

**APPENDIX D**  
**PROCESS INFORMATION**

## 1.0 INTRODUCTION

US Ecology Burlington, Inc. (USEB) operates a commercial waste management facility in Williston, Vermont, where both hazardous and non-hazardous wastes (“waste” or “wastes”) are stored in containers. USEB does not manage waste in surface impoundments, waste piles, landfills, drip pads or miscellaneous units. USEB also does not operate an incinerator. This section describes the waste management areas of the USEB facility, and how wastes are managed at USEB.

All wastes received at the USEB facility are approved and accepted in accordance with the Waste Analysis Plan (**Appendix C**). The wastes that USEB is permitted to accept are listed in the Part A permit application (i.e., EPA Form 8700-23) included in **Appendix A**. After being accepted, all containerized wastes are placed in secondary containment cells (storage cells) located within the USEB facility building.

Some containerized wastes are removed from storage and bulked into roll-off containers (solids) or tank trucks (liquids) for shipment off-site. Other containerized wastes are shipped off-site in the same containers they were received in.

## 2.0 GENERAL CONTAINER STORAGE AREA INFORMATION

### 2.1 Facility Overview

The USEB facility consists of one building that includes offices, a laboratory, 15 designated hazardous waste storage cells, a secure storage locker for sensitive wastes, an area designated for storing materials for facility operations (e.g. supplies) and RCRA empty drums for recycling and reconditioning.

Sensitive hazardous and non-hazardous wastes are stored in a self-contained storage unit maintained in storage cell A-1. The sensitive waste storage unit is designed with an internal secondary containment system that meets 40 CFR 264.175 requirements (**Attachment A**). A cabinet designed for storing reactive waste is maintained in storage cell D-6 (**Attachment B**). Section B, Figure B-5 identifies the locations of the sensitive waste storage unit and reactivities storage cabinet within the USEB facility.

Non-hazardous wastes are stored in appropriate storage cells.

Storage cell A-1 is used primarily as a temporary staging and processing area for inbound and outbound containerized wastes, a lab pack processing area, a staging area for bulking operations, and on rare occasions an area for off-loading bulk transport vehicles into containers.

Containers are moved from cell A-1 to an appropriate storage cell or an outbound vehicle, or the contents of the containers are bulked (e.g. into a roll-off, tank truck). While in storage cell A-1, wastes are managed in accordance with US DOT compatibility requirements (**Attachment C**).

## 2.2 Control of Run-on and Run-off

Most of the wastes are stored inside the USEB building. Some wastes managed by USEB are consolidated into bulk containers (e.g. roll-off container) or transport vehicles which are kept closed/tarped except when waste is being added to them.

Transport vehicles and roll-off containers used for bulking operations are located outside of the USEB building (in the vicinity of the loading dock) within secondary containment structures.

USEB monitors the accumulation of precipitation and run-on into the secondary containment structure. Accumulated run-on and precipitation are periodically removed and shipped off-site to a proper facility. If USEB has reason to believe that collected water is contaminated with hazardous constituents, the water is analyzed/tested for the “RCRA 8” (toxicity characteristic) metals, volatiles, pH and any other likely potentially hazardous waste characteristic or contaminant. In addition, a representative sample is collected and analyzed on a semi-annual basis, to verify that a release of hazardous material has not occurred. Documentation of this analysis is included in the facility operating record.

## 2.3 Description of Containers

USEB utilizes containers that meet U.S. DOT specifications for all hazardous materials as defined by 49 CFR 171 and comply with the specifications of 40 CFR 264, Subpart I. In addition, USEB verifies that containers received from off-site meet U.S. DOT standards. All containers are compatible with waste stored in them.

## 2.4 Description of Container Storage Area

The indoor storage area for containerized waste is 100-feet wide by 70-feet long (**Appendix B, Figure B-2**). This area is divided into 14 storage cells designated as B-1, B-2, B-3, B-4, B-5, B-6, C-1, C-2, D-1, D-2, D-3, D-4, D-5, D-6. Several cells are fitted with roller conveyors that serve to facilitate container movement and protect stored containers from contacting spilled liquids.

All indoor storage cells for containerized waste are constructed of concrete that is no less than 12-inches thick at any one point and surrounded by containment curbing at a height of 6 inches. The concrete storage cells are inspected daily and maintained to ensure they are kept free of cracks and gaps, and sufficiently impervious to contain leaks and spills until such time that any leaked/spilled material is detected and removed. Only compatible wastes are stored within each individual storage cell.

While at the USEB facility, all transport vehicles holding waste are located within secondary containment structures while being loaded or unloaded, and all transport vehicles holding “ignitable” or “reactive” waste are located a minimum of 50’ from all property lines.

## 2.5 Containment System and Storage Volume

Table D-1 details the capacity of each storage cell as follows. For each storage cell (column 1), the length of the cell (column 2) is multiplied by the cell width (column 3) and depth (column 4) to determine the gross volume of the cell in cubic feet (column 5). Column 6 identifies the number of 10-foot roller sections in each cell, and column 7 identifies the total volume displaced by the rollers in each cell by multiplying the number of roller sections by the 1.72 ft<sup>3</sup> displacement volume of a roller section. Column 8 identifies the total number of 55-gallon drums that can physically fit on the floor area of each storage cell, while column 9 identifies the calculated displacement volume of these drums (Note: 55-gallon drums were used for calculation purposes). Column 10 identifies the maximum number of temporary ramps (these ramps are used to move containers from cell A-1 to other storage cells). Column 11 identifies the total net containment volume. Columns 12 and 13 identify the maximum number of 55-gallon drum equivalents and the total volume of waste (i.e., drum equivalents multiplied by 55) that can be stored in each cell. Containers are presumed to be filled with liquid waste for the purposes of determining containment and storage capacity (i.e., a 55-gallon drum is presumed to contain 55-gallons of liquid waste).

## 2.6 Lab Pack Storage

Only lab pack containers are stored in cells D-3 and D-6. Lab packs are outer containers holding chemically similar or compatible inner containers, packaged with cushioning absorbent material. Lab packs will not contain free liquids and can be excluded from secondary containment volume requirements according to 40CFR264.175(b)(3)



## 3.0 CONTAINER MANAGEMENT PRACTICES

### 3.1 Container Handling Practices

Any container holding waste must not be opened, handled, or stored in a manner that may rupture the container or cause it to leak.

#### 3.1.1 Closed Containers

Any container holding waste will be kept closed during storage, except when it is necessary to add or remove waste.

#### 3.1.2 Conditions of Containers

If a container holding waste is not in good condition (e.g., severe rusting, apparent structural defects) or if it begins to leak, USEB will transfer the waste from this container to a container that is in good condition, or overpack the container in a salvage drum.

#### 3.1.3 Transporting Containers

Containers are moved within the USEB facility utilizing equipment such as forklifts, Bobcats equipped with drum tipping attachments, drum dollies, and lab carts. Employees are trained in the proper use of this equipment and techniques for moving containers to ensure that the containers do not rupture or leak.

#### 3.1.4 Aisle Spacing

To accommodate inspections and the unobstructed movement of material handling and emergency response equipment, aisle space of at least two feet is maintained between rows of containers. Aisle space may be greater than two feet.

#### 3.1.5 Container Stacking

Containers holding waste may be stacked no greater than two high and, if stacked, must be managed as follows:

- (a) 55-gallon containers may be stacked on top of a cluster of four 55-gallon containers that are of nearly equal height and of sufficient structural integrity to support the containers on the second tier provided the containers on the second tier are placed on a pallet (i.e., that measures at least 42''x42'') and secured with banding or strapping;
- (b) Containers that are smaller than 55-gallons may be stacked directly on top of larger containers (i.e., without being placed on a pallet or secured with banding or strapping), and 5-gallon pails may be stacked directly on top of other 5-gallon pails;

- (c) An Intermediate Bulk Container (i.e., tote, cubic yard box) may be stacked directly on top of another Intermediate Bulk Container or multiple 55-gallon containers provided the Intermediate Bulk Container on the second tier is fully supported; and
- (d) Two 85- or 95-gallon Overpack containers or Salvage Drums may be stacked on top of a cluster of four 55-gallon containers that are of nearly equal height and of sufficient structural integrity to support the containers on the second tier provided that the containers on the second tier are placed on a pallet (i.e., that measures at least 42''x42'') and secured with banding or strapping.

### 3.2 Transferring waste from bulk transportation vehicles to containers

On rare occasions, USEB may off-load waste from bulk transport vehicles to U.S. DOT approved containers for storage in the USEB facility. Bulk transport vehicles will be located within concrete secondary containment structures when waste is being off-loaded. Any pumps, fittings, hoses, and hose gaskets used in the off-loading process will be constructed of material compatible with the material being unloaded. To prevent overfilling containers and to ensure that spills do not occur during off-loading operations, USEB personnel will visually monitor all waste transfer operations until completion. When flammable materials are being transferred to containers, the bulk transportation vehicle, transfer equipment and receiving containers will be kept grounded.

### 3.3 Transferring waste from containers to bulk transportation vehicles

#### 3.3.1 Bulking liquids (i.e., loading tanker trucks)

Prior to transferring and consolidating liquid waste from containers into bulk transportation vehicles (i.e., tankers), all waste to be consolidated will be tested for compatibility according to the compatibility testing procedure included in the Waste Analysis Plan (**Appendix C**). Bulk transport vehicles will be located within the concrete secondary containment structures throughout loading operations. The transportation vehicles, pumps, fittings, hoses, and hose gaskets will be constructed of material compatible with the material being transferred. Bulk liquid transport vehicles will be equipped with external gauges to allow visual monitoring of the liquid level within the vehicle tank. When flammable materials are being loaded, the bulk transportation vehicle, transfer equipment and receiving containers will be kept grounded throughout loading operations.

#### 3.3.2 Bulking solids (i.e. loading roll-off containers, dump trucks and trailers)

Roll-off containers, dump trucks, dump trailers and any other bulk solids transportation container or vehicle will be located within concrete secondary containment structures throughout loading operations. Bulk containers will be

equipped with liners that are compatible with any waste material placed in them. Prior to bulking containers of waste into a bulk solids transportation container or vehicle, each container to be bulked will be weighed, and the gross weight of all bulked wastes will be tallied to ensure that U.S. DOT weight restrictions are met by the fully loaded bulk container or vehicle. Containers of waste to be bulked are typically moved using equipment such as forklifts and Bobcats equipped with drum tippers. After being emptied, containers are righted over the bulk container before being brought back to the loading dock. USEB personnel will visually monitor bulking operations to ensure that the bulk container or vehicle is not overfilled.

### 3.4 Lab packs

Lab packs are stored primarily in cells D-3 and D-6 as well as in the lab pack processing area of A-1, along with other compatible wastes. Lab packs are essentially “double-contained” by design (i.e., a lab pack consists of smaller containers stored within a larger container) and, therefore, further segregation is not required.

Any de-packing or repackaging of lab pack containers may only occur within permitted storage cells. Any packing material removed from lab pack containers is handled in accordance with applicable regulations. Compatible lab pack wastes may be consolidated into a larger container.

### 3.5 Inspection of Container Storage Areas

USEB conducts daily inspections of container storage areas for the presence of leaking containers and the deterioration of containers and the containment system caused by corrosion or other factors. Inspection logs are maintained as part of the facility operating record. The container storage area inspection procedures, including the USEB inspection checklists, are included in the Procedures to Prevent Hazards section of this permit (**Appendix F**).

### 3.6 Spills and Leaks

Spilled or leaked waste will be removed immediately upon detection by pumping or use of absorbents. A list of spill control equipment is included in the Contingency Plan (**Appendix G**).

### 3.7 Compatibility

Incompatible wastes/materials will not be placed in the same container or storage cell. A compatibility chart is included in **Attachment C**; examples of incompatibilities are included in **Attachment D**.

Containers of incompatible wastes are separated by concrete berms or the use of other secondary containment devices.



Wastes will not be placed in unwashed containers or tanks that previously held an incompatible waste or material. All wastes are placed in containers that are constructed of materials compatible with the wastes to be stored in them.

### 3.8 Container Tracking System

#### 3.8.1 Container Marking and Labeling

Containerized wastes stored within the permitted container storage areas will have the following information either marked on them or affixed to them:

- A completed hazardous waste, universal waste, used oil or a non-hazardous waste label, as appropriate; and
- An internal tracking label

Lab packs will have a packing list affixed to the outside container that identifies the contents of the lab pack. Bulk waste received and stored in the outdoor containment pad will have an internal tracking label affixed to the container. All containers of waste shipped off-site are marked and labeled in accordance with applicable U.S. DOT regulations.

#### 3.8.2 Electronic Tracking System

All containers of waste received at the USEB facility are tracked using an electronic tracking system from the time of receipt until shipment off-site. If the electronic system is inoperable, waste containers will be tracked manually.

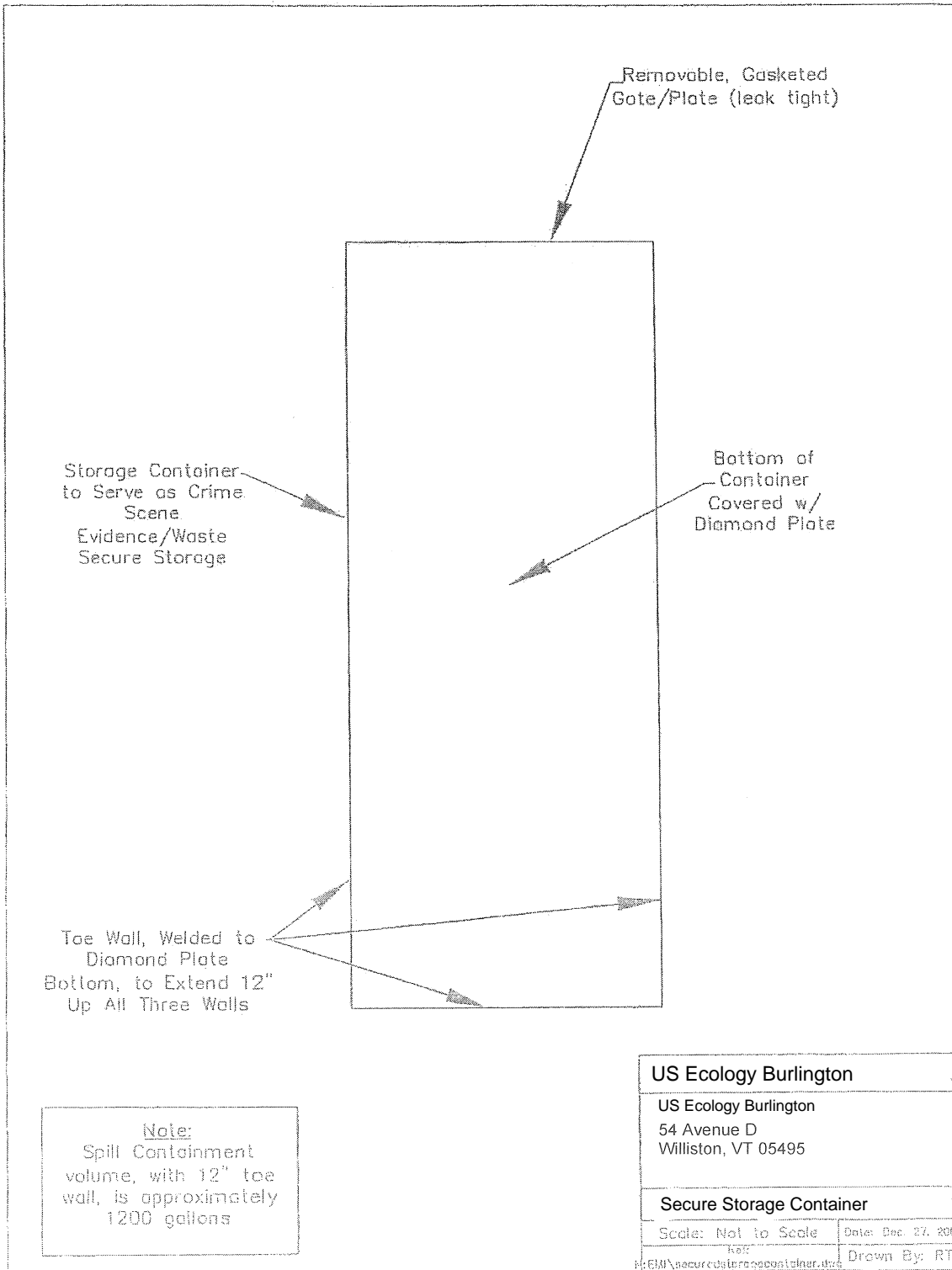
#### 3.8.3 Container Information Recorded in the Facility Operating Record

The following information is recorded in the facility operating record for each container of waste:

- USEB-assigned container number
- Waste Information Profile (WIP) number
- Uniform hazardous waste manifest number (incoming manifest)
- If applicable, hazardous waste codes (all applicable codes may not be included on all container tracking documents; all applicable codes are included on WIPs)
- Date of Receipt at the USEB facility
- Date of sampling conducted according to the Waste Analysis Plan
- Type of container
- Size, volume or weight of container
- Free liquids present?
- Storage location (i.e, storage cell)

**APPENDIX D: ATTACHMENT A**

**Sensitive Waste Secure Storage**



**APPENDIX D: ATTACHMENT B**

**Reactive Storage Cabinet**

US Ecology Burlington

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# APPENDIX D: ATTACHMENT C HAZARDOUS MATERIALS LOAD AND SEGREGATION CHART

CLASS	PLACARDS	CLASS OR DIVISION	PLACARD WEIGHT	NOTES	1.1	1.2	1.3	1.4	1.5	1.6	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	7	8 LIQUIDS			
					*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
CLASS 1		1.1	ANY QUANTITY	A	*	*	*	*	*	*	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
					1.2	*	*	*	*	*	*	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
					1.3	*	*	*	*	*	*	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
					1.4	1,001 lbs.	*	*	*	*	*	*	0	0	0	0	0	0	0	0	0	0	0	0	0	0
					1.5	1,001 lbs.	A	*	*	*	*	*	*	X	X	X	X	X	X	X	X	X	X	X	X	X
		1.6	1,001 lbs.		*	*	*	*	*																	
CLASS 2		2.1	1,001 lbs.		X	X	O	X					X	O							O	O				
		2.2	1,001 lbs.	B	X				X																	
		2.3	ANY QUANTITY		X	X	O	X			X				X	X	X	X	X	X			X			
		2.3	ANY QUANTITY		X	X	O	X			O				O	O	O	O	O	O			O			
CLASS 3		3	1,001 lbs.		X	X	O	X					X	O						O		X				
CLASS 4		4.1	1,001 lbs.		X				X				X	O							X		O			
		4.2	1,001 lbs.		X	X	O	X					X	O								X		X		
		4.3	ANY QUANTITY		X	X			X				X	O							X		O			
CLASS 5		5.1	1,001 lbs.	A	X	X			X				X	O	O						X		O			
		5.2	1,001 lbs.	F	X	X			X				X	O							X		O			
CLASS 6		6.1	ANY QUANTITY	E H	X	X	O	X			O				X	X	X	X	X				X			
CLASS 7		7	ANY QUANTITY (yellow III label)		X				X				O													
CLASS 8		8	1,001 lbs.		X	X	O	X					X	O		O	X	O	O	O	X					

**§177.848(e) INSTRUCTIONS FOR USING THE SEGREGATION TABLE FOR HAZARDOUS MATERIALS ARE AS FOLLOWS:**

CLASS 3	COMBUSTIBLE LIQUIDS		IN BULK	C G E H C D	(1) The absence of any hazard class or division or a blank space in the Table indicates that no restrictions apply. (2) The letter "X" in the Table indicates that these materials may not be loaded, transported, or stored together in the same transport vehicle or storage facility during the course of transportation. (3) The letter "O" in the Table indicates that these materials may not be loaded, transported, or stored together in the same transport vehicle or storage facility during the course of transportation unless separated in a manner that, in the event of leakage from packages under conditions normally incident to transportation, commingling of hazardous materials would not occur. Notwithstanding the methods of separation employed, Class B (corrosive) liquids may not be loaded above or adjacent to Class 4 (flammable) or Class 5 (oxidizing) materials; except that shippers may load truckload shipments of such materials together when it is known that the mixture of contents would not cause a fire or a dangerous evolution of heat or gas. (4) The "*" in the Table indicates that segregation among different Class 1 (explosive) materials is governed by the compatibility table in paragraph (f) of this section. (5) The note "A" in the third column of the table means that, notwithstanding the requirements of the letter "X", ammonium nitrate (UN 1942) and ammonium nitrate fertilizer may be loaded or stored with Division 1.1 (explosive) or Division 1.5 materials, unless otherwise prohibited by §177.835(c). (6) When the §172.101 Table or §172.402 of this subchapter 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 stowed 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.
CLASS 6	OTHER THAN POISONOUS LIQUIDS PG I ZONE A		1,001 lbs.	E H	
CLASS 9	MISCELLANEOUS		1,001 lbs.	C D	

**NOTES**

- A. See instructions §177.848(e)(5).
- B. For domestic transportation of oxygen, compressed or oxygen, refrigerated liquid, the oxygen placard may be used in place of NON-FLAMMABLE GAS placard (§172.504(f)(7)).
- C. No applicable segregation restrictions in §177.848.
- D. For domestic transportation, a Class 9 placard is not required. A bulk packaging containing a Class 9 material must be marked with the identification number displayed on a Class 9 placard, or an orange panel, or a white square-on-point display configuration (§172.504(i)(9)).

- E. Packages with POISON or POISON INHALATION HAZARD labels, or a POISON label displaying "PG III" or "PG III" marked next to a POISON label may not be transported with foodstuffs, feed or any other edible material, intended for humans or animals. For exceptions see §177.841(e).
- F. Placard any quantity of a 5.2, ORGANIC PEROXIDE, TYPE B, LIQUID OR SOLID, TEMPERATURE CONTROLLED.
- G. No placard is required for combustible liquids in non-bulk packages (119 gal. or less).
- H. See §177.848(c) for restrictions.

**§177.848(c) ADDITIONAL SEGREGATION REQUIREMENTS**

In addition to the provisions of paragraph (d) of this section and except as provided in §173.12(e) of this subchapter, cyanides, cyanide mixtures or solutions may not be stored, loaded and transported with acids if a mixture of the materials would generate hydrogen cyanide; Division 4.2 materials may not be stored, loaded and transported with Class 8 liquids; and Division 6.1 Packing Group 1, Hazard Zone A material may not be stored, loaded and transported with Class 3 material, Class 8 liquids, and Division 4.1, 4.2, 4.3, 5.1 or 5.2 materials.

See §173.12(e) for segregation exceptions for waste materials.

## APPENDIX D: ATTACHMENT D

### Examples of Potentially Incompatible Waste

Many hazardous wastes, when mixed with other waste or materials at a hazardous waste facility, can produce effects which are harmful to human health and the environment, such as (1) heat or pressure, (2) fire or explosion, (3) violent reaction, (4) toxic dusts, mists, fumes, or gases, or (5) flammable fumes or gases.

Below are examples of potentially incompatible wastes, waste components, and materials, along with the harmful consequences which result from mixing materials in one group with materials in another group. The list is intended as a guide to owners or operators of treatment, storage, and disposal facilities, and to enforcement and permit granting officials, to indicate the need for special precautions when managing these potentially incompatible waste materials or components.

This list is not intended to be exhaustive. An owner or operator must, as the regulations require, adequately analyze his wastes so that he can avoid creating uncontrolled substances or reactions of the type listed below, whether they are listed below or not.

It is possible for potentially incompatible wastes to be mixed in a way that precludes a reaction (e.g., adding acid to water rather than water to acid) or that neutralizes them (e.g., a strong acid mixed with a strong base), or that controls substances produced (e.g., by generating flammable gases in a closed tank equipped so that ignition cannot occur, and burning the gases in an incinerator).

In the lists below, the mixing of a Group A material with a Group B material may have the potential consequence as noted.

#### **Group 1-A**

Acetylene sludge

Alkaline caustic liquids

Alkaline cleaner

Alkaline corrosive liquids

Alkaline corrosive battery fluid

Caustic wastewater

Lime sludge and other corrosive alkalies

Lime wastewater

Lime and water

Spent caustic

**Group 1–B**

Acid sludge

Acid and water

Battery acid

Chemical cleaners

Electrolyte, acid

Etching acid liquid or solvent

Pickling liquor and other corrosive acids

Spent acid

Spent mixed acid

Spent sulfuric acid

Potential consequences: Heat generation; violent reaction.

**Group 2–A**

Aluminum

Beryllium

Calcium

Lithium

Magnesium

Potassium

Sodium

Zinc powder

Other reactive metals and metal hydrides

**Group 2–B**

Any waste in Group 1–A or

1–B

Potential consequences: Fire or explosion; generation of flammable hydrogen gas.

**Group 3–A**

Alcohols

Water

**Group 3–B**

Any concentrated waste in Groups 1–A or 1–B

Calcium

Lithium

Metal hydrides

Potassium

SO<sub>2</sub>Cl<sub>2</sub>, SOCl<sub>2</sub>, PCl<sub>3</sub>, CH<sub>3</sub>SiCl<sub>3</sub>

Other water-reactive waste

Potential consequences: Fire, explosion, or heat generation; generation of flammable or toxic gases.

**Group 4–A**

Alcohols

Aldehydes

Halogenated hydrocarbons

Nitrated hydrocarbons

Unsaturated hydrocarbons

Other reactive organic compounds and solvents

**Group 4–B**

Concentrated Group 1–A or 1–B wastes

Group 2–A wastes

Potential consequences: Fire, explosion, or violent reaction.

**Group 5–A**

Spent cyanide and sulfide solutions

**Group 5–B**

Group 1–B wastes

Potential consequences: Generation of toxic hydrogen cyanide or hydrogen sulfide gas.

**Group 6–A**

Chlorates

Chlorine

Chlorites

Chromic acid

Hypochlorites

Nitrates

Nitric acid, fuming

Perchlorates

Permanganates

Peroxides

Other strong oxidizers

**Group 6–B**

Acetic acid and other organic acids

Concentrated mineral acids

Group 2–A wastes

Group 4–A wastes

Other flammable and combustible wastes

Potential consequences: Fire, explosion, or violent reaction.