will be maintained to store a variety of waste streams to ensure adequate capacity and operational flexibility consistent with the dynamic nature of the T-Plant mission. Currently it is used to store drums of compacted empty waste drums (pucks) from the repackaging activities prior to transfer and disposal at the Environmental Restoration Disposal Facility (ERDF).

**Structure**

The 221-T Sand Filter Storage Area is a gravel area measuring 55 meters (180 ft) long and 18 meters (60 ft) wide.

**Secondary Containment**

Secondary containment requirements are discussed in Section C.2.2.1.4. The 221-T Sand Filter Storage Area does not have a constructed secondary containment system. All waste containers requiring secondary containment for liquids will be stored over individual portable secondary containment. For waste stored on individual portable secondary containment, the drain plug (if existing) will be kept closed and locked. The secondary containment systems are designed to contain over 10 percent of the total volume of liquid in all containers that can be stored or 100 percent of the largest container, whichever is greater, and the additional volume that would result from precipitation of a maximum 25 year storm of 24 hours duration.

**Incompatible Waste**

Requirements for incompatible wastes are described in Section C.2.3, and Addendum F. Containers of incompatible wastes will be segregated in 221-Sand Filter Storage Area to meet the requirements of WAC 173-303-630(9). Each type of incompatible waste will be physically separated from the other by means of a dike, berm, wall, or other device.

**Fire Suppression**

No engineered fire suppression is provided for outside storage on a pad. A fire extinguisher will be located within 50 meters of the storage area.

**Run-on**

Run-on information is found in Section C.2.2.3. Run-on is controlled by drainage sloping away from the storage area. Waste containers will be elevated to prevent contact with any accumulated liquids. All waste containers requiring secondary containment for liquid will be stored over individual portable secondary containment. Adjacent areas will be stabilized and graded to slope away from the storage location to preclude water collection.

**Treatment**

No treatment is authorized in the 221-Sand Filter Storage Area.

**Storage Capacity**

The maximum storage capacity is 56,160 liters.

**Container Types**

A diverse range of waste containers is managed in the storage area, including, but not limited to; waste boxes, drums, casks, self-contained waste. Containers come in varying sizes and types (e.g., metal, wood, concrete, reinforced fiberglass plywood, etc.).

**Height:**

- Drums will be stored a maximum of four drums per pallet.
- Containers will be stored to a maximum of one container high.
- Boxes will be stored to a maximum of one box high.
Width:

- Containers will be stored to a maximum of two containers wide.

Aisle Spacing:

- Aisle spacing is addressed in Addendum F.

### C.1.1.3.10 211-T Pad

#### Description

The 211-T Pad will be available for use as secondary containment for large containers such as tanker trucks. Drums and boxes containing free or containerized liquids will also be stored on this pad.

#### Structure

It is a concrete pad 18 meters (60 ft) long and 5.5 meters (18 ft) wide with a 30.5 centimeter (12 in.) curb.

---

**Figure C.14 Waste storage at the 211-T Pad**

#### Secondary Containment

Secondary containment requirements are discussed in Section C.2.2.1.4. The pad is curbed and slopes...
into a sump not connected to any piping system, thus providing secondary containment for waste containing liquids. All waste containers requiring secondary containment for liquids will be stored over individual portable secondary containment. For waste stored on individual portable secondary containment, the drain plug (if existing) will be kept closed and locked. The secondary containment systems are designed to contain over 10 percent of the total volume of liquid in all containers that can be stored or 100 percent of the largest container, whichever is greater, and the additional volume that would result from precipitation of a maximum 25 year storm of 24 hours duration.

**Incompatible Waste**

Requirements for incompatible wastes are described in Section C.2.3, and Addendum F. Containers of incompatible wastes will be segregated in 221-T Pad to meet the requirements of WAC 173-303-630(9). Each type of incompatible waste will be physically separated from the other by means of a dike, berm, wall, or other device.

**Fire Suppression**

No engineered fire suppression is provided for outside storage on a pad. A fire extinguisher will be located within 50 meters of the storage area.

**Run-On**

Run-on information is found in Section C.2.2.3. Run-on is controlled by drainage sloping away from the storage area. Waste containers will be elevated to prevent contact with any accumulated liquids. All waste containers requiring secondary containment for liquid will be stored over individual portable secondary containment. Adjacent areas will be stabilized and graded to slope away from the storage location to preclude water collection.

**Treatment**

No treatment is authorized in the 211-T Pad

**Storage Capacity**

The maximum storage capacity is 56,160 liters. The storage of containers requiring secondary containment beyond this sump volume design capacity is achieved through the use of portable secondary containment.

**Container Types**

A diverse range of waste containers is managed in the storage area, including, but not limited to; waste boxes, drums, casks, self-contained waste. Containers come in varying sizes and types (e.g., metal, wood, concrete, reinforced fiberglass plywood, etc.).

**Height:**

- Drums will be stored a maximum of four drums per pallet.
- Containers will be stored to a maximum of one container high.
- Boxes will be stored to a maximum of one box high.

**Width:**

- Containers will be stored to a maximum of two containers wide.

**Aisle Spacing:**

- Aisle spacing is addressed in Addendum F.

**C.1.1.3.11 221-T BY Storage Area**

**Description**

The 221-T BY Storage Area is an uncovered, irregular shaped area encompassing asphalt and gravel.
pads. It is located northwest of the 221-T Canyon Building and 221-T Railroad Tunnel. This DWMU is
authorized to store waste drums and concrete High Integrity Containers. The size of the storage area
allows for the storage of large containers while providing a separation distance appropriate for high-level
radioactive containers. 221-T BY Storage Area will be maintained to store a variety of waste streams to
ensure adequate capacity and operational flexibility consistent with the dynamic nature of the T-Plant
mission.

Structure

The 221-T BY Storage Area is a gravel and asphalt pad measuring 87 meters (285 ft) long and 46 meters
(150 ft) wide.

Secondary Containment

Secondary containment requirements are discussed in Section C.2.2.1.4. The 221-T BY storage area does
not have a constructed secondary containment system. All waste containers requiring secondary
containment for liquids will be stored over individual portable secondary containment. For waste stored
on individual portable secondary containment, the drain plug (if existing) will be kept closed and locked.
The secondary containment systems are designed to contain over 10 percent of the total volume of liquid
in all containers that can be stored or 100 percent of the largest container, whichever is greater, and the
additional volume that would result from precipitation of a maximum 25 year storm of 24 hours duration.

Incompatible Waste

Requirements for incompatible wastes are described in Section C.2.3, and Addendum F. Containers of
incompatible wastes will be segregated in 221-T BY to meet the requirements of WAC 173-303-630(9).
Each type of incompatible waste will be physically separated from the other by means of a dike, berm,
wall, or other device.

Fire Suppression

No engineered fire suppression is provided for outside storage on a pad. A fire extinguisher will be
located within 50 meters of the storage area.

Run-On

Run-on information is found in Section C.2.2.3. Run-on is controlled by drainage sloping away from the
storage area. Waste containers will be elevated to prevent contact with any accumulated liquids. All
waste containers requiring secondary containment for liquid will be stored over individual portable
secondary containment. Adjacent areas will be stabilized and graded to slope away from the storage
location to preclude water collection.

Treatment

No treatment is authorized in the 221-T BY Storage Area.

Storage Capacity

The maximum storage capacity is 591,168 liters.

Container Types

A diverse range of waste containers is managed in the storage area, including, but not limited to; waste
boxes, drums, casks, self-contained waste. Containers come in varying sizes and types (e.g., metal, wood,
concrete, reinforced fiberglass plywood, etc.).

Height:

- Drums will be stored a maximum of four drums per pallet.
- Containers will be stored to a maximum of one container high.
- Boxes will be stored to a maximum of one box high.
Width:

- Containers will be stored to a maximum of two containers wide.

Aisle Spacing:

- Aisle spacing is addressed in Addendum F.
### Table C.2 Secondary Containment Volume and Storage Capacity for Each Dangerous Waste Management Unit

<table>
<thead>
<tr>
<th>Structure</th>
<th>Secondary Containment Volume (liters)</th>
<th>Maximum Total Storage Capacity Volume (liters)</th>
</tr>
</thead>
<tbody>
<tr>
<td>221-T Canyon Deck</td>
<td>Provided by individual spill pallets</td>
<td>S06 included in 221-T Cells</td>
</tr>
<tr>
<td>221-T Cells</td>
<td>2,000 per secondary containment liner</td>
<td>10,700,000 S06</td>
</tr>
<tr>
<td>221-T Tanks</td>
<td>187,000 50% volume of cell 5R</td>
<td>213,247 S02</td>
</tr>
<tr>
<td>221-T Railroad Tunnel</td>
<td>Provided by individual spill pallets</td>
<td>224,640 S01</td>
</tr>
<tr>
<td>221-T Head End</td>
<td>Provided by individual spill pallets</td>
<td>8,320 S01</td>
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<tr>
<td>2706-T Building</td>
<td>400</td>
<td>13,186,000 X99</td>
</tr>
<tr>
<td>2706-TA Building</td>
<td>2,000</td>
<td>13,191,000 X99</td>
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<tr>
<td>2706-TB Building (2706-TB Tank System)</td>
<td>60,300</td>
<td>0</td>
</tr>
<tr>
<td>2706-T Storage Yard</td>
<td>Provided by individual spill pallets</td>
<td>392,709 S01</td>
</tr>
<tr>
<td>214-T Building</td>
<td>1,381</td>
<td>67,392 S01</td>
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<tr>
<td>211-T Cage</td>
<td>870</td>
<td>19,968 S01</td>
</tr>
<tr>
<td>2706-T Asphalt Pad</td>
<td>Provided by individual spill pallets</td>
<td>1,246,068 S01</td>
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<tr>
<td>221-TA Storage Area</td>
<td>Provided by individual spill pallets</td>
<td>56,160 S01</td>
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<td>221-T R-5 Waste Storage Area</td>
<td>Provided by individual spill pallets</td>
<td>898,560 S01</td>
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<tr>
<td>221-T Sand Filter Storage Area</td>
<td>Provided by individual spill pallets</td>
<td>56,160 S01</td>
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<tr>
<td>211-T Pad</td>
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<td>56,160 S01</td>
</tr>
<tr>
<td>243-T Covered Storage Pad</td>
<td>Provided by individual spill pallets</td>
<td>591,168 S01</td>
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<tr>
<td>221-T BY Storage Area</td>
<td>Provided by individual spill pallets</td>
<td>591,168 S01</td>
</tr>
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</table>
### C.1.2 Transition Areas

The T-Plant operations involve in process activities outside of the T-Plant container dangerous waste management unit boundaries to safely and efficiently manage waste. These in-process activities often necessitate that the containers are moved onto asphalt or concrete surfaces within the T-Plant for a short period of time, not to exceed 24 hours. Large containers, palletized containers, and banded-containers are placed on the asphalt or concrete to facilitate the in-process waste activities. These in-process activities include, but are not limited to:

- loading and unloading of waste containers for shipments;
- performing surveys of containers;
- transferring containers from one storage location to another storage location;
- relocating a container from storage for treatment;
- performing TSD unit, inspections and repairs (such as building, roof, or floor repair);
- relocating containers to meet safety requirements;
- overpacking containers
- palletizing and banding containers
- “mining” for a container, which entails pulling containers out of a storage area to retrieve a certain container. This practice keeps the containers out of the direct path of ongoing forklift activities and minimizes the potential for a drum handling accident while “mining” containers.

The following requirements are applicable to containers with dangerous waste placed onto pavement or concrete outside of the T-Plant dangerous waste management units:

- Containers are actively controlled by T-Plant operations
- Containers are in good condition and labeled in accordance with [WAC 173-303-630(2) and (3)].
- Containers will always be closed, [WAC 173-303-630(5)(a)].
- Containers will not be handled in a manner which may rupture the container or cause a leak [WAC 173-303-630(5)(b)].
- There will be a 30-inch separation between aisles of containers, and containers can be 2 wide to form an aisle [WAC 173-303-630(5)(c)].
• Containers will be elevated or otherwise protected from contact with accumulated liquids and any run-on [WAC 173-303-630(7)(c)], except when operations finds it necessary to place containers directly on the asphalt or concrete to facilitate processing.
• If placement occurs beyond 24 hours. Ecology will be notified as to why the placement must exceed the 24 hour period and when the container is expected to be moved into a storage location.
• If any leakage/spill is noted, spill response actions will be performed and the area cleaned up to meet clean closure standards. This clean up activity will be maintained in the Hanford Facility Operating Record, T-Plant file.

C.2 Process Information
This Section discusses the processes used to treat and store waste at the T-Plant. The T-Plant receives, packages, repackages, samples, treats, and stores dangerous and/or mixed waste from various generators as well as waste generated at T-Plant. All incoming dangerous and/or mixed waste received at T-Plant will be managed in accordance with conditions of the Hanford Facility Dangerous Waste Permit in one of the four different dangerous waste management unit types (containers, tanks, containment building, or miscellaneous unit).

All containers of dangerous and/or mixed waste will be stored within the DWMU locations identified in Table C.1 unless in-progress activities or pre-transport activities are being performed on the containers (Section C.2.1).

Process requirements for waste containers and prevention of reaction ignitable, reactive, and incompatible wastes will be applied uniformly for all waste storage and treatment in T-Plant. Process requirements for tank systems, containment buildings, and other miscellaneous units are also discussed in this section.

Material, equipment, and debris located in the 221-T Cells before August 19, 1987 is past-practice waste in accordance with the Tri-Party Agreement (Attachment 1) and is not subject to permitting requirements. Upon removal, this waste will be subject to waste designation and to meeting applicable LDR requirements. Disposition of past-practice waste remaining in cells at the time of final canyon disposition will be coordinated with canyon disposition initiatives or with TSD unit closure activities.

C.2.1 Containers
Waste accepted for storage within the container dangerous waste management units at T-Plant will be packaged in containers as dictated by the size, shape, and/or form of the waste. The container selected will meet the “compatibility of waste with container” requirement found in WAC 173-303-630(4).

Storage areas for containers of waste that may contain free liquids, exhibit characteristics of ignitability or reactivity [WAC 173-303-090(5) or (7), and waste that designates as F020 through F023, F026, and F027 will be stored with a containment system unless either of the following is provided:
• Storage areas will be sloped to drain and remove liquids resulting from precipitation.
• Containers will be elevated or otherwise protected from accumulating liquids.

C.2.2 Container Management
Container management is discussed in the following sections.

C.2.2.1 Description of Containers
Containers received in T-Plant will be either in good condition, over-packed to maintain integrity during storage, or managed to comply with the requirements of WAC 173-303-630(2). Containers storing waste at T-Plant will be compatible with the waste in the container, or will be lined with materials, which will not react with, and are otherwise compatible with the wastes to be stored, as required by WAC 173-303-630(4).

T-Plant may store bulk liquid waste in 208-liter bung type containers. Exterior surfaces of 208-liter metal containers will be either painted or galvanized. The protective coatings for waste packages other than
208-liter metal containers will be identified in the waste tracking record for individual containers and/or waste streams. The majority of the mixed waste repackaged is in a solid, physical form that can include small quantities of liquids. When liquid waste or labpacks require treatment at a location other than T-Plant, the liquid waste can be stored until transfer for treatment. Non-sorbed liquid waste in small containers processed at T-Plant will be packaged in glass, plastic, or metal inner containers with sufficient absorbent material to absorb the volume of liquid present or condensate formed within the container. When appropriate or necessary, waste will be packaged into a lab pack configuration, in accordance with WAC 173-303-161. The material used to absorb liquid waste will be appropriate for the management process assigned to the waste. For waste destined for land disposal, the absorbent will meet land disposal requirements in accordance with WAC 173-303-140(4)(b). For waste destined for further storage or treatment, the material used to absorb the liquid waste will meet the waste acceptance criteria of the receiving onsite operating unit group or offsite TSD facility.

Gas generation in containers occurs due to the presence of Atomic Energy Act regulated materials and containers can be vented. Venting activities are identified in the permit for information only.

C.2.2.1.1 Container Management Practices

Before receipt at T-Plant, all containers will be closed by the generator to meet applicable packaging and shipping requirements. Upon receipt in accordance with Addendum B, all containers in each shipment or transfer will be subject to a container receipt inspection by T-Plant operations personnel. During the container receipt inspection, any discrepancies that are noted, will be documented in accordance with Addendum B, Waste Analysis Plan and recorded in the T-Plant Operating Record.

Containers will be moved within T-Plant by forklift or other equipment appropriate for the container within the locations identified in Table C.1 and the temporary areas identified in Section C.1.2. Containers may be handled individually, or as a group, on pallets when the containers are 208-liter or 322 liter drums. A maximum of four containers (208 or 322 liter drums) will be stored on each pallet. The stacking of the pallets allows for a maximum of 12 containers per stack and a maximum of three containers in height. Aisle space requirements are provided in Addendum F, Preparedness and Prevention.

Records of Hanford onsite generated waste, including WRP waste, will provide Knowledge (as defined in WAC 173-303-040, including Note 4: “Knowledge may be used by itself or in combination with testing to designate a waste pursuant to WAC 173-303-070(3)(c), or to obtain a detailed chemical, physical, and/or biological analysis of waste as required in WAC 173-303-300(2)] before the containers are accepted into T-Plant. All containers that are shipped from T-Plant will be examined visually to ensure acceptable condition, proper identification, marking, labeling, and closure. Appropriate markings and labels will be completed sealed and applied to the containers to comply with WAC 173-303-630(3).

C.2.2.1.2 Container Labeling

All waste containers shall be labeled per WAC 173-303-630(3). Labels will not be obscured and will be readable at all times.

C.2.2.1.3 Containment Requirements for Storing Containers

The following sections describe secondary containment systems at T-Plant. Secondary containment is for dangerous waste displaying the properties described in Section C.2. [WAC 173-303-630(7)(c)] Liquids in containers are not considered “free liquids” under the following scenarios:

- Containers meeting the lab pack requirements of WAC 173-303-161
- Containers meeting the combination packaging requirements in Addendum B Section B.2.6 (i.e., a packaging configuration providing 2-layers of containment for liquids) such that providing additional containment would be considered tertiary containment.

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Containers with liquids packaged with a sufficient quantity of sorbent to completely sorb all of the liquid contents.

**C.2.2.1.4 Secondary Containment System Design and Operation**

This section describes the secondary containment system and design for the T-Plant container dangerous waste management units.

The 221-T Railroad Tunnel does not have engineered secondary containment, therefore any waste containers requiring secondary containment stored within this area will be stored over devices meeting the requirements of WAC 173-303-630(7). At T-Plant, spill containment pallets are the device currently used to meet the requirement. When waste is stored on portable secondary containment, the drain plug (if existing) is kept closed and locked.

Secondary containment systems are provided at the 2706-T Building, 2706-TA Building, and 214-T Building, 211-T Cage and 211-T Pad. Each of these locations has sloping floors and sumps that serve as liquid catch basins. In addition, containers generally are elevated (e.g., pallets, skids) to protect the containers from contacting accumulated liquids.

The floors of the storage buildings were constructed from reinforced concrete sealed with a polyurethane enamel epoxy resin. When cured, this sealant has properties similar to glass. The polyurethane sealant is chemically resistant and inert with respect to acids, bases, oxidizers, combustibles, and flammables. All piping penetrations and construction joints are grouted or caulked and sealed.

Dangerous or mixed waste may be stored at the outdoor permitted storage areas identified in Section C.1.1.3 constructed of asphalt, gravel, or soil. Containers stored within these permitted storage areas will be elevated to prevent contact with accumulated liquids. In these permitted areas, containers with free liquids will be stored over individual portable secondary containment. When waste is stored on individual portable secondary containment, the drain plug (if existing) is kept closed and locked. The secondary containment systems are designed to contain over 10 percent of the total volume of liquid in all containers that can be stored or 100 percent of the largest container, whichever is greater, and the additional volume that would result from precipitation of a maximum 25 year storm of 24 hours duration.

**C.2.2.2 Containment System Capacity**

For any container dangerous waste management unit at T-Plant, secondary containment is designed to contain over 10 percent of the total volume of liquid in all containers that can be stored or 100 percent of the largest container, whichever is greater. Portable secondary containment systems are designed to provide similar containment capabilities. Secondary containment capacities are tabulated in Table C.2.

**C.2.2.3 Control of Run-On**

For storage buildings, the only major run-on or run-off foreseen would be an event such as a fire sprinkler activation or pipe breakage. The 2706-T Building, 2706-TA Building, 214-T Building, 243-T Covered Storage Pad, and storage modules are roofed structures; therefore, run-on will be inhibited.

In the event that contaminated water is released from any T-Plant structure resulting from flooding of a containment system by fire sprinkler activation or a pipe breakage (Section C.1.3), liquids will be removed according to the provisions in Section C.2.2.4 and the incident will be treated as a spill and documented in the Hanford Facility Operating Record, T-Plant file.

The roof and walls of the 221-T Canyon Building provide protection from water collection. The 221-T Canyon Deck is located on the second floor above ground level. Additionally, the building structure is elevated above ground level to prevent run-on. Adjacent areas to the building is stabilized and graded to slope away from the building to preclude water collection.

For the outdoor storage areas identified in Section C.1.1.3, run-on will be controlled by drainage sloping away from the storage area. Waste containers are elevated to prevent contact with any accumulated liquids. Adjacent areas will be stabilized and graded to slope away from the storage location to preclude
water collection.

The Dangerous and Mixed Waste Storage Modules (HS-030, HS-031, and HS-032) have multiple cells in each storage module. The containment basis for each cell is a steel secondary containment basis free of cracks with a chemical resistant coating.

Actions to be taken in response to a spill or discharge will be detailed in Addendum J, Contingency Plan.

C.2.2.4 Removal of Liquids from Containment System

Liquids can be found in containment systems from rain water, fire system water, or spills and releases from containerized waste. Liquids in containment systems without evidence of a spill or release from containerized waste are handled under normal operating procedures. Spills or releases of containerized waste to containment systems are addressed under the contingency plan requirements in Addendum J, Contingency Plan. Records of all spills and releases, and removal of liquids from the sumps, including documentation of response actions and cleanup verification, will be maintained in accordance with Permit Condition II.I.

In the event of a spill or release that results in the collection of liquid waste material in the containment system, the following will be performed.

- Containers affected will be inspected for signs of leakage. Leaking containers will be repackaged and identified in the operating logbook.
- Inspection reports and the operating logbook will be reviewed to identify any waste releases in the waste storage areas for which remedial actions have not been completed.
- The equipment used for removal of large quantities of liquid normally will be a hand-held pump or vacuum system. Sorbents will be used for removal of small amounts of liquid. The waste material will be placed in a container.
- The containerized waste will be handled as follows.
  - If the waste has been altered during stabilization and cleanup actions (sorbed, mixed, diluted, etc.), the containerized waste will be placed in storage and managed in accordance with the provisions of the waste analysis plan (Addendum B, Waste Analysis Plan).
  - Inventory will be updated to reflect the changes in waste description, volume, and storage locations.
  - When the waste was not altered during stabilization and cleanup activities, the containerized waste will be placed in a permitted storage area, and the inventory will be altered to reflect any changes.
  - Waste added to the 2706-T effluent collection system will be documented in the operations logbook.
- Documentation will be approved indicating that the waste was removed from the containment system and cleanup activities are complete. Completion of this cleanup will be documented in the logbook.

Specific actions to be taken in response to a spill or discharge will be detailed in Addendum J, Contingency Plan.

In the event of a fire sprinkler activation or pipe breakage within T-Plant, the following will be performed.

- Water in the containment system will be inspected visually for signs of contamination.
- If contamination is suspected, chemical analysis will be performed.
- Containers in the storage building(s) affected by sprinkler activation or pipe breakage will be inspected for signs of leakage.
Inspection reports and the operating logbook will be reviewed to identify any waste releases in the waste storage structure(s) for which remedial actions have not been completed.

The T-Plant supervisor will sign the operating logbook indicating that the previous steps were completed and that the storage structure(s) is clean.

Water accumulated in the containment system that is suspected of being contaminated will be managed as follows:

- The water will be removed from the containment system and managed in accordance with the waste analysis plan (Addendum B, Waste Analysis Plan).
- Water accumulated in the containment system that can be verified (via sampling and analysis in accordance with Addendum B, Waste Analysis Plan), to be free of contamination will be released to ground or to the 2706-T effluent collection system.
- The T-Plant supervisor will sign the operating logbook indicating that the water was removed from the containment system.

This section discusses operations for the outdoor sumps and operations for building sumps.

### C.2.2.4.1 Operations for Outdoor Sumps

When waste requiring secondary containment is stored in portable secondary containment, the drain plug will be kept closed and locked. The T Plant supervisor is authorized to open the drain plug. If water from a known source (e.g., rainwater or snowmelt) accumulates in the outdoor sump when waste is stored, the following will be performed:

- Liquid will be inspected visually for signs of contamination (e.g., signs of oil sheen, discoloration, solids, or abnormal indications, etc.).
- If no evidence is noted, the water can be drained from the system and discharged to the environment.
- If visual indicators from inspection of liquid are present, perform field analysis of pH.
- When the field analysis confirms pH is greater than or equal to 4.5 and less than or equal to 7.5, the water can be drained from the outdoor sump and discharged to the environment.
- The T Plant supervisor or designee will unlock the drain plug and the water will be released to the ground. Releases to the environment will be recorded in the Hanford Facility Operating Record, T Plant file.
- After the trench has been completely drained, the T Plant supervisor or designee will lock the drain plug.
- The T Plant supervisor will sign the Hanford Facility Operating Record, T Plant file, indicating that the trench was drained and the drain plug is closed and locked.

When pH results are outside of the acceptable range, the water accumulated in the outdoor sump will be containerized and placed into storage pending treatment and disposal. Containerized waste will be considered T Plant Generated Waste and will be designated in accordance with WAC 173-303-070 through -100. Actions to be taken in response to a spill or discharge of containerized waste are detailed in Addendum J, Contingency Plan.

### C.2.2.4.2 Operations for Building Sumps

If water from a known source (e.g., rainwater or snowmelt) accumulates in a building sump, the following will be performed:

- Liquid will be inspected visually for signs of contamination (e.g., signs of oil sheen, discoloration, solids, or abnormal indications, etc.).
- If no evidence is noted, the water can be removed from the system and discharged to the environment.
• If visual indicators from inspection of liquid are present, perform field analysis of pH.
• When the field analysis confirms pH is greater than or equal to 4.5 and less than or equal to 7.5
the water can be removed from the system and discharged to the environment
When pH results are outside of the acceptable range, the water accumulated in the building sump will be
removed and containerized and placed into storage pending treatment and disposal. Containerized waste
will be considered T Plant Generated Waste and will be designated in accordance with WAC 173-303-
070 through -100. Actions to be taken in response to a spill or discharge of containerized waste are
detailed in Addendum J, Contingency Plan.
Records of all spills and releases, including documentation of response actions and cleanup verification,
will be maintained in accordance with Permit Condition II.I.

C.2.3 Prevention of Reaction of Ignitable, Reactive, and Incompatible Waste in
Containers
Administrative controls will be employed to segregate waste within all permitted storage and/or treatment
areas throughout T-Plant per WAC 173-303-630(9)(c). Ignitable, reactive, and incompatible waste stored
in containers will be packaged and managed to ensure containers are in good conditions as described in
Section C.2.1.

C.2.3.1 Management of Reactive Waste in Containers
T-Plant stores waste exhibiting the characteristics of reactivity as specified in WAC 173-303-090 and
Addendum B, Waste Analysis Plan. Proper precautions will be taken to lessen the potential impact of
emergencies within the T-Plant dangerous waste management units.

C.2.3.2 Management of Ignitable and Reactive Waste in Containers
All containers of waste designated as D001 (ignitable) or D003 (reactive) will be stored in the 214-T
Building.

C.2.3.3 Design of Areas to Manage Incompatible Wastes
All incompatible waste containers will be stored in separate secondary containment systems such as a
spill pallet, separate storage modules, combination packages defined in Addendum B, or by a dike, wall,
berm or other Ecology approved device. Incompatible wastes are defined in WAC 173-303-040 to
include those that are unsuitable for mixing with another waste or material, because the mixture might
produce:
• extreme heat or pressure, fire or explosion, violent reaction;
• uncontrolled toxic dusts, fumes, mists, or gases, in sufficient quantities to threaten human health
or the environment; or
• uncontrolled flammable fumes or gases in sufficient quantities to pose a risk of fire or explosion.
Waste will not be placed in an unwashed container that previously held an incompatible waste or
material.
The Hanford onsite generating location will be responsible for determining the proper designation prior to
receipt and acceptance at the T-Plant Operating Unit Group for determining the appropriate compatibility
of the waste (Addendum B, Waste Analysis Plan). For any waste stored in T-Plant, a storage category
will be assigned to the waste as part of the waste acceptance process described in Addendum B, Waste
Analysis Plan. All containers will be subject to a container receipt inspection at the T-Plant Operating
Unit Group as described in Addendum B, Waste Analysis Plan. Containers will be stored in locations
based on the storage category.
Each dangerous waste management unit contains the ability to store at least one compatibility group.
Operations personnel will determine what waste storage category (e.g., acid or base) is allowed to be
stored in a dangerous waste management unit. Containers of incompatible wastes will be segregated to
meet the requirements of WAC 173-303-630(9). Each type of incompatible waste will be physically separated from the other by means of a dike, berm, wall, or other Ecology approved device (e.g., portable spill pallet, combination package).

The 214-T Building contains two floor areas sloped to prevent mixing of incompatible materials and to direct any spills to separate floor sumps, and a third flammable storage area. The sumps are not connected to any piping system.

C.2.4 Tank System

This section describes the design and operation of the 2706-T Tank System for treatment and storage of dangerous and/or mixed waste. Major topics discussed in this section include the following:

• Design, installation, and assessment of tanks and ancillary equipment
• Secondary containment system including leak detection
• Tank corrosion and erosion prevention
• Tank management practices
• Ventilation system to control air emissions.

This section describes the current tank system equipment. The 2706-T Tank System is located in the 2706-TB Building. A general description of the 2706-TB Building is provided in Section C.1. The liquid waste handling and transfer system is shown in Figure C.3. The 2706-T Tank System is currently not operational and is not authorized to receive waste. To place the system in operation, a Permit Modification [WAC 173-303-830] will be processed.

The 221-T Tank System described in Section C.1.1.3 is not operational and is not authorized to receive waste. Therefore, no discussion of the 221-T tank system is contained in this section.

C.2.4.1 Design, Installation, and Assessment of Tank System

The 2706–TB Tank System includes two tanks (T-XX-2706-220 and T-XX-2706-221) and ancillary equipment located in the 2706-T, 2706-TA, 2706-TB Buildings. The tanks are currently out of service. The Tank T-XX-2706-221 has never been used since installation, but is useable. Tank T-XX-2706-220 is not in operation and requires repair prior to use. As part of removal of the tanks from active service, both tanks have been confirmed to be empty and have had their inlets and outlets blanked to prevent any addition of material to the tanks. The pipe blanking was witnessed by Ecology and documented via pictures. Tank T-XX-2706-220 became corroded when non-dangerous water containing snow melt was transferred through a line contaminated with F001-F005 waste and introduced into the tank. T-XX-2706-T-220 was removed from service after the tank corroded.

Secondary containment consists of a concrete berm with an external liner made of a high-density epoxy coating that will be free of crack and gaps. The 2706-T and 2706-TA Buildings contain four sumps that provide primary and/or secondary containment for liquid decontamination waste and other compatible and accepted liquid mixed waste. The effluent filtration and transfer system are currently not in service. Modifications to the effluent transfer system are required to return them to service. The sumps are fully functional, and liquids are removed manually, if needed.

C.2.4.2 Tank System Design Requirements

The 2706-T and 2706-TA Buildings each have the capability to perform different treatment processes simultaneously. All vessels and piping systems are designed to meet operating conditions, to comply with the requirements of WAC 173-303-640 for tank system secondary containment and leak detection, and to meet applicable design standards.

Tanks, ancillary equipment, and floor coatings were designed and constructed to prevent degradation or failure because of exposure to chemical, physical, thermal, and radiological conditions. All vessels and associated piping systems will have remote monitoring capability, overfill protection systems with
manual override capability to prevent tank overfills, antifreeze protection for outdoor components
(normal operations occur within temperatures of 7°C to 49°C), components to minimize the buildup of
sludge materials, leak tested per American Society of Mechanical Engineers (ASME) codes, and all waste
transport systems (piping, pumps and valves) will have compliant secondary containment.

C.2.4.3 Tank System Integrity Assessments
A tank assessment was performed in 1999, following the evaluation, a schedule was developed, requiring
revaluation of the tank system in 2020, in accordance with WAC 173-303-640(2)(e). Integrity inspection
requirements are outlined in Functional Design Criteria T-Plant Secondary Containment and Leak
Detection Upgrades Project W-259, WHC-SD-W259-FDC-001, Rev 3. The integrity assessment report
provided in the application and contained in the administrative record was certified by an independent, qualified, registered professional engineer. A tank assessment will be performed to certify the tanks
before they are returned to active service.

C.2.4.4 Description of Tanks, Sumps, and Ancillary Equipment
The design, materials, and secondary containment for tanks, sumps, and waste transfer tank system
components are described in the following sections. Ancillary equipment includes piping, pumps, and
valves of the effluent collection system. Ancillary equipment will be inspected according to Addendum I, Inspections.

C.2.4.5 Piping
Where not located over secondary containment structures, waste transfer piping is double contained using
prefabricated pipe-in-pipe systems. The inner sleeve piping provides primary containment and the outer
sleeve provides secondary containment. All piping, vessels, and associated equipment have corrosion
protection as necessary. Waste transfer piping is 2-inch or less, Schedule 40, Type 304-L stainless steel
selected based on waste characteristics and operating temperatures. Only the concrete-embedded drain
piping from the 2706-TA HVAC sump to the 2706-TA sump and the 2706-T floor drain to the railroad pit
is double-sleeved. Piping systems are sloped to prevent the accumulation of waste liquids within the
pipes. Piping connections, flanges, and fittings are welded. The piping is installed at an elevation that
does not interfere with normal operations.

Where it is not practical to provide pipe-in-pipe systems, valves and associated non-encased piping are
placed above sealed secondary containment structures with leak detection systems. All valves and
associated non-encased piping located above the storage tanks are inside a foundation with a special
protective coating system that serves as the secondary containment.

Leak detection probes are located in the secondary pipes. The leak detection systems provide immediate
operator notification, via visible and audible alarm annunciators, of liquid entering the secondary
containment. All effluent collection system alarms will be received at an alarm panel in the 2706-TA
Building.

C.2.4.6 Pumps
The effluent collection system waste transfer pumps, except for 215 and 216, are air-operated diaphragm
pumps. Air-operated diaphragm pumps are designed to be manually turned on and off to facilitate when
waste transfers. Process air is provided by the compressed air system to operate pneumatic pumps and air
spargers. The pumps within the pit and sumps provide the means to pump waste effluent from one sump
to another or from a sump to RCRA compliant storage containers. Pumps are stainless steel.
Pumps 203 and 204 pull liquid waste from the 2706-T railroad pit sump to the 2706-TA sump.
Pumps 206 and 207 pull waste from the 2706-TA sump through T-XX-2706-208 or T-XX-2706-209
filters to the T-XX-2706-221 tank. Pump 212 is located in the 2706-TB secondary containment sump.
Pump 216 is a centrifugal pump that transfers condensate from the 2706-TA HVAC sump to the 2706-T
railroad pit sump.
C.2.4.7 2706-T Railroad Pit Sump

The railroad pit floor slopes to the railroad pit sump that measures 610 millimeters by 610 millimeters by 300 millimeters deep. The railroad pit sump acts as primary and secondary containment for liquid mixed waste from treatment activities in the 2706-TA Building. The railroad pit sump is a 400-liter below grade concrete containment sump. The sump is double lined with stainless steel to provide both primary and secondary containment for treatment solutions, is compatible with the waste, and does not undergo general corrosion because of exposure to waste. The primary liner for this sump is 0.79 centimeter thick and the secondary liner is 0.95 centimeter thick. The sump has a level indicator and leak detection. The sump is equipped with a sump pump that transfers liquid waste and sediment sludge to the 2706-TA sump. Transfers to a container are accomplished using a portable sump pump.

The base for the liner is the 2706-T floor that is structurally sound to support the load of the liner and the waste. In addition to dangerous waste regulations, the design considers protection against seismic events from the 2706-T seismic upgrades (ICBO 1991).

C.2.4.8 2706-TA HVAC Sump

The 2706-TA HVAC sump collects condensate produced by the atmospheric cleanup train (ACT)-II ventilation system and HVAC units. The sump capacity is approximately 360 liters. The sump is double lined with stainless steel to provide both primary and secondary containment for treatment solutions. The liner is compatible with the waste and undergoes general corrosion because of exposure to this waste. The primary liner is 0.64-centimeter thick and the secondary liner is 0.95-centimeter thick. The sump has a level indicator, and leak detection. The sump may be pumped to the 2706-T Railroad Pit Sump or to a container.

The base for the liner is the 2706-TA Building floor that is structurally sound to support the load of the liners and the waste. In addition to dangerous waste regulations, the design considers protection against seismic events from the 2706-TA seismic upgrades (ICBO 1991).

C.2.4.9 2706-TA Sump

The 2706-TA sump provides primary and secondary containment for treatment wastewater generated in the 2706-TA Building. The floor is sloped to allow liquids to flow into the sump. The 2706-TA sump has a 2,000-liter capacity. The sump is double lined with stainless steel to provide both primary and secondary containment for decontamination solutions. The liner is compatible with the waste and does not undergo general corrosion because of exposure to this waste. The primary liner is 0.79-centimeter thick and the secondary liner is 0.95-centimeter thick. The sump has a level indicator, and leak detection. The sump may be pumped to a container.

The base for the liner is the 2706-TA Building floor that is structurally sound to support the load of the liner and the waste. In addition to dangerous waste regulations, the design considers protection against seismic events from 2706-TA seismic upgrades (ICBO 1991) (ICBO, International Conference of Building Officials, now known as ICC, International Code Council).

C.2.4.10 2706-TB Building Basin and Sump

The 2706-TB Building contains a secondary containment basin located beneath the floor grating to collect and contain leaks or spills as well as a 20-minute deluge from sprinkler activation. This basin may hold 60,300 liters (15,930 gallons). The basin contains a collection sump with a pump to transfer liquids out of the secondary containment into a portable collection container.

The floor of the building is a coated, curved concrete basin free of cracks that acts as a liner system. The basin floor slopes to a smaller, similarly coated blind sump that holds 230 liters. There is direct leak detection in the sump. All releases of liquids are contained in the basin and sump and pumped into a container.
C.2.5  Air Emissions Control

This section addresses the T-Plant requirements of air emission standards under 40 CFR 264, Subpart BB [WAC 173-303-691] and Subpart CC [WAC 173-303-692].

C.2.5.1  Applicability of Subpart BB Standards

The air emission standards of 40 CFR 264, Subpart BB, apply to equipment that contains or contacts hazardous waste with organic concentrations of at least 10 parts per million by weight. Organic solvents are not used in decontamination processes that are the primary source of tank system waste.

The only equipment at T-Plant that is subject to the provisions of Subpart BB is the carbon canister associated with the aerosol can venting equipment. This equipment qualifies as a control device subject to the provisions of 40 CFR 264.1060. An exemption is provided in 40 CFR 264.1050(f) for equipment that contains or contacts hazardous waste with organic concentrations of at least 10 percent by weight for a period of less than 300 hours per calendar year. Because this equipment is managed in a manner that meets the requirements of this exemption, this equipment is exempt from the requirements of 40 CFR 264.1052 through 264.1060. As required by 40 CFR 264.1064(g)(6), the aerosol can venting equipment is identified in a log that is maintained as part of the Hanford Facility Operating Record, T-Plant Complex file. This equipment is marked as required by 40 CFR 264.1050(d).

C.2.5.2  Applicability of Subpart CC Standards

The air emission standards of 40 CFR 264, Subpart CC, apply to tank, surface impoundment, and container storage units that manage waste with average volatile organic concentrations equal to or exceeding 500 parts per million by weight, based on the dangerous waste composition at the point of origination [61 FR 59972]. However, containers that are used solely for management of mixed waste are exempt.

TSD owner/operators are not required to determine the concentration of volatile organic compounds in a dangerous waste if the waste is placed in waste management units that employ air emission controls that are in compliance with the Subpart CC standards. Therefore, the approach to Subpart CC compliance at T-Plant is to demonstrate that T-Plant meets the Subpart CC control standards [40 CFR 264.1084 - 264.1086] for containers of dangerous waste.

Container Level 1 and Level 2 standards are met at T-Plant by managing all dangerous waste in U.S. Department of Transportation containers [40 CFR 264.1086(f)]. Level 1 controls are required for containers that have a design capacity of more than 0.1 cubic meters and less than or equal to 0.46 cubic meters. Level 1 controls are required for containers that have a design capacity of greater than 0.46 cubic meters that is not in "light material service". Level 2 controls are required for containers that have a design capacity of more than 0.46 cubic meter of waste that is in 'light material service'. Light material service is defined where a material in the container has one or more organic constituents with a vapor pressure greater than 0.3 kilopascal at 20°C, and the total concentration of such constituents is greater than or equal to 20 percent by weight.

The monitoring requirements for containers with Level 1 and Level 2 controls include a visual inspection when waste initially is placed in a container at T-Plant, and at least once every 12 months when stored onsite for 1 year or more.

If DOT compliant containers are not used at the T-Plant, alternate container management practices are used that comply with the Level 1 or Level 2 standards as applicable. Specifically, Level 1 standards allow for a "container equipped with a cover and closure devices that form a continuous barrier over the container openings such that when the cover and closure devices are secured in the closed position there are no visible holes, gaps, or other open spaces into the interior of the container. The cover may be a separate cover installed on the container...or may be an integral part of the container structural design..." [40 CFR 264.1086(c)(1)(ii)]. An organic-vapor-suppressing barrier, such as foam, also may be used [40 CFR 264.1086(c)(1)(iii)]. Section C.2 provides detail on container management practices at the T-
Container Level 3 standards apply when a container with a design capacity of greater than 0.1 cubic meter is used for the "treatment of a hazardous waste by a waste stabilization process" [40 CFR 264.1086(2)]. Treatment of dangerous waste in containers is provided at T-Plant and these standards apply.

C.2.6 Containment Buildings [40 CFR 264, Subpart Dd]

The containment building dangerous waste management unit is defined as locations within the 221-T Building that includes the 221-T Canyon Deck, and selected 221-T Cells. The containment building acts as primary containment for stored waste and materials (generally equipment and debris) not in containers. The waste stored in the containment building may contain free liquids. The T-Plant containment building is designed and operated in accordance with WAC 173-303-695, which incorporates by reference the requirement of 40 CFR 264, Subpart DD, "Containment Buildings". The capacity of the containment building is identified in Sections C.1.1.1, C.1.1.2, C.1.1.4, and Table C.2.

C.2.6.1 221-T Building Design [40 CFR 264.1101(a)]

Descriptions of the basic design, materials of construction, design standards, and demonstration of structural integrity of the 221-T Building are provided in section C.1.1.1.1, C.1.1.2, and C.1.1.3 to meet the requirements of 40 CFR 264.1101(a)(1) and (2).

C.2.6.1.1 221-T Primary Containment System [40 CFR 264.1101(b)(1)]

The 221-T Building has the primary containment system for any non-containerized radiologically or chemically contaminated equipment and waste while in the building. The 221-T Building containment system was designed to restrict releases of radioactivity or other hazardous materials to the environment or into areas normally occupied by personnel. The following sections describe the primary containment system.

C.2.6.1.2 221-T Primary Barrier Design [40 CFR 264.1101(b)(1) and (a)(4)]

The floor of the 221-T Building is 1.8- to 2.7 (6 to 9 ft) meter-thick reinforced concrete. The concrete is essentially an inert material with respect to oxidizing, combustible, and flammable materials. Operating history has demonstrated the ability of the building to withstand the movement of personnel, waste, and handling equipment. During the operational life of the containment building, there have been no indications that the building is unable to withstand the physical or chemical properties of the waste entering the building.

C.2.6.1.3 221-T Liquids Collection, Removal System, Secondary Containment [40 CFR 264.1101(b)(2)].

Liquids can be present in the waste to be managed in the containment building. Bulk liquids will not be managed, however small amounts of liquids in equipment (e.g., pumps) can be present. 40 CFR 264.1101(b)(2) requires a liquid collection and removal system to minimize the accumulation of liquid on the primary barrier. Dangerous or mixed waste managed in the 221-T Canyon Deck will be provided with secondary containment based on the standards for containers found in WAC 173-303-630(7), in which portable secondary containment devices will be provided for storage of the waste.

For the 221-T Cells, the cell drains have been plugged, such that any liquids will be contained in the cells. The 221-T Cell containment building secondary containment is composed of a freestanding steel liner, equipped with container placement guides for six Large Diameter Containers (LDC) with one storage position slightly larger than the other five to accommodate a container overpack should one be required to store a leaking container. Each liner will be sloped to a sump equipped with leak detection and a sump pump assembly designed to remove any material resulting from a leak. The wetted parts of the leak detection and pump assemblies are made from materials compatible with the waste. The leak detection system will be equipped with conductivity probes to determine the presence of liquid in the sump. The system will be connected to the central enunciator panel in addition to remotely alarming at the local
panel(s) in the in the 221-T Canyon Building Operating Gallery.

C.2.6.1.4 C.2.6.1.7 221-T Operations to Ensure Containment [40 CFR 264.1101(a) through (d)]

The 221-T canyon is used primarily as a storage area for containerized and non-containerized waste. The following sections describe the operation used to ensure containment of the non-containerized waste.

C.2.6.1.5 Primary Barrier Integrity [40 CFR 264.1101(c)(1)(i)]

Building differential pressure is monitored to ensure negative air pressure keeps contamination inside the containment building dangerous waste management unit as described in Section C.2.6.1.14.

C.2.6.1.6 221-T Incompatible Waste and/or Treatment Reagents [40 CFR 264.1101(a)(3)]

No incompatible waste or treatment reagents will be placed in the unit or its secondary containment system that could cause the unit to leak, corrode, or otherwise fail. Incompatible waste determinations are made according to Addendum B, Waste Analysis Plan.

Treatment reagents will include those necessary to perform the following treatment activities in the containment building unit: solidification, decontamination using solid media, or macroencapsulation. An evaluation will be performed to ensure treatment reagents will not cause the unit to leak, corrode, or otherwise fail on a case-by-case basis. This evaluation will be maintained in the Hanford Facility Operating Record, T-Plant Complex file.

C.2.6.1.7 221-T Level/Height of Waste Contained [40 CFR 264.1101(c)(1)(ii)]

The 221-T Building is a fully enclosed waste treatment and storage area. Reinforced concrete blocks cover most of the cells in the 221-T canyon. These cells can contain waste to a volume of 5.4 meters long by 4.0 meters wide by 8.5 meters (13 by 28 ft) high.

C.2.6.1.8 221-T Prevention of Waste Track-Out [40 CFR 264.1101(c)(1)(iii)]

Extensive requirements are in place to prevent tracking out contamination, including administrative access controls and monitoring. Protective clothing is required for personnel inside the 221-T canyon. Exiting the canyon requires step pads to control where the contamination ends, removal of all protective clothing, and monitoring to determine if any contamination has reached the underlying clothing.

Waste tracked out by the movement of waste or equipment is prevented by monitoring all equipment or vehicles that exit the building and decontaminating as required. Waste to be removed from the building is containerized, wrapped in plastic, or transferred as self-containerized waste. The waste is screened for contamination before leaving the building, and could be withheld for treatment if necessary.

C.2.6.1.9 221-T Control of Fugitive Dust Emissions [40 CFR 264.1101(c)(1)(iv)]

Fugitive dust emissions are controlled through the use of negative pressure differentials and filters. Contaminated areas are kept at a lower pressure than non-contaminated areas, resulting in airflow from the less contaminated area to the contaminated area, and effectively preventing the release of fugitive emissions. The 221-T canyon ventilation system consists of the 291-T exhaust system for exhausting the main canyon and 221-TA supply fans to supply air to the canyon.

In addition to the equipment in the ventilation system, operational restrictions apply to the 221-T canyon. These include ensuring that the entry doors are closed when operations are in progress, and having at least one 291-T exhaust fan in operation during decontamination work that has a high potential to create airborne contamination.

C.2.6.1.10 C.2.6.1.13 Detection and Repair of 221-T Problematic Conditions [40 CFR 264.1101(c)(3)]

Response methods for a release of dangerous waste in the 221-T Building and to any condition that could lead to a release of dangerous waste from the building are provided in Addendum J: Contingency.
C.2.6.1.11 221-T Containment Building Inspection [40 CFR 264.1101(c)(4)]

Monitoring of building air differential pressure is used in lieu of visual inspections. Addendum I: Inspections, describes the containment building inspection.

C.2.7 Miscellaneous Units

The miscellaneous unit dangerous waste management units are defined as the 2706-T Building and the 2706-TA Building. The 2706-T and 2706-TA Buildings are used to treat and store railroad cars, buses, trucks, automobiles, heavy equipment, process equipment, and other materials and debris. Non-containerized waste segregation, sampling, treatment, verification, and/or repackaging are conducted. Under the provisions of this permit, the waste managed in the miscellaneous unit could contain free liquids and waste treatment activities could use liquid solvents on operational area floors. The following sections address storage and treatment in these dangerous waste management units. The 2706-T and 2706-TA Buildings each have the capability to perform different treatment processes simultaneously.

The foundation and floor of these buildings were constructed at the same time. The location that was to become the 2706-TA Building was poured as a pad immediately adjacent to the 2706-T Building. The 2706-TA building meets the UBC design loads similar to the 2706-T Building (HNF-SD-WM-ISB-006) (ICBO 1991). In the 1990s, the 2706-TA Building was enclosed completely and upgraded to allow for decontamination operations similar to those occurring in the 2706-T Building.

C.2.7.1 2706-T and 2706-TA Building Design

Descriptions of the basic design, materials of construction, what is known of the design standards, and demonstration of structural integrity of the 2706-T Building and 2706-TA Building are provided in Sections C.1.1.2.1 and C.1.1.2.2, respectively.

C.2.7.2 2706-T Building and 2706-TA Building Primary Containment System

The 2706-T Building and 2706-TA Building act as the primary containment system for any noncontainerized waste treated or stored in the buildings. The containment system for each building was designed to restrict releases of dangerous or mixed waste to the environment. The following sections describe the primary containment system.

C.2.7.3 2706-T Building and 2706-TA Building Primary Barrier Design

The buildings are roofed and fully enclosed. The floor is reinforced concrete, sealed with a durable chemical resistant epoxy coating. The concrete is an inert material with respect to oxidizing, combustible, and flammable materials. The floors are sloped toward the collection sumps to minimize the potential for standing liquids to be present.

C.2.7.4 2706-T and 2706-TA Buildings Liquid Collection, Removal, Secondary Containment

Miscellaneous unit operations allow storage of non-containerized waste potentially containing free liquids and decontamination or treatment activities using free liquids on 2706-T Building and 2706-TA Building operational area floors. The effluent control system that provides secondary containment for tanks and containers also provides containment, leak detection, and liquid removal capability for non-containerized waste containing free liquids and for liquids generated during treatment activities. Consequently, no concern exists for accumulation of liquids on the primary barrier.

The floor and sump will provide secondary containment, leak detection, and liquid removal capability for non-containerized waste containing free liquids and for liquids generated during treatment activities. The floors are constructed from reinforced concrete sealed with a polyurethane enamel epoxy resin. When cured, this sealant has properties similar to glass. The polyurethane sealant is chemically resistant and inert with respect to acids, bases, oxidizers, combustibles, and flammables.

The maximum secondary containment volume is 400 liters in the 2706-T Building and is 2,000 liters in

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the 2706-TA Building. Storage of non-containerized waste requiring secondary containment beyond this
sump volume design capacity will be achieved through the use of portable secondary containment.

C.2.7.5 2706-T Building and 2706-TA Building Operations to Ensure Containment
Operations to ensure containment in the 2706-T Building and 2706-TA Buildings are described in the
following sections.

C.2.7.5.1 2706-T Building and 2706-TA Building Primary Barrier Integrity
All of the concrete floors have been sealed with a durable chemical resistant coating. Periodic
surveillances for cracks, gaps, corrosion, or other deterioration that could allow releases of waste will be
conducted. Floor surfaces will be inspected before and after operations involving free liquids (Addendum
F, Preparedness and Prevention). If any problems are identified, steps will be taken to correct the
problem and the actions recorded.

Addendum I, Inspections, describes visual inspections performed to verify building structural integrity as
the primary barrier for non-containerized waste.

C.2.7.5.2 2706-T Building and 2706-TA Building Incompatible Waste and/or Treatment
Reagents
No treatment reagents will be placed in the unit or its secondary containment system that could cause the
unit to leak, corrode, or otherwise fail. Incompatibility determinations for waste and treatment reagents
are made according to Addendum B, Waste Analysis Plan.

Treatment reagents will include those necessary to perform the following treatment activities in the
miscellaneous unit: solidification, decontamination using liquid or solid media, or macroencapsulation.
An evaluation will be performed to ensure treatment reagents will not cause the unit to leak, corrode, or
otherwise fail on a case-by-case basis. This evaluation will be maintained in the Hanford Facility
Operating Record, T-Plant Complex file.

C.2.7.5.3 2706-T Building and 2706-TA Building Level/Height of Waste Contained
The 2706-T Building and 2706-TA Building are roofed, fully enclosed waste storage areas. Storage of
waste will be conducted to ensure the height of the waste does not pose impediments to safe storage of
waste in the unit.

C.2.7.5.4 2706-T Building and 2706-TA Building Prevention of Waste Track-Out
Extensive requirements will be in place to prevent the tracking out of contamination, including
administrative access controls and monitoring. The minimum protective clothing requirements for
personnel inside the 2706-T Building and 2706-TA Building include special work procedure clothing and
a fitted, full-face respirator when needed. Exiting the 2706-T Building and 2706-TA Building requires
step off pads to control where the contamination ends, removal of protective clothing, and monitoring
equipment to determine if any contamination has reached the underlying clothing.

Waste that could be tracked out by the movement of waste or equipment will be prevented by monitoring
all equipment or vehicles that exit the building, and decontaminating as required. Waste to be removed
from the building will be containerized, wrapped in plastic, or transferred as self-containerized waste.
The waste could be withheld for additional treatment if necessary

C.2.7.5.5 Control of 2706-T Building and 2706-TA Building Fugitive Dust Emissions
Fugitive dust emissions are controlled through the use of negative pressure differentials and filters.
Contaminated areas are maintained at a lower pressure than noncontaminated areas, resulting in airflow
from the less contaminated area to the contaminated area. When operating, the HVAC systems provide
constant airflow from clean areas toward areas of higher contamination. This 'negative' air pressure
prevents contamination from entering clean areas and the environment. The systems are designed to filter
any contamination that might be released during operations. The air is sampled, passed through HEPA
filters, and exhausted to the 2706-T common stack for release. Air locks exist at personnel entries to maintain differential pressure.

C.2.7.5.6 Detection and Repair of 2706-T Building and 2706-TA Building Problematic Conditions

Response methods for a release of dangerous and/or mixed waste in the 2706-T Building and 2706-TA Building and to any condition that could lead to a release of dangerous and/or mixed waste from the building are provided in the Building Emergency Plan and Addendum J: Contingency Plan.
Figure C.15 2706-T Effluent Collection System Process Flow.
Figure C.16 221-T Building Air Flow and Exhaust.
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