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FOR
CONTAINERS

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Attach the requirement of either a. or b...

a. Demonstrate compliance with 264.175(c) by attaching:

(1) Test procedures and results or other documentation or information to show that the wastes do not contain free liquids; and

(2) A description of how the storage area is designed or operated to drain and remove liquids or how containers are kept from contact with standing liquids.

The container storage unit at the Triumvirate Environmental facility stores wastes containing free liquids.
Therefore, this application does not address item a. shown above.

The application continues with paragraph b. on the next page.

II.B.1 SECONDARY CONTAINMENT SYSTEM

b. Demonstrate compliance with 264.175(b) by attaching a description of the containment system which includes:

Basic design parameters, dimensions, and materials of construction;

The floor surface level of the container storage unit is four feet above the natural ground level. The base that supports the floor consists of fill material compacted in accordance with appropriate engineering practices. Side walls surround the fill material to keep it in place. The floor of the unit consists of a 6-inch reinforced concrete slab, free of cracks, having adequate strength to support the static and dynamic loads to which it is subjected.

The storage unit area is of rectangular shape, 87 feet long along the west side and 60 feet long on the north and south sides. The east side of the area is 90 feet long. This side is longer than the west side because there is a fire wall along the west half section of the north wall which was built 3 feet inside the unit and isolates the north building from the container storage unit An office is located on the northeast corner that occupies a 20.75-foot section along the east side and a 17.66-foot section of the south side of the unit area. The dimensions of the storage unit described in this paragraph are shown in Figure II B 1.

The unit floor has several roll-over berms and curbs designed to segregate wastes of different types stored in containers in the unit. Roll-over berms allow forklift access to the cells to deposit and withdraw drums on pallets. Curbs separate the secondary containment systems of contiguous cells. The roll-over berms were formed and poured over sections of the floor cut out of the slab. Two 3.5-inchhigh and 5-feet-wide roll-over berms are provided in the container storage unit. A 72.25-foot-long berm is located along the east side. The other berm is 42.33 feet long located along the south wall. Curbs 3.5 inches high and 8 inches wide were built of concrete poured over reinforcement rods secured to the floor by pins screwed into the concrete slab. There are five curbs separating six cells along the south wall of the unit and nine curbs along the east wall. A bonding agent was applied to the floor before the concrete was poured to increase adherence and prevent the formation of a gap between the floor and the bottom of the curb. Figure II B 2 shows the location of roll-over berms and curbs in the container storage unit area.

A protective coating resistant to solvents and corrosive liquids was applied to the floor surface of the container storage unit. The thickness and the quality of the coating material not only makes the floor sufficiently impervious to contain leaks, but also protects the floor material from attack by aggressive chemicals and from wear caused by equipment traffic over the area. Product specification for the coating material is

included in Exhibit II.B.1.-1. The facility may use other materials that provide similar results.

(2) How the design promotes drainage or how containers are kept from contact with standing liquids in the containment system;

Secondary containment systems in the container storage unit are located over a floor that is not sloped. The facility stores in the unit waste in containers that are placed on pallets, which keep the containers from contacting any standing liquids.

(3) Capacity of the containment system relative to the number and volume of containers to be stored;

In accordance with 40 CFR 264.175(b)(3), the containment system must have sufficient capacity to contain 10% of the volume of the containers stored in the cell. A number of containers in the cell may have little or no liquid; however, for the purpose of this application, it is assumed that 100% of the containers contain 100% liquid waste material.

The container storage unit stores a maximum number of 824 —55-gallon drums, or equivalent, in three sub-units. The south sub-unit is located along the south wall of the unit and consists of six separate cells, each capable of storing up to 24 —55-gallon drums or equivalent. The east sub-unit holds 240 —55-gallon drums, or equivalent, in nine cells located along the east wall of the unit, and the northwest sub-unit stores 440 —55-gallon drums in the northwest corner of the unit in one large cell. The northwest sub-unit is provided with a secondary containment system that occupies the rest of the area of the container storage unit to the north of the south sub-unit and to the west of the east sub- unit. The fire wall, the office walls, and the wall on the south side of the unit are made entirely of concrete block. The rest of the walls of the unit are made of sheet metal, but there is a continuous concrete curb four inches high running along the inside of these walls. The concrete block walls and the concrete curb along the sheet metal walls complete the secondary containment walls for some of the cells.

<u>Containment Volume 1</u>

As shown in Figure II B 2. , the six cells located along the south wall of the unit (the south sub-unit) are provided with secondary containment systems having two widths; the width of the cell at the west end is 87 inches while the rest are 74 inches wide. All six cells have the same length and depth. Since every cell stores the same volume of waste, containment volume calculation is needed only for the cells having the shortest width (74 inches).

Width: 74" (6.166'), Minimum height of roll-over berms and curbs: 3.5" (0.292')
Length: 158" (13.166'

Wall to floor/roll-over berm intersect length: 158" (13.166'), Half roll-over berm width: 30" (2.5')

13.166' x 6.166' x 0.292' = 23.70 cu. ft.
2.5' x 6.166' x 0.292'/2 = 2.25 cu. ft.
Volume of Containment without pallets =25.95 cu. ft. x 7.48 gal/cu. ft. = 194.11 gal.
Volume Displacement of 3 Pallets: 3 x 5.40 gal/pallet (Fig. II B 3) = 16.20 gal. Volume of Containment with Pallets: = 177.91 gal.

Cell Maximum Storage Capacity: 24 x 55 gal/drum = 1,320 gal Minimum

Required Containment Volume: 1,320 gal x 0.1 = 132 gal

The volume of the secondary containment (177.91 gallons) is greater than 10% of the maximum storage capacity (132 gallons).

Containment Volumes 2 and 2a

The east container storage area has nine cells along the east wall of the unit (the east sub-unit) featuring secondary containment systems with three different widths; the cell at the north end is 208 inches wide; the cell at the south end is 80 inches wide; and the remaining cells are 64 inches wide. All nine cells have the same length and depth. The eight southern-most cells each store the same volume of waste. The cell at the south end is 80 inches wide, and the seven cells to the north each have a 64-inch width. Therefore, calculations demonstrating that the 64-inch-wide cells meet the 10% secondary containment volume requirement also demonstrate that the cell 80 inches wide complies with the same requirement. The containment volume calculation is also needed for the cell at the north end that is 208 inches wide and stores twice as much as the other eight cells.

Containment Volume 2

Width: 64" (5.333'), Minimum height of roll-over berms and curbs: 3.5" (0.292')
Length: 152" (12.666')
Wall to floor/roll-over berm intersect length: 152" (12.666'), Half roll-over berm width: 30" (2.5')

12.666' x 5.333' x 0.292' = 19.72 cu. ft.
2.5' x 5.333' x 0.292'/2 = 2.25 cu. ft.
Volume of Containment without pallets =21.97 cu. ft. x 7.48 gal/cu. ft. =164.36 gal.
Volume Displacement of 3 Pallets: 3 x 5.40 gal/pallet (Fig. II B 3) = 16.20 gal Volume of Containment with Pallets: = 148.16 gal.

Cell Maximum Storage Capacity: 24 x 55 gal/drum = 1,320 gal

Minimum Required Containment Volume: 1,320 gal x 0.1 = 132 gal

The volume of the secondary containment (148.16 gallons) is greater than 10% of the maximum storage capacity (132 gallons).

Containment Volume

Width: 208" (17.333'), Minimum height of roll-over berms and curbs: 3.5" (0.292';
Length: 152" (12.666')
Wall to floor/roll-over berm intersect length: 152" (12.666'), Half roll-over berm width: 30" (2.5')

12.666' x 17.333' x 0.292' = 64.10 cu. ft.
2.5' x 17.333' x 0.292'/2 = 6.33 cu. ft.
Volume of Containment without pallets = 70.43 cu. ft. x 7.48 gal/cu. ft. = 526.82 gal.
Volume Displacement of 6 Pallets: 6 x 5.40 gal/pallet (Fig. II B 3) = 32.40 gal. Volume of Containment with Pallets: = 494.42 gal.

Cell Maximum Storage Capacity: 48 x 55 gal/drum = 2,640 gal Minimum

Required Containment Capacity: 2,640 gal x 0.1 = 264 gal

The volume of the secondary containment (494.42 gallons) is greater than 10% of the maximum storage capacity (264 gallons).

Containment Volume 3

The area occupied by the large cell located in the northwest corner (the northwest sub-unit) of the unit is bordered by the wall of the unit at the west, a roll-over berm on the south side, a section of the wall of the office, and a roll-over berm at the east and the north wall of the unit, including the fire wall along the north side. Figure II B 2 show the dimensions that are necessary to calculate the area in question. To simplify the calculation of the containment volume, it is assumed that the cell ends where the floor meets the roll-over berms entering the south and east containment cells.

Area of the Container Storage Unit: 1,116" x 720" = +803,520 sq. in.
Area Occupied by Fire Wall: 368" x 36" = -13,248 sq. in.
Area Occupied by South Sub-Unit: (158" + 60") x 508" = -110,744 sq. in.
Area Occupied by Office: 212" x 249" = -52,788 sq. in.
Area Occupied by East Sub-Unit: (152" + 60") x 867" = -183,804 sq. in.
Area Occupied by Northeast Sub-Unit: 442,936 sq. in.
Minimum Height of Roll-Over Berms and Curbs: 3.5"
Volume of Containment Without Pallets: 1,550,276 cu. in.
(1,550,276 cu in./1,728 cu. in. per cu. ft.) x 7.48 gal per cu. ft. = 6,711 gallons

Volume Displacement of 55 Pallets: 55 x 5.4 gal/pallet = 297.00 gallons

Volume of Containment with Pallets: = 6,413 gallons

Cell Max. Storage Capacity: 440 x 55 gal/drum = 24,200 gal

Minimum Required Containment Capacity: 24,200 gal x 0.1 = 2,420 gal

The volume of the secondary containment (6,413 gallons) is greater than 10% of the maximum storage capacity (2,420 gallons).

(4) Provisions for preventing or managing run-on; and

The floor surface of the container storage unit is four feet above natural ground level. The floor surface elevation is above the 100-year flood plain elevation, thus preventing run-on.

(5) How accumulated liquids can be analyzed and removed to prevent overflow.

Liquids spilled in any cell of the unit will spread onto the cell area, and, depending on the amount of waste spilled, the level may rise above the floor surface or will only wet the area where it spreads. The selection of sampling methods that may be used to collect samples from spills occurring in a cell depends on the nature and the media of the waste spilled. Collection of samples from spills in the container storage unit does not necessarily constitute a problem.

Removal of standing liquids in a container storage cell may be accomplished with the use of absorbent materials and/or pumps driven by air or hand. Solid materials will be removed manually. There is adequate space around the cells to operate equipment necessary to remove spilled waste. Since the height of the roll-over berms and curbs providing secondary containment for the cells is smaller than the height of the walls and curbs that surround the unit, a spill overflowing a cell will be contained by the secondary containment of the adjacent cells and will not overflow the unit until the secondary containment system for every cell is overflowed.

II.B.2 IGNITABLES AND INCOMPATIBLES

2. *Attach sketches, drawings, or data demonstrating compliance with 264.176 (Special requirements for ignitable or reactive wastes) and 264.177 (Special requirements for incompatible wastes) where applicable.*

The entire perimeter of the container storage unit is located at least 50 feet from the facility's property line. Consequently, wastes stored in the unit are also located beyond the required property line set-back distance.

The Triumvirate Environmental facility consolidates wastes from various sources to either treat the waste on-site or to ship the waste off-site for treatment or disposal. Only containers equal to or greater than one gallon may be poured together using the compatibility tests and procedures found in the Waste Analysis Plan. Smaller containers will not be opened, but they may be re-packaged together. Containers 55 gallons or greater, containing RCRA metals (D004-D008, D010-D012), may be stabilized using cement and/or fly ash. An example would be lead contaminated sandblast grit. Procedures to prevent incompatible wastes from being placed in the same container are described in the Waste Analysis Plan.

Containers used to consolidate waste are usually new or reconditioned. When a used drum is utilized to accumulate waste, waste previously held in the drum is removed. Hazardous waste will not be placed in an unwashed container that previously held an incompatible waste or materials (40CFR 264.177(b)).

The facility stores incompatible wastes in cells that are separated by berms and curbs. A separation of at least two feet is provided between rows of pallets located inside two adjacent cells. Berms and curbs provide a physical barrier that prevents leakage from the drums in a cell from reaching other cell areas. Wastes stored in one cell belong to one hazard class or group of compatible hazard classes. A more extensive description of the method used by the facility to maintain incompatible waste separation is included in the next section.

II.B.3 SEGREGATION AND SEPARATION

3. *Where incompatible wastes are stored or otherwise managed in containers, attach a description of the procedures used to ensure compliance with 264.177(a) and (b) (Special requirements for incompatible wastes) and 264.17(b) and (c) (General requirements for ignitable, reactive, or incompatible waste)*

The facility stores incompatible wastes in containers in the container storage unit and consolidates some of these wastes in containers in two areas of the facility. When incompatible wastes are stored in the container storage unit, the facility follows a system designed to keep incompatible wastes apart. Consolidation operations include procedures designed to screen and test wastes to prevent the consolidation of incompatible wastes in the same container. This section discusses the systems used by the facility for storing containers and consolidating waste in a safe manner in accordance with the requirements of 40 CFR 264.177(a) and (b), as well as 40 CFR 264.17(b) and (c). Storage and consolidation operations and solidification/stabilization operations are addressed separately.

THE CONTAINER STORAGE UNIT

This unit stores hazardous waste in drums placed on pallets. Pallets holding up to four 55-gallon drums each are, at the most, double-stacked and arranged in rows in the manner depicted in Figure II B 2. Every cell is designated with the compatible hazard classes of wastes stored in it. The designated classes for each cell are based on a compatibility system established by the Department of Transportation (DOT). DOT regulations require the use of this system to control hazardous materials during the course of transportation. Triumvirate Environmental has decided to utilize this system described by 49 CFR 177.848, Segregation of Hazardous Materials, because the system is easy to understand, use, and communicate.

The DOT segregation system uses a chart to identify materials that may be stored together based on the hazard class assigned to each material. Triumvirate Environmental gives careful consideration to the assignment of the hazard class to waste materials during the approval process authorizing the shipment of the waste to the facility. The chart shown in Table II.B.3.-1 is a modified copy of the DOT chart. The chart shown in this section deletes hazard classes that are not accepted at the facility (divisions 1.1 through 1.6 - explosives, and class 7 - radioactives). 'Where the chart indicates "x" at the intersection of a hazardous class row and column, these hazard classes will not be stored in the same cell. Where the chart indicates "o" at the intersection of a hazard class and column, these hazard classes may be stored in the same cell with certain restrictions (e.g., a labpack containing hazardous class 5.2 material can be stored in the same cell with a container of hazard class 8 corrosive liquids).

When containers arrive at the facility, the drums are removed from the transportation vehicle and arranged in a row for testing and/or inspection, depending on whether the waste is to be accepted at the facility. During the inspection, facility operators review and verify that the hazard class displayed on the hazardous waste label on every container is correct by comparison the electronic tracking system which prints a new bar-code labels for all waste that is terminated at the facility. The electronic tracking system is a system tracks every inbound and outbound manifest to Triumvirate Environmental. Upon review of the hazard class and shipping label the drum is transferred to the appropriate cell in accordance with the DOT segregation system.

Flammable liquids that are classified by the National Fire Protection Association NFPA 30 as Class IA are accepted in containers that do not exceed 55 gallons. Table II.B.3.-1 indicates that wastes having divisions 2.1 (flammable gases) and 4.1 (flammable solids) and class 9 may be stored in the same cell with class 3 wastes because these wastes are compatible with each other. Spontaneously combustible wastes (division 4.2) are stored in small quantities, mainly inside labpack containers. Waste in Division 4.3 Dangerous When Wet will be stored in a special cabinet such as a "hazmat storage locker." This cabinet is designed to protect wastes from water in the event of sprinkler activation, fire hose or other problem involving water. This cabinet is equipped with a dry chemical suppression system. It will hold four 55-gallon drums and may be placed in the northernmost cell in the east container storage area or other convenient location. It has a containment capacity of 72 gallons. A sketch of the "hazmat storage locker" is provided as Exhibit II.B.1.-2. Organic peroxides (5.2) accepted by Triumvirate Environmental for management is considered safe to handle. These peroxides are stored in the unit in small amounts usually as part of labpacks. The Waste Analysis Plan details the acceptance of organic peroxides. Oxidizing waste materials (5.1) may be accepted by the facility. The 5.1 materials are generally stored separately from wastes containing a significant proportion of organic constituents. Oxidizers (5.1) and organic peroxides (5.2) are compatible with each other.

When solid (non-hazardous) wastes are stored in the container storage unit, they will be clearly marked so they will not be confused with or mixed with hazardous waste. There is no permanently designated separate storage area for solid wastes. When non-hazardous solid wastes are stored within the hazardous waste storage unit, their volumes will be counted toward the total capacity of permitted hazardous waste.

Currently Triumvirate Environmental does not store flammable wastes in the hazardous waste storage area. Flammables may be stored contingent upon NFPA upgrades. To minimize the potential for fire in the container storage unit, equipment, and tools used in this area are operated, constructed, and designed in a manner to prevent the generation of sparks. There are no electric motors used in this unit except for the ones used to drive fans and blowers, which also meet the standards for explosion-proof electrical equipment. Forklifts used inside the container storage unit are propelled by internal combustion engines that run on propane gas, which eliminates the possibility of sparks through the tail pipe. Tools used to open drums in this area are made of materials

that do not produce sparks upon impact or friction with hard or metal surfaces. Other equipment, such as drills, is air-driven. Smoking is not permitted in the hazardous waste management areas at the facility. Smoking is allowed outside of the hazardous waste management areas only.

The container storage unit is operated in a manner that minimizes the generation and concentration of flammable gases due to emissions from drums stored in it. Drums stored in this unit are kept closed except when opened for sampling, inspection or transfer of contents. The bung hole plugs of the drums to be sampled are initially loosened so that the plugs can be easily removed by hand. The plugs are not removed until the drum is actually sampled or inspected. Upon NFPA upgrades a hand-held explosion meter will be kept on-site to detect high concentrations of flammable vapors.

CONSOLIDATION AND STABILIZATION OPERATIONS

Triumvirate Environmental consolidates and stabilizes compatible hazardous wastes at the facility inside the north building. These consolidation and stabilization areas are identified in Figure I D 1. Re-packaging of non-reactive wastes may occur in the north building or the hazardous waste storage unit in the upper warehouse.

Consolidation operations include consolidation of wastes in labpack containers conducted in the north building. Wastes taken out of labpack inner containers [equal to or greater than 1 gallon] are poured or "bulked" into a larger container and shipped to other facilities for treatment or disposal. Wastes left in inner containers are placed in another container to complete another labpack to be shipped to other facilities for treatment or disposal. Labpack consolidation operations are conducted in the north building. Also, non-labpack waste streams that come in several small containers may be consolidated into larger containers. Partially full containers are filled to capacity to reduce the number of drums to be shipped off-site. The non-labpack consolidation of solid wastes into bulk containers are addressed in the solid waste permit. The consolidation operations, including labpacking, may occur anywhere in the north building.

The facility does not consolidate or store incompatible wastes in the consolidation areas. Procedures and systems are in use to prevent placement of incompatible wastes in the same container and are outlined in the Waste Analysis Plan. The next paragraphs describe the type of consolidation conducted at the facility and the measures taken to prevent commingling incompatible wastes and to avoid hazardous situations.

Consolidation in Bulk Transport Containers

Consolidation in bulk transport containers presents very little chance for commingling incompatible wastes because waste streams consolidated there do not have the components necessary for ignition or reaction. Examples of such wastes expected to be consolidated are wastewater treatment sludges from electroplating operations or from

chemical conversion coating of aluminum. These waste streams do not have ignitable properties. Wastes consolidated in bulk transport containers do not need to be tested for compatibility because of known compatibility. Solid or liquid wastes other than the ones described above may be consolidated in transport containers without testing for compatibility if the wastes belong to the same waste stream. The same applies to waste streams generated by a well-known and defined process similar to the ones mentioned above, which do not have ignitable properties or components that may react with other materials.

Consolidation of Labpack Containers

Wastes inside a labpack container consist of materials having the same hazard class or division. Waste in labpacks having division 2.1, 2.2, and 2.3 materials remain in the same inner containers as shipped in the labpack because the inner containers are cylinders, canisters, and cartridges containing pressurized gases or unpressurized gas remnants. Such materials are usually managed at the facility as waste in transfer, which means the labpack container is shipped off-site as received from the generator. Sometimes inner containers in the labpack are transferred to other labpack containers. The procedures described in the, Compatibility Test Method of the Waste Analysis Plan is followed for ignitable wastes in inner containers. Class 3 materials that are consolidated into another labpack do not need to be tested for compatibility.

Division 4.1 materials in a labpack may be re-packaged into a drum with other materials having the same DOT classification only if the materials are compatible by process code. Such wastes must also be checked by the procedures described in the Compatibility Test Method of the Waste Analysis Plan, before consolidation. The RGN for a given material may be determined from A METHOD FOR DETERMINING THE COMPATIBILITY OF HAZARDOUS WASTE, Report No. EPA - 600/2-80-076. Appendix 1 of the EPA report lists the RGNs for many materials. Materials may have many names and synonyms. If the information on the material does not show any of the names or synonyms that appear in the Appendix 1 list of the EPA report, chemical encyclopedias, dictionaries, or publications should be checked for other names or synonyms for the material that may appear in the list. The RGN can also be determined from Appendix 2 of the EPA report if the molecular functional group or chemical family that has been determined for the waste material can be classified within one of the group names listed in Appendix 2. Division 4.1 waste in labpacks inner containers that are placed into another labpack may be consolidated without having to follow the procedures for compatibility described above (RGN determination and compatibility test) as long as the other wastes belong to DOT division 4.1.

Inner containers in a labpack containing division 4.2 materials may be consolidated in bulk only with materials having the same name after completing the procedures described in the Compatibility Test Method of the Waste Analysis Plan. The consolidated materials should be overpacked, and each inner container should not exceed a volume of one-half gallon if the material is pyrophoric. The compatibility test

is not required if the inner containers are consolidated into another labpack with materials having the same DOT hazard classification. Consolidation of labpacks containing division 5.1 and 5.2 materials follows the same procedures used for division 4.1 and 4.2 materials, respectively, except that the volume restrictions that apply to pyrophorics in division 4.2 also apply to organic peroxides of types C and D in division 5.2. Consolidation of waste materials in labpacks consisting of division 6.1, class 8 and class 9 follow the procedures that have been established above for consolidation of class 3 materials.

Containers equal to or greater than 1 gallon are consolidated in batches consisting of materials that have the same process code. Waste bottles are unpacked and the inner containers are consolidated following procedures described in the previous paragraphs. Drums are unpacked in the north building. The inner containers are placed on tables that can be moved around the area. These containers are segregated by waste material type to prevent commingling of incompatible materials. Labpack waste materials are consolidated in the manner described in previous paragraphs. Emissions generated by this operation are insignificant and do not pose a threat to human health or the environment. Personnel conducting this operation wear protective equipment to prevent injury in the event of a chemical reaction. Because of the small amount of waste materials involved, an incident from this operation will not result in significant damage or harm, even in a worst-case scenario.

Drum Consolidation of Non-Labpack Wastes

As explained above, consolidation of non-labpack wastes is conducted for waste streams that arrive at the facility either in small containers or in partially full drums. These waste streams are bulked into other containers or transferred from one partially full drum to another until all the drums holding the waste stream are filled to capacity. Consolidations of wastes in drums that do not belong to the same waste stream are tested for compatibility before being commingled. To prevent the generation of sparks, the area inside the north building where consolidation of non-labpack wastes occurs is provided with explosion-proof lighting and electrical systems. Electric driven equipment uses explosion-proof motors, and tools are made of materials that do not produce sparks upon impact.

Consolidation of Corrosives

Alkaline liquids that arrive in drums at the facility are transferred to the consolidation areas to be tested and inspected before being pumped into a drum or tote. Prior to transfer of the waste from the drum, a sample taken from the drum is mixed with corrosive liquids stored in the consolidation container, and the mixture is observed for signs of a reaction. Test results that do not indicate a reaction between the contents in the drum and the contents in the container establish compatibility. The waste is then transferred from the drum into the container that was tested.

Consolidation of Non-Corrosives

Non-corrosive wastes are liquids contaminated with organic and/or inorganic constituents. These wastes are managed the same way corrosive liquids are managed in the consolidation areas. These wastes are pumped into bigger containers after the compatibility test results detect no reaction between the samples.

Solidification and Stabilization

Solidification refers to adding absorbents such as clement or fly ash to wastes containing free liquids. Stabilization refers to treating wastes containing metals (D004-D008, D010-D012) to render them non-hazardous. Containers equal to or greater than 55 gallons in size are the only wastes that would be stabilized and an example would be lead contaminated sand blast grit. Stabilization activities are outlined in the Waste Analysis Plan.

The stabilization operation, including solidification, will be performed in 55 gallon or greater containers inside the North Building. Stabilization consists of cement or fly ash being added to drums or roll-off containers. Upon commencement of the stabilization activities additional equipment may be purchased to help aid the process. Consolidation of similar wastes may occur prior to stabilization, and the compatibility test would be conducted for such consolidation, as described previously. An example would be comingling smaller containers of a known waste-stream such as pails of lead contaminated sandblast grit.

Table II.B.3.-1

Segregation Table for Hazardous Material

Class or Division	2.1	2.2	2.3 gas Zone A	2.3 gas Zone B	3	4.1	4.2	4.3	5.1	5.2	6.1 liquids PG I Zone A	8 liquids only	9 H.S.
Flammable gases..... 2.1			X	0							0	0	
Non-toxic, non-flammable gases..... 2.2													
Poisonous gas Zone A..... 2.3	X				X	X	X	X	X	X		X	
Poisonous gas Zone B..... 2.3	0				0	0	0	0	0	0		0	
Flammable liquids..... 3.			X	0					0		X		
Flammable solids..... 4.1			X	0							X	0	
Spontaneously combustible materials 4.2			X	0							X	X	
Dangerous when wet materials 4.3			X	0							X	0	
Oxidizers..... 5.1			X	0	0						X	0	
Organic peroxides 5.2			X	0							X	0	
Poisonous liquids PG 1 Zone A 6.1	0				X	X	X	X	X	X		X	
Corrosive liquids..... 8			X	0		0	X	0	0	0	X		
Hazardous substances 9													

Note: Codes X and 0 indicate prohibitions and restrictions as noted below.

- An "X" in the table indicates that these materials may not be loaded, transported, or stored together.

- An "0" indicates that these materials may not be transported or stored together unless separated in such a way that, in the event or leakage from packages under normal transportation conditions, the hazardous materials could not commingle. Regardless of the methods of separation employed, Class 8 (corrosive) liquid materials may not be loaded above Class 4 (flammable solid) materials or Class 5 (oxidizing) materials.

- Cyanides or cyanide mixtures must not be loaded or stored with acids or acidic materials. The reaction of cyanides with acids releases deadly hydrogen cyanide gas.

- When the 172.101 Table or 49 CFR 172.402 requires a package to bear a subsidiary hazard label, segregation appropriate to the subsidiary hazard must be applied when that segregation is more restrictive than that required by the primary hazard. However, hazardous materials of the same class may be stored together without regard to segregation required for any secondary hazard if the materials are not capable of reacting dangerously with each other and causing combustion or dangerous evolution of heat; evolution of flammable, poisonous, or asphyxiant gases; or formation of corrosive or unstable materials.

II.B.4 MANAGEMENT OF CONTAINERS

4. *Attach a description of the procedures used to comply with 264.171 (Condition of containers), 264.172 (Compatibility of waste with containers), and 264.173 (Management of containers)*

Triumvirate Environmental operates a hazardous waste transportation company that generally conducts waste collections for the facility. Drivers collecting the waste inspect containers for DOT specifications, leaks, and damages before loading the containers in the transportation vehicles. Containers that do not pass the inspection are not accepted for transport unless the container is overpacked or the waste is transferred to a container in good condition. Vehicles collecting the waste carry new, empty containers and overpacks to use, if the need arises.

Containers holding waste in storage at the facility comply with specifications in 49 CFR Part 173 Shippers-General Requirements for Shipments and Packaging. Dents and corroded spots are evaluated to determine whether the container can sustain handling at the facility and, for outbound shipments, whether the container will be able to withstand the effect of transportation to the point of destination. Significant damage at locations near seams, and bottom or top ends do not pass the inspection. Bung hole plugs must be tightened, and plug seals must be in good condition and in place. Head gaskets for open-head drums must be well-placed and in good condition, with the head ring closing bolt positioned downward. Drums having wet exterior walls or a wet floor around the bottom are inspected for pinholes that may be causing the drum to leak, the head rings and bung hole plugs are tightened, and the drum walls and floor are dried. If inspections conducted

after the drum walls and floor were dried find repeated wetting and a clear cause for the leak is not found, the drums in question must be overpacked or the contents transferred to drums in good condition.

Container types used in the container storage unit to store waste materials are made of different materials, sizes and shapes. Most generators ship their wastes in 55-gallon steel drums. Some customers ship their waste in plastic containers mainly because the waste is corrosive. Almost all waste sludges from electroplating operations are shipped to the facility in steel, fiberboard boxes and cubic yard bags. The facility stores consolidated corrosive liquids in drums or totes. The total volume of waste stored in a cell may not exceed the maximum storage volume permitted for the cell.

After containers have been inspected upon arrival, the containers are placed on pallets with no more than four drums (55-gallon and larger) per pallet. Drums on a pallet are arranged so that the top surface of the drums provides a reasonable horizontal and uniform resting plane for a second pallet to be placed upon it. Loaded pallets are inspected for head ring bolts to be positioned downward and for other protruding objects that may damage the pallets stacked upon them. Upper pallets are kept in a stable and level position

Pallets are placed between yellow lines painted on the floor of each cell. Pallets are positioned next to the end walls in a manner to prevent damage to the drums and allow visual inspection of the drums closest to the wall. Drums on a pallet are stored with hazardous waste labels faced toward the aisle. Photographs can be found in IB.3-8 through 13.

Drums in storage at the unit are closed at all times except when being sampled or when having contents transferred to another container. Heads and bung plugs shall be replaced and tightened immediately after the sampling and transfer operations are complete.

Drums transported by Triumvirate Environmental that are rejected by other facilities are returned to Triumvirate Environmental by the transportation vehicle that carried the drums to the rejecting facility. The rejected drums are transported to the Triumvirate Environmental facility to be managed as transfer facility waste until approval in accordance with the facility's permit or until returned to the generator or shipped to another facility. Until such time as the rejected drums are approved for management at the facility or shipped out, the rejected drums are kept together at a specified location in the unit that does not constitute an obstacle to traffic and operations conducted in the unit. Wastes in rejected drums that are not compatible with other wastes stored in the cell are separated in accordance with the segregation system described in section II.B.3. Rejected drums that are separated from other wastes in a cell because of compatibility reasons are placed on special pallets that have an integrated secondary containment system. Only wastes that are compatible with each other are placed on a pallet provided with self-containment. Self-contained pallets may not be stacked. The same procedures described above apply to transfer facility wastes placed temporarily in the container storage unit.

There is an open area next to the roll-over berm that provides secondary containment to the series of cells located along the south wall of the unit, which is identified in Figure I D 1 as the staging area. This is the area where the drums are tested and inspected before being placed in the storage cells. Drums that arrive late in the day when there is not enough time to complete the testing and inspection procedures are kept overnight in the staging area until the following day on pallets. The staging area and the storage cell located in the northwest corner of the unit share the same secondary containment system, which is capable of containing 3,719 gallons in excess of the volume required to contain the maximum storage volume allowed in the northwest cell. The excess containment volume for the cell where the staging area is located is equivalent to the secondary containment volume required for 675 55-gallon drums. The staging area does not have space for more than 100 55- gallon drums. The space in the staging area does not add to the permitted storage capacity of the facility.

More than half of the drums stored in the container storage unit usually are drums generators have shipped to the facility. The remaining drums contain wastes that have been consolidated at the facility. A drum containing waste that is not compatible with the container material is likely to develop a leak during transportation or at the generator site. Operators conducting inspections on arriving containers will have the waste transferred to another container if a leaking container is found, or if a container does not appear to be made of the appropriate material to hold the waste in question. Internal liners or other device to separate the waste from the container walls may be acceptable for wastes incompatible with the transport container material. Containers used to consolidate waste at the facility are usually new or reconditioned. When a used drum is utilized to consolidate waste, the container shall be empty of the waste previously held by the drum.

Handcarts, dollies, tools, and forklifts are made of appropriate materials. Necessary attachments to prevent personnel injury and damage to the containers, equipment, or structure are used. Floor surfaces upon which the forklifts operate are smooth to facilitate a safe operation. Personnel are trained with an emphasis on safe operation.

II.B.5 INSPECTION PROCEDURES

Attach a copy of the inspection procedures as required in 264.174 (Inspections) and 264.15 (General inspection requirements). [270.14(b)(13)]

The facility conducts weekly inspections in the container storage unit to prevent releases of hazardous waste and to protect human health. The inspection procedures are designed to discover, notify, and remediate physical and compliance problems with containers, markings, containment systems, fire fighting and spill control equipment, and any circumstances that may create a hazard. The objective of this program is to reveal and correct conditions that may lead to releases inside or outside the unit, injury to personnel, or threat to human health or the environment.

The weekly inspection requires inspection for cracks and gaps in the secondary containment. Such conditions should be sealed to maintain the integrity of the system. The floor in the area is inspected to detect waste from leaks and spills that should be collected and cleaned up, and debris or other obstacles that should be removed to allow safe passage of personnel and forklifts. Any finding of waste from leaks or spills must be investigated as to the source, and the problem condition must be corrected. The number and size of containers are reviewed to make sure the storage capacity permitted in the container storage area has not been exceeded. Containers are inspected for pinholes or signs of leakage, damage, appropriateness of material, and construction with respect to the type of waste contained. Bung and lid closures are confirmed. Markings are reviewed for completeness of the hazardous waste codes, storage date, and DOT description on the hazardous waste label and the facility barcode label. The hazardous waste codes and hazard class shown in the label are reviewed to make sure the waste is permitted at the facility and compatible with the other wastes in the cell. The containers are inspected to ensure that they are stable and that the label is facing the aisle. Fire extinguishers, spill control, first aid, and shower and eye-wash equipment are inspected to assure immediate operability. The seal on the emergency and safety cabinet indicates whether it has been opened. The seal is checked to make sure that it is intact. Examples of the weekly inspection forms are shown in Figures II B 4 and II B 5.

The weekly inspection ensures that the emergency and personnel safety equipment kept in the cabinet is complete and in good condition. The equipment stored in the cabinet is listed in the contingency plan. The facility may use easy-to-break seals on the doors of the cabinet to reduce weekly inspections to semi-annual inspections. A broken seal is an indication that equipment in the cabinet may have been removed. The facility has the option to use the seals described above and to inspect their integrity on a weekly basis. If seals are found broken, the weekly inspection log should be completed, and missing or faulty equipment should be replaced. A complete inspection of the cabinet should be conducted at least once every six months even when seals are found intact. A copy of the weekly cabinet inspection report in shown in Figure II B 5.

II.B.6./7. CLOSURE OF CONTAINER STORAGE UNIT

6. Attach a copy of the closure plan and where applicable the post-closure as required by 264.112, 264.118 and 264.178. [270. 13(b)(16)]

7. *Attach a copy of the most recent closure cost estimate 1270.14(b)(15)] and where applicable the post-closure cost estimate [270.14(b)(16)]*

A closure plan and a cost estimate for the container storage unit is contained in section II.K of this application, as required by the hazardous waste facility permit application form. Triumvirate Environmental is not required to have a post-closure plan because it is not a hazardous waste disposal facility. All information requested by items 6 and 7 above is provided in Section II.K of the application.

*****All Figures are located at the end of the permit application in the Maps and Figures Section.