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Rulemaking Hearing Rule(s) Filing Form

Rulemaking Hearing Rules are rules filed after and as a result of a rulemaking hearing. TCA Section 4-5-205

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Revision Type (check all that apply):

___ Amendment
X New
X Repeal

Rule(s) Revised (**ALL** chapters and rules contained in filing must be listed here. If needed, copy and paste additional tables to accommodate multiple chapters. Please enter only **ONE** Rule Number/Rule Title per row)

Chapter Number	**Chapter Title**
0400-12-01	Hazardous Waste Management
Rule Number	**Rule Title**
0400-12-01-.01	Hazardous Waste Management System: General
0400-12-01-.02	Identification and Listing of Hazardous Waste
0400-12-01-.03	Notification Requirements and Standards Applicable to Generators of Hazardous Wastes
0400-12-01-.04	Requirements Applicable to Transfer Facilities and Permit Requirements and Standards Applicable to Transporters of Hazardous Waste
0400-12-01-.05	Interim Status Standards for Owners and Operators of Existing Hazardous Waste Treatment, Storage, and Disposal Facilities

Chapter Number	**Chapter Title**
1200-01-11	Hazardous Waste Management Regulations
Rule Number	**Rule Title**
1200-01-11-.01	Hazardous Waste Management System: General
1200-01-11-.02	Identification and Listing of Hazardous Waste
1200-01-11-.03	Notification Requirements and Standards Applicable to Generators of Hazardous Wastes
1200-01-11-.04	Requirements Applicable to Transfer Facilities and Permit Requirements and Standards Applicable to Transporters of Hazardous Waste
1200-01-11-.05	Interim Status Standards for Owners and Operators of Existing Hazardous Waste Treatment, Storage, and Disposal Facilities

(Place substance of rules and other info here. Statutory authority must be given for each rule change. For information on formatting rules go to http://tn.gov/sos/rules/1360/1360.htm)

Repeals

Chapter 1200-01-11
Hazardous Waste Management Regulations

Rules 1200-01-11-.01 Hazardous Waste Management System: General, 1200-01-11-.02 Identification and Listing of Hazardous Waste, 1200-01-11-.03 Notification Requirements and Standards Applicable to Generators of Hazardous Wastes, 1200-01-11-.04 Requirements Applicable to Transfer Facilities and Permit Requirements and Rule 1200-01-11-.05 Interim Status Standards for Owners and Operators of Existing Hazardous Waste Treatment, Storage, and Disposal Facilities are repealed.

Authority: T.C.A. §§ 68-212-101 et seq. and 4-5-201 et seq.

New Rules

Chapter 0400-12-01
Hazardous Waste Management

0400-12-01-.01 Hazardous Waste Management System: General

(1) General

(a) Purpose, Scope, and Applicability

This rule provides definitions of terms, general standards and procedures, and overview information applicable to these rules.

(b) Use of Number and Gender

As used in these rules:

1. Words in the masculine gender also include the feminine and neuter genders; and

2. Words in the singular include the plural; and

3. Words in the plural include the singular.

(c) Rule Structure

These rules are organized, numbered, and referenced according to the following outline form:

(1) paragraph

(a) subparagraph

1. part

(i) subpart

(I) item

I. subitem

A. section

(A) subsection

(2) Definitions and References

(a) Definitions

When used in Rules 0400-12-01-.01 through .12, the following terms have the meanings given below unless otherwise specified:

"Above ground tank" means a device meeting the definition of "tank" in this subparagraph and that is situated in such a way that the entire surface area of the tank is completely above the plane of the adjacent surrounding surface and the entire surface area of the tank (including the tank bottom) is able to be visually inspected.

"Act" means the Tennessee Hazardous Waste Management Act, as amended, Tennessee Code Annotated (T.C.A.) §§ 68-212-101 et seq.

"Active life" of a facility means the period from the initial receipt of hazardous waste at the facility until the Commissioner receives certification of final closure.

"Active portion" means that portion of a facility where treatment, storage, or disposal operations are being or have been conducted after the date one or more of the hazardous wastes handled by the facility first became subject to regulation under rules promulgated under the Act and which is not a closed portion. (See also "closed portion" and "inactive portion".)

"Administrator" means the Administrator of the Environmental Protection Agency, or his designee.

"Application" means the EPA standards national forms for applying for a permit, including any additions, revisions or modifications to the forms; or forms approved by EPA for use in approved States, including any approved modifications or revisions. Application also includes the information required by the Commissioner under subparagraph (5)(a) through paragraph (6) of Rule 0400-12-01-.07 (contents of Part B of the hazardous waste management permit application).

"Approved program or approved State" means a State which has been approved or authorized by EPA under 40 CFR Part 271.

"Ancillary equipment" means any device including, but not limited to, such devices as piping, fittings, flanges, valves, and pumps, that is used to distribute, meter, or control the flow of hazardous waste from its point of generation to a storage or treatment tank(s), between hazardous waste storage and treatment tanks to a point of disposal onsite, or to a point of shipment for disposal off-site.

"Aquifer" means a geologic formation, group of formations, or part of a formation capable of yielding a significant amount of ground water to wells or springs.

"ASTM" means the American Society for Testing and Materials.

"Authorized representative" means the person responsible for the overall operation of a facility or an operational unit (i.e., part of a facility), e.g., the plant manager, superintendent or person of equivalent responsibility.

"Battery" means a device consisting of one or more electrically connected electrochemical cells which is designed to receive, store, and deliver electric energy. An electrochemical cell is a system consisting of an anode, cathode, and an electrolyte, plus such connections (electrical and mechanical) as may be needed to allow the cell to deliver or receive electrical energy. The term battery also includes an intact, unbroken battery from which the electrolyte has been removed.

"Board" means the Tennessee Solid Waste Disposal Control Board established by T.C.A. §68-211-111.

"Boiler" means an enclosed device using controlled flame combustion and having the following characteristics:

1. (i) The unit must have physical provisions for recovering and exporting thermal energy in the form of steam, heated fluids, or heated gases; and

   (ii) The unit's combustion chamber and primary energy recovery section(s) must be of integral design. To be of integral design, the combustion chamber and the primary energy recovery section(s) (such as waterwalls and superheaters) must be physically formed into one manufactured or assembled unit. A unit in which the combustion chamber and the primary energy recovery section(s) are joined only by ducts or connections carrying flue gas is not integrally designed; however, secondary energy recovery equipment (such as economizers or air preheaters) need not be physically formed into the same unit as the combustion chamber and the primary energy recovery section. The following units are not precluded from being boilers solely because they are not of integral design: process heaters (units that transfer energy directly to a process stream), and fluidized bed combustion units; and

   (iii) While in operation, the unit must maintain a thermal energy recovery efficiency of at least 60 percent, calculated in terms of the recovered energy compared with the thermal value of the fuel; and

   (iv) The unit must export and utilize at least 75 percent of the recovered energy, calculated on an annual basis. In this calculation, no credit shall be given for recovered heat used internally in the same unit (examples of internal use are the preheating of fuel or combustion air, and the driving of induced or forced draft fans or feedwater pumps); or

2. The unit is one which the Commissioner has determined, on a case-by-case basis, to be a boiler, after considering the standards in subparagraph (5)(a) of this rule.

"Carbon regeneration unit" means any enclosed thermal treatment device used to regenerate spent activated carbon.

"Cathode ray tube" or CRT means a vacuum tube, composed primarily of glass, which is the visual or video display component of an electronic device. A used, intact CRT means a CRT whose vacuum has not been released. A used, broken CRT means glass removed from its housing or casing whose vacuum has been released.

"Certification" means a statement of professional opinion based upon knowledge and belief.

"CFR" means the Code of Federal Regulations.

"Closed portion" means that portion of a facility which an owner or operator has closed in accordance with the approved facility closure plan and all applicable closure requirements. (See also "active portion" and "inactive portion".)

"Commissioner" means the Commissioner of the Tennessee Department of Environment and Conservation (formerly the Tennessee Department of Health and Environment) or his authorized representative.

"Component" means any constituent part of a unit or any group of constituent parts of a unit assembled to perform a specific function (e.g., a pump seal, pump, kiln liner, kiln thermocouple) when used in Rule 0400-12-01-.07 and, when used otherwise in these rules, means either the tank or ancillary equipment of a tank system.

"Confined aquifer" means an aquifer bounded above and below by impermeable beds or by beds of distinctly lower permeability than that of the aquifer itself; an aquifer containing confined ground water.

"Conglomerate Waste Stream" means the mixture of individual wastewater streams at the point of entry into either the headworks of an on-site wastewater treatment plant or the sewer system that leads to a publicly owned treatment works (POTW).

"Container" means any portable device in which a material is stored, transported, treated, disposed of, or otherwise handled.

"Containment building" means a hazardous waste management unit that is used to store or treat hazardous waste under the provisions of Rule 0400-12-01-.06(33) and 0400-12-01-.05(30).

"Contingency plan" means a document setting out an organized, planned, and coordinated course of action to be followed in case of a fire, explosion, or release of hazardous waste or hazardous waste constituents which could threaten public health or the environment.

"Corrective action management unit" or "CAMU" means an area within a facility that is used only for managing remediation wastes for implementing corrective action or cleanup at the facility.

"Corrosion expert" means a person who, by reason of his knowledge of the physical sciences and the principles of engineering and mathematics, acquired by a professional education and related practical experience, is qualified to engage in the practice of corrosion control on buried or submerged metal piping systems and metal tanks. Such a person must be certified as being qualified by the National Association of Corrosion Engineers (NACE) or be a registered professional engineer who has certification or licensing that includes education and experience in corrosion control on buried or submerged metal piping systems and metal tanks.

"CRT collector" means a person who receives used, intact CRTs for recycling, repair, resale, or donation.

"CRT glass manufacturer" means an operation or part of an operation that uses a furnace to manufacture CRT glass.

"CRT processing" means conducting all of the following activities:

1. Receiving broken or intact CRTs; and

2. Intentionally breaking intact CRTs or further breaking or separating broken CRTs; and

3. Sorting or otherwise managing glass removed from CRT monitors.

"CWA" means the Clean Water Act (formerly referred to as the Federal Water Pollution Act or Federal Water Pollution Control Act amendments of 1972) Pub. L. 92-500, as amended by Publ. L. 92-217 and Publ. L. 95-576; 33 U.S. C. 1251 et seq.

"Department" means the Tennessee Department of Environment and Conservation (formerly Tennessee Department of Health and Environment).

"Designated facility" means:

1. A hazardous waste treatment, storage, or disposal facility which:

   (i) Has received a permit (or interim status) in accordance with the requirements of Rule 0400-12-01-.07; or

   (ii) Has received a permit (or interim status) from a State authorized in accordance with 40 CFR 271; or

(iii) Is regulated under subpart (1)(f)3(ii) of Rule 0400-12-01-.02 or paragraph (6) of Rule 0400-12-01-.09; and

(iv) Has been designated on the manifest by the generator pursuant to subparagraph (3)(a) of Rule 0400-12-01-.03.

2. Designated facility also means a generator site designated on the manifest to receive its waste as a return shipment from a facility that has rejected the waste in accordance with part (5)(c)6 of Rule 0400-12-01-.05 or Rule 0400-12-01-.06.

3. If a waste is destined to a facility in an authorized State which has not yet obtained authorization to regulate that particular waste as hazardous, then the designated facility must be a facility allowed by the receiving State to accept such waste.

"Destination facility" means a facility that treats, disposes of, or recycles a particular category of universal waste, except those management activities described in parts (2)(d)1 and 3 and (3)(d)1 and 3 of Rule 0400-12-01-.12. A facility at which a particular category of universal waste is only accumulated, is not a destination facility for purposes of managing that category of universal waste.

"Dike" means an embankment or ridge of either natural or man-made materials used to prevent the movement of liquids, sludges, solids, or other materials.

"Dioxins and furans" (D/F) means tetra-, penta-, hexa-, hepta-, and octa-chlorinated dibenzo dioxins and furans.

"Discharge" or "hazardous waste discharge" means the accidental or intentional spilling, leaking, pumping, pouring, emitting, emptying, or dumping of hazardous waste into or on any land or water.

"Disposal" means the discharge, deposit, injection, dumping, spilling, leaking, or placing of any hazardous waste into or on any land, water or air so that such hazardous waste or any constituent thereof may enter the environment or be emitted into the air or discharged into any waters, including ground waters.

"Disposal facility" means a facility or part of a facility at which hazardous waste is intentionally placed into or on any land or water, and at which waste will remain after closure. The term disposal facility does not include a corrective action management unit into which remediation wastes are placed.

"Division Director" or "Director" means the Director of the Division of Solid Waste Management of the Department, or his designee. This person also serves as the Technical Secretary to the Board, and functions as the chief of staff to both the Commissioner and the Board in matters relating to these rules and their implementation.

"DOT" means the U.S. Department of Transportation.

"Drip pad" is an engineered structure consisting of a curbed, free-draining base, constructed of non-earthen materials and designed to convey preservative kick-back or drippage from treated wood, precipitation, and surface water run-on to an associated collection system at wood preserving plants.

"Elementary neutralization unit" means a device which:

1. Is used for neutralizing wastes that are hazardous only because they exhibit the corrosivity characteristic defined in Rule 0400-12-01-.02(3)(c), or they are listed in Rule 0400-12-01-.02(4) only for this reason; and

2. Meets the definition of tank, tank system, container, transport vehicle, or vessel in this subparagraph.

"Emergency permit" means a hazardous waste management permit issued in accordance with Rule 0400-12-01-.07(1)(d).

"EPA" means the U.S. Environmental Protection Agency.

"EPA Identification Number" is synonymous with "Installation Identification Number."

"EPA region" means the states and territories found in any one of the following ten regions:

Region I - Maine, Vermont, New Hampshire, Massachusetts, Connecticut, and Rhode Island.

Region II - New York, New Jersey, Commonwealth of Puerto Rico, and the U.S. Virgin Islands.

Region III - Pennsylvania, Delaware, Maryland, West Virginia, Virginia, and the District of Columbia.

Region IV - Kentucky, Tennessee, North Carolina, Mississippi, Alabama, Georgia, South Carolina, and Florida.

Region V - Minnesota, Wisconsin, Illinois, Michigan, Indiana, and Ohio.

Region VI - New Mexico, Oklahoma, Arkansas, Louisiana, and Texas.

Region VII - Nebraska, Kansas, Missouri, and Iowa.

Region VIII - Montana, Wyoming, North Dakota, South Dakota, Utah, and Colorado.

Region IX - California, Nevada, Arizona, Hawaii, Guam, American Samoa, Commonwealth of the Northern Mariana Islands.

Region X - Washington, Oregon, Idaho, and Alaska.

"Equivalent method" means any testing or analytical method approved by the Commissioner under Rule 0400-12-01-.01(3).

"Existing hazardous waste management facility" or "existing facility" means a facility which was in operation, or for which construction had commenced, on or before the date on which one or more of the hazardous wastes handled or to be handled by the facility first became subject to regulation under rules promulgated under the Act. Construction has commenced if:

1. The owner or operator has obtained all necessary Federal, State, and local preconstruction approvals or permits; and either

2. (i) A continuous physical, on-site construction program has begun; or

(ii) The owner or operator has entered into contractual obligations -- which cannot be canceled or modified without substantial loss -- for construction of the facility to be completed within a reasonable time.

"Existing portion" means that land surface area of an existing waste management unit, included in the original Part A permit application, on which wastes have been placed prior to the issuance of a permit.

"Existing tank system" or "existing component" means a tank system or component that is used for the storage or treatment of hazardous waste and that is in operation, or for which installation has commenced on or prior to July 14, 1986. Installation will be considered to have commenced if the owner or operator has obtained all Federal, State, and local approvals or permits necessary to begin physical construction of the site or installation of the tank system and if either (1) a continuous on-site physical construction or installation program has begun, or (2) the owner or operator has entered into contractual obligations - which cannot be canceled or modified without substantial loss - for physical construction of the site or installation of the tank system to be completed within a reasonable time.

"Explosives or munitions emergency" means a situation involving the suspected or detected presence of unexploded ordnance (UXO), damaged or deteriorated explosives or munitions, an improvised explosive device (IED), other potentially explosive material or device, or other potentially harmful military chemical munitions or device, that creates an actual or potential imminent threat to human health, including safety, or the environment, including property, as determined by an explosives or munitions emergency response specialist. Such situations may require immediate and expeditious action by an explosives or munitions emergency response specialist to control, mitigate, or eliminate the threat.

"Explosives or munitions emergency response" means all immediate response activities by an explosives and munitions emergency response specialist to control, mitigate, or eliminate the actual or potential threat encountered during an explosives or munitions emergency. An explosives or munitions emergency response may include in-place render-safe procedures, treatment or destruction of the explosives or munitions and/or transporting those items to another location to be rendered safe, treated, or destroyed. Any reasonable delay in the completion of an explosives or munitions emergency response caused by a necessary, unforeseen, or uncontrollable circumstance will not terminate the explosives or munitions emergency. Explosives and munitions emergency responses can occur on either public or private lands and are not limited to responses at RCRA facilities.

"Explosives or munitions emergency response specialist" means an individual trained in chemical or conventional munitions or explosives handling, transportation, render-safe procedures, or destruction techniques. Explosives or munitions emergency response specialists include Department of Defense (DOD) emergency explosive ordnance disposal (EOD), technical escort unit (TEU), and DOD-certified civilian or contractor personnel; and other Federal, State, or local government, or civilian personnel similarly trained in explosives or munitions emergency responses.

"Facility" means:

1. All contiguous land, and structures, other appurtenances, and improvements on the land, used for treating, storing, or disposing of hazardous waste. A facility may consist of several treatment, storage, or disposal operational units (e.g., one or more landfills, surface impoundments, or combinations of them).

2. For the purpose of implementing corrective action under Rule 0400-12-01-.06(6)(l), all contiguous property under the control of the owner or operator seeking a permit under the Tennessee Hazardous Waste Management Act, T.C.A. §§ 68-212-101 et seq. This definition also applies to facilities implementing corrective action under T.C.A. § 68-212-111.

3. Notwithstanding part 2 of this definition, a remediation waste management site is not a facility that is subject to Rule 0400-12-01-.06(6)(l), but is subject to corrective action requirements if the site is located within such a facility.

"Facility mailing list" means the mailing list for a facility maintained by the Department in accordance with Rule 0400-12-01-.07(7)(e)3(i)(V).

"Federal agency" means any department, agency, or other instrumentality of the Federal Government, any independent agency or establishment of the Federal Government including any Government corporation, and the Government Printing Office.

"Federal, State and local approvals or permits necessary to begin physical construction" means permits and approvals required under Federal, State or local hazardous waste control statutes, regulations or ordinances.

"FIFRA" means the Federal Insecticide, Fungicide, and Rodenticide Act (7 U.S.C. 136-136y).

"Final authorization" means approval by EPA of a State program which has met the requirements of Section 3006(b) of RCRA and the applicable requirements of 40 CFR Part 271, Subpart A.

"Final closure" means the closure of all hazardous waste management units at the facility in accordance with all applicable closure requirements so that hazardous waste management activities under Rules 0400-12-01-.05 and 0400-12-01-.06 are no longer conducted at the facility unless subject to the provisions in Rule 0400-12-01-.03(4)(e).

"Food-chain crops" means tobacco, crops grown for human consumption, and crops grown for feed for animals whose products are consumed by humans.

"Freeboard" means the vertical distance between the top of a tank or surface impoundment dike, and the surface of the waste contained therein.

"Free liquids" means liquids which readily separate from the solid portion of a waste under ambient temperature and pressure.

"Functionally equivalent component" means a component which performs the same function or measurement and which meets or exceeds the performance specifications of another component.

"Furans" – see "Dioxins and furans".

"Gasification" for the purpose of complying with Rule 0400-12-01-.02(1)(d)1(xii) means a process, conducted in an enclosed device or system, designed and operated to process petroleum feedstock, including oil-bearing hazardous secondary materials through a series of highly controlled steps utilizing thermal decomposition, limited oxidation, and gas clearing to yield a synthesis gas composed primarily of hydrogen and carbon monoxide gas.

"Generation" means the act or process of producing hazardous wastes.

"Generator" means any person, by site, whose act or process produces hazardous waste identified or listed in Rule 0400-12-01-.02 or whose act first causes a hazardous waste to become subject to regulation.

"Ground water" means water below the land surface in a zone of saturation.

"Hazardous waste" means a hazardous waste as defined in Rule 0400-12-01-.02(1)(c).

"Hazardous waste code" means the code assigned by the Department to each hazardous waste listed in Rule 0400-12-01-.02(4) and to each characteristic identified in Rule 0400-12-01-.02(3), and any derivation of such codes which may be assigned by the Department to an individual waste or class of wastes.

"Hazardous waste constituent" means a constituent that caused the Board to list the hazardous waste in Rule 0400-12-01-.02(4), or a constituent listed in Table 1 of Rule 0400-12-01-.02(3)(e).

"Hazardous waste management unit" is a contiguous area of land on or in which hazardous waste is placed, or the largest area in which there is significant likelihood of mixing hazardous waste constituents in the same area. Examples of hazardous waste management units include a

surface impoundment, a waste pile, a land treatment area, a landfill cell, an incinerator, a tank and its associated piping and underlying containment system, and a container storage area. A container alone does not constitute a unit; the unit includes containers and the land or pad upon which they are placed.

"HWM facility" means Hazardous Waste Management facility.

"Inactive portion" means that portion of a facility which is not operated after the date one or more of the hazardous wastes handled by the facility first became subject to regulation under rules promulgated under the Act. (See also "active portion" and "closed portion".)

"Incinerator" means any enclosed device that:

1. Uses controlled flame combustion and neither meets the criteria for classification as a boiler, sludge dryer, or carbon regeneration unit, nor is listed as an industrial furnace; or

2. Meets the definition of infrared incinerator or plasma arc incinerator.

"Incompatible waste" means a hazardous waste which is unsuitable for:

1. Placement in a particular device or facility because it may cause corrosion or decay of containment materials (e.g., container inner liners or tank walls); or

2. Commingling with another waste or material under uncontrolled conditions because the commingling might produce heat or pressure, fire or explosion, violent reaction, toxic dusts, mists, fumes, or gases, or flammable fumes or gases.

   (See Appendix V at Rule 0400-12-01-.05(53) and at Rule 0400-12-01-.06(57) for examples.)

"Individual generation site" means the contiguous site at or on which one or more hazardous wastes are generated. An individual generation site, such as a large manufacturing plant, may have one or more sources of hazardous waste but is considered a single or individual generation site if the site or property is contiguous.

"Industrial furnace" means any of the following enclosed devices that are integral components of manufacturing processes and that use thermal treatment to accomplish recovery of materials or energy:

1. Cement kilns

2. Lime kilns

3. Aggregate kilns

4. Phosphate kilns

5. Coke ovens

6. Blast furnaces

7. Smelting, melting and refining furnaces (including pyrometallurgical devices such as cupolas, reverberator furnaces, sintering machines, roasters, and foundry furnaces)

8. Titanium dioxide chloride process oxidation reactors

9. Methane reforming furnaces

10. Pulping liquor recovery furnaces

11. Combustion devices used in the recovery of sulfur values from spent sulfuric acid

12. Halogen acid furnaces (HAFs) for the production of acid from halogenated hazardous waste generated by chemical production facilities where the furnace is located on the site of a chemical production facility, the acid product has a halogen acid content of at least 3%, the acid product is used in a manufacturing process, and, except for hazardous waste burned as fuel, hazardous waste fed to the furnace has a minimum halogen content of 20% as-generated.

13. Such other devices as the Commissioner may, after notice and comment, add to this list on the basis of one or more of the following factors:

    (i) The design and use of the device primarily to accomplish recovery of material products;

    (ii) The use of the device to burn or reduce raw materials to make a material product;

    (iii) The use of the device to burn or reduce secondary materials as effective substitutes for raw materials, in processes using raw materials as principal feedstocks;

    (iv) The use of the device to burn or reduce secondary materials as ingredients in an industrial process to make a material product;

    (v) The use of the device in common industrial practice to produce a material product; and

    (vi) Other factors, as appropriate.

"Infrared incinerator" means any enclosed device that uses electric powered resistance heaters as a source of radiant heat followed by an afterburner using controlled flame combustion and which is not listed as an industrial furnace.

"Inground tank" means a device meeting the definition of "tank" in this subparagraph whereby a portion of the tank wall is situated to any degree within the ground, thereby preventing visual inspection of that external surface area of the tank that is in the ground.

"Injection well" means a well into which fluids are injected. "Class I" injection wells include wells used by generators of hazardous wastes or owners or operators of hazardous waste management facilities to inject hazardous waste, other than Class IV wells. "Class IV" injection wells include wells used by generators of hazardous wastes or owners or operators of hazardous waste management facilities to dispose of hazardous wastes into or above a formation which within one quarter mile of the well contains an underground source of drinking water. (See also "underground injection".)

"Inner liner" means a continuous layer of material placed inside a tank or container which protects the construction materials of the tank or container from the contained waste or reagents used to treat the waste.

"In operation" refers to a facility which is treating, storing, or disposing of hazardous waste.

"Installation identification number" ("EPA Identification Number") means the number assigned to each generator, transporter, and treatment, storage, or disposal facility by the Department or EPA. For generators and facilities in this state, and for transporters who pick up hazardous waste from, or deliver hazardous waste to, locations in this state, references in these rules to their installation identification number shall mean the number assigned by the Department. For other generators, transporters, and facilities, such references shall mean the number assigned by EPA.

"Installation inspector" means a person who, by reason of his knowledge of the physical sciences and the principles of engineering, acquired by a professional education and related practical experience, is qualified to supervise the installation of tank systems.

"Interim authorization" means approval by EPA of State hazardous waste program which has met the requirements of Section 3006(g)(2) of RCRA and applicable requirements of 40 CFR Part 271, Subpart B.

"International shipment" means the transportation of hazardous waste into or out of the jurisdiction of the United States.

"Lamp," also referred to as "universal waste lamp," is defined as the bulb or tube portion of an electric lighting device. A lamp is specifically designed to produce radiant energy, most often in the ultraviolet, visible, and infra-red regions of the electromagnetic spectrum. Examples of common universal waste electric lamps include, but are not limited to, fluorescent, high intensity discharge, neon, mercury vapor, high pressure sodium, and metal halide lamps.

"Land Disposal" when used with respect to a specified hazardous waste, shall be deemed to include, but not be limited to, any placement of such hazardous waste in a landfill, surface impoundment, waste pile, injection well, land treatment facility, salt dome formation, salt bed formation, or underground mine or cave.

"Landfill" means a disposal facility or part of a facility where hazardous waste is placed in or on land and which is not a pile, a land treatment facility, a surface impoundment, an underground injection well, a salt dome formation, a salt bed formation, an underground mine, a cave, or a corrective action management unit.

"Landfill cell" means a discrete volume of a hazardous waste landfill which uses a liner to provide isolation of wastes from adjacent cells or wastes. Examples of landfill cells are trenches and pits.

"Land treatment facility" means a facility or part of a facility at which hazardous waste is applied onto or incorporated into the soil surface; such facilities are disposal facilities if the waste will remain after closure.

"Large Quantity Handler of Universal Waste" means a universal waste handler (as defined in this subparagraph) who accumulates 5,000 kilograms or more total of universal waste (batteries, pesticides, thermostats, or lamps calculated collectively) at any time. This designation as a large quantity handler of universal waste is retained through the end of the calendar year in which 5,000 kilograms or more total of universal waste is accumulated.

"Leachate" means any liquid, including any suspended components in the liquid, that has percolated through or drained from hazardous waste.

"Leak-detection system" means a system capable of detecting the failure of either the primary or secondary containment structure or the presence of a release of hazardous waste or accumulated liquid in the secondary containment structure. Such a system must employ operational controls (e.g., daily visual inspections for releases into the secondary containment system of aboveground tanks) or consist of an interstitial monitoring device designed to detect continuously and automatically the failure of the primary or secondary containment structure or the presence of a release of hazardous waste into the secondary containment structure.

"Liner" means a continuous layer of natural or man-made materials, beneath or on the sides of a surface impoundment, landfill, or landfill cell, which restricts the downward or lateral escape of hazardous waste, hazardous waste constituents, or leachate.

"Major facility" means any facility or activity classified as such by the Regional Administrator, or, in the case of approved State programs, the Regional Administrator in conjunction with the State Director.

"Management" or "waste management" or "hazardous waste management" means the orderly control of storage, transportation, treatment, and disposal of hazardous waste.

"Manifest" means the shipping document EPA Form 8700-22 (including if necessary, EPA Form 8700-22A), originated and signed by the generator or offeror in accordance with the instructions in Appendix I of Rule 0400-12-01-.03(9)(a) and the applicable requirements of Rules 0400-12-01-.03 through 0400-12-01-.06.

"Manifest tracking number" means the alphanumeric identification number (i. e., a unique three letter suffix preceded by nine numerical digits), which is pre-printed in Item 4 of the Manifest by a registered source.

"Mercury-containing equipment" means a device or part of a device (including thermostats, but excluding batteries and lamps) that contains elemental mercury integral to its function.

"Military munitions" means all ammunition products and components produced or used by or for the U.S. Department of Defense or the U.S. Armed Services for national defense and security, including military munitions under the control of the Department of Defense, the U.S. Coast Guard, the U.S. Department of Energy (DOE), and National Guard personnel. The term military munitions includes: confined gaseous, liquid, and solid propellants, explosives, pyrotechnics, chemical and riot control agents, smokes, and incendiaries used by DOD components, including bulk explosives and chemical warfare agents, chemical munitions, rockets, guided and ballistic missiles, bombs, warheads, mortar rounds, artillery ammunition, small arms ammunition, grenades, mines, torpedoes, depth charges, cluster munitions and dispensers, demolition charges, and devices and components thereof. Military munitions do not include wholly inert items, improvised explosive devices, and nuclear weapons, nuclear devices, and nuclear components thereof. However, the term does include non-nuclear components of nuclear devices, managed under DOE's nuclear weapons program after all required sanitization operations under the Atomic Energy Act of 1954, as amended, have been completed.

"Mining overburden returned to the mine site" means any material overlying an economic mineral deposit which is removed to gain access to that deposit and is then used for reclamation of a surface mine.

"Miscellaneous unit" means a hazardous waste management unit where hazardous waste is treated, stored, or disposed of and that is not a container, tank, surface impoundment, pile, land treatment unit, landfill, incinerator, boiler, industrial furnace, underground injection well with appropriate technical standards under 40 CFR part 146 (as that Federal Regulation exists on the effective date of these rules), containment building, corrective action management unit, unit eligible for a research, development, and demonstration permit under Rule 0400-12-01-.07(1)(g), or staging pile.

"Movement" means that hazardous waste transported to a facility in an individual vehicle.

"National Pollutant Discharge Elimination System" means the national program for issuing, modifying, revoking and reissuing, termination, monitoring and enforcing permits, and imposing and enforcing pretreatment requirements, under sections 307, 402, 318, and 405 of the CWA. The term includes an approved program.

"New hazardous waste management facility" or "new facility" means a facility which began operation, or for which construction commenced after October 31, 1980. (See also "existing hazardous waste management facility".)

"New tank system" or "new tank component" means a tank system or component that will be used for the storage or treatment of hazardous waste and for which installation has commenced after July 14, 1986; except, however, for purposes of Rules 0400-12-01-.05(10)(d)7(ii) and .06(10)(d)7(ii), a new tank system is one for which construction commences after July 14, 1986. (See also "existing tank system.")

"NPDES" means National Pollutant Discharge Elimination System.

"Off-site" means any site which is not on-site.

"On ground tank" means a device meeting the definition of "tank" in this subparagraph and that is situated in such a way that the bottom of the tank is on the same level as the adjacent surrounding surface so that the external tank bottom cannot be visually inspected.

"On-site" means the same or geographically contiguous property which may be divided by public or private right-of-way, provided the entrance and exit between the properties is at a cross-roads intersection, and access is by crossing as opposed to going along the right-of-way. Non-contiguous properties owned by the same person but connected by a right-of-way which he controls and to which the public does not have access, are also considered on-site property.

"Open burning" means the combustion of any material without the following characteristics:

1. Control of combustion air to maintain adequate temperature for efficient combustion,

2. Containment of the combustion-reaction in an enclosed device to provide sufficient residence time and mixing for complete combustion, and

3. Control of emission of the gaseous combustion products. (See also "incineration" and "thermal treatment".)

"Operator" means the person responsible for the overall operation of a facility.

"Owner" means the person who owns a facility or part of a facility.

"Partial closure" means the closure of a hazardous waste management unit in accordance with the applicable closure requirements of Rules 0400-12-01-.05 and 0400-12-01-.06 at a facility that contains other active hazardous waste management units. For example, partial closure may include the closure of a tank (including its associated piping and underlying containment systems), landfill cell, surface impoundment, waste pile, or other hazardous waste management unit, while other units of the same facility continue to operate.

"Permit" means an authorization, license, or equivalent control document issued by EPA or an approved State to implement the requirements of Rule 0400-12-01-.07. Permit includes permit-by-rule (Rule 0400-12-01-.07(1)(c)), and emergency permit (Rule 0400-12-01-.07(1)(d)). Permit does not include interim status (Rule 0400-12-01-.07(3)), or any permit which has not been the subject of final agency action, such as a draft permit or a proposed permit.

"Permit-by-rule" means a provision of these regulations stating that a facility or activity is deemed to have a permit if it meets the requirements of the provision.

"Person" means an individual, trust, firm, joint stock company, corporation (including a government corporation), partnership, association, state, municipality, commission, political subdivision of a state, any interstate body, and governmental agency of this state and any department, agency, or instrumentality of the executive, legislative, and judicial branches of the federal government.

"Personnel" or "facility personnel" means all persons who work at, or oversee the operations of, a hazardous waste facility, and whose actions or failure to act may result in noncompliance with the requirements of Rules 0400-12-01-.05 or 0400-12-01-.06.

"Pesticide" means any substance or mixture of substances intended for preventing, destroying, repelling, or mitigating any pest, or intended for use as a plant regulator, defoliant, or desiccant, other than any article that:

1. Is a new animal drug under FFDCA section 201(w), or

2. Is an animal drug that has been determined by regulation of the Secretary of Health and Human Services not to be a new animal drug, or

3. Is an animal feed under FFDCA section 201(x) that bears or contains any substances described by parts 1 or 2 of this definition.

"Physical construction" means excavation, movement of earth, erection of forms or structures, or similar activity to prepare an HWM facility to accept hazardous waste.

"Pile" means any non-containerized accumulation of solid, nonflowing hazardous waste that is used for treatment or storage and that is not a containment building.

"Plasma arc incinerator" means any enclosed device using a high intensity electrical discharge or arc as a source of heat followed by an afterburner using controlled flame combustion and which is not listed as an industrial furnace.

"Point source" means any discernible, confined, and discrete conveyance, including, but not limited to any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, or vessel or other floating craft, from which pollutants are or may be discharged. This term does not include return flows from irrigated agriculture.

"Pollution Prevention" means source reduction as defined under the Pollution Prevention Act (42 U. S. C. 13101-13109). The definition is as follows:

1. Source reduction is any practice that:

   (i) Reduces the amount of any hazardous substance, pollutant, or contaminant entering any waste stream or otherwise released into the environment (including fugitive emissions) prior to recycling, treatment or disposal; and

   (ii) Reduces the hazards to public health and the environment associated with the release of such substances, pollutants, or contaminants.

2. The term source reduction includes equipment or technology modifications, process or procedure modifications, reformulation or redesign of products, substitutions of raw materials, and improvements in housekeeping, maintenance, training, or inventory control.

3. The term source reduction does not include any practice that alters the physical, chemical, or biological characteristics or the volume of a hazardous substance, pollutant, or contaminant through a process or activity which itself is not integral to and necessary for the production of a product or the providing of a service.

"PSC" which means the Tennessee Public Service Commission, was abolished. Pertinent functions are now handled by the "Tennessee Regulatory Commission."

"Publicly owned treatment works" or "POTW" means any device or system used in the treatment (including recycling and reclamation) of municipal sewage or industrial wastes of a liquid nature which is owned by the "State" or a "municipality" (as defined by Section 502(4) of CWA). This definition includes sewers, pipes, or other conveyances only if they convey wastewater to a POTW providing treatment.

"Qualified Ground-Water Scientist" means a scientist or engineer who has received a baccalaureate or post-graduate degree in the natural sciences or engineering, and has sufficient training and experience in ground-water hydrology and related fields as may be demonstrated by state registration, professional certifications, or completion of accredited university courses that

enable that individual to make sound professional judgments regarding ground-water monitoring and contaminant fate and transport.

"RCRA" means the Solid Waste Disposal Act as amended by the Resource Conservation and Recovery Act of 1976 (Pub. L. 94-580, as amended by Pub. L. 95-609 and Pub. L. 96-482, 42 U.S.C. 6901 et seq.)

"Regional Administrator" means the Regional Administrator for the EPA Region in which the facility is located, or his designee.

"Registered engineer" or "registered professional engineer" refers to a person authorized to perform engineering in Tennessee pursuant to Tennessee Code Annotated, Title 62, Chapter 2.

"Remedial Action Plan (RAP)" means a special form of RCRA permit that a facility owner or operator may obtain instead of a permit issued under paragraphs (1), (2), and (4)-(9) of Rule 0400-12-01-.07, to authorize the treatment, storage or disposal of hazardous remediation waste (as defined in this subparagraph) at a remediation waste management site.

"Remediation waste" means all solid and hazardous wastes, and all media (including groundwater, surface water, soils, and sediments) and debris, that are managed for implementing cleanup.

"Remediation waste management site" means a facility where an owner or operator is or will be treating, storing or disposing of hazardous remediation wastes. A remediation waste management site is not a facility that is subject to corrective action under Rule 0400-12-01-.06(6)(l), but is subject to corrective action requirements if the site is located in such a facility.

"Replacement unit" means a landfill, surface impoundment, or waste pile unit (1) from which all or substantially all of the waste is removed, and (2) that is subsequently reused to treat, store, or dispose of hazardous waste. "Replacement unit" does not apply to a unit from which waste is removed during closure, if the subsequent reuse solely involves the disposal of waste from that unit and other closing units or corrective action areas at the facility, in accordance with an approved closure plan or EPA or State approved corrective action.

"Representative sample" means a sample of a universe or whole (e.g., waste pile, lagoon, ground water) which can be expected to exhibit the average properties of the universe or whole.

"Run-off" means any rainwater, leachate, or other liquid that drains over land from any part of a facility.

"Run-on" means any rainwater, leachate, or other liquid that drains over land onto any part of a facility.

"Saturated zone" or "zone of saturation" means that part of the earth's crust in which all voids are filled with water.

"Schedule of compliance" means a schedule of remedial measures included in a permit, including an enforceable sequence of interim requirements (for example, actions, operations, or milestone events) leading to compliance with the Act and regulations.

"SDWA" means the Safe Drinking Water Act (Pub. L. 95-523, as amended by Pub. L. 95-1900; 42 U.S.C. 3001 et seq.)

"Site" means the land or water area where any facility or activity is physically located or conducted, including adjacent land used in connection with the facility or activity.

"Sludge" means any solid, semi-solid, or liquid waste generated from a municipal, commercial, or industrial wastewater treatment plant, water supply treatment plant, or air pollution control facility exclusive of the treated effluent from a wastewater treatment plant.

"Sludge dryer" means any enclosed thermal treatment device that is used to dehydrate sludge and that has a maximum total thermal input, excluding the heating value of the sludge itself, of 2,500 Btu/lb of sludge treated on a wet-weight basis.

"Small Quantity Generator" means a generator who generates less than 1000 kg of hazardous waste in a calendar month.

"Small Quantity Handler of Universal Waste" means a universal waste handler (as defined in this subparagraph) who does not accumulate more than 5,000 kilograms total of universal waste (batteries, pesticides, thermostats, or lamps calculated collectively) at any time.

"Solid waste" means a waste as defined in Rule 0400-12-01-.02(1)(b).

"Sorbent" means a material that is used to soak up free liquids by either adsorption or absorption, or both. Sorb means to either adsorb or absorb, or both.

"Staging pile" means an accumulation of solid, non-flowing remediation waste "as defined in this subparagraph) that is not a containment building and that is used only during remedial operations for temporary storage at a facility. Staging piles must be designated by the Director according to the requirements of Rule 0400-12-01-.06(22)(e).

"State" means the State of Tennessee.

"State/EPA Agreement" means an agreement between the Regional Administrator and the State which coordinates EPA and State activities, responsibilities and programs.

"Storage" means the containment of hazardous waste in such a manner as not to constitute disposal of such hazardous waste.

"Sump" means any pit or reservoir that meets the definition of tank and those troughs/trenches connected to it that serve to collect hazardous waste for transport to hazardous waste storage, treatment, or disposal facilities; except that as used in the landfill, surface impoundment, and waste pile rules, "sump" means any lined pit or reservoir that serves to collect liquids drained from a leachate collection and removal system or leak detection system for subsequent removal from the system.

"Surface impoundment" or "impoundment" means a facility or part of a facility which is a natural topographic depression, man-made excavation, or diked area formed primarily of earthen materials (although it may be lined with man-made materials), which is designed to hold an accumulation of liquid wastes or wastes containing free liquids, and which is not an injection well. Examples of surface impoundments are holding, storage, settling, and aeration pits, ponds, and lagoons.

"Tank" means a stationary device, designed to contain an accumulation of hazardous waste which is constructed primarily of non-earthen materials (e.g., wood, concrete, steel, plastic) which provide structural support.

"Tank system" means a hazardous waste storage or treatment tank and its associated ancillary equipment and containment system.

"T.C.A." means Tennessee Code Annotated.

"Tennessee Regulatory Commission (TRC)" means the agency now handling pertinent functions formerly handled by the PSC.

"TEQ" means toxicity equivalence, the international method of relating the toxicity of various dioxin/furan congeners to the toxicity of 2, 3, 7, 8-tetrachlorodibenzo-p-dioxin.

"Thermal treatment" means the treatment of hazardous waste in a device which uses elevated temperatures as the primary means to change the chemical, physical, or biological character or composition of the hazardous waste. Examples of thermal treatment processes are incineration, molten salt, pyrolysis, calcination, wet air oxidation, and microwave discharge. (See also "incinerator" and "open burning".)

"Totally enclosed treatment facility" means a facility for the treatment of hazardous waste which is directly connected to an industrial production process and which is constructed and operated in a manner which prevents the release of any hazardous waste or any constituent thereof into the environment during treatment. An example is a pipe in which waste acid is neutralized.

"Transfer facility" means any transportation related facility including loading docks, parking areas, storage areas and other similar areas where shipments of hazardous waste are held during the normal course of transportation.

"Transportation" means the movement of hazardous waste by air, rail, highway, or water.

"Transporter" means any person engaged in the transportation of hazardous waste.

"Transport vehicle" means a motor vehicle or rail car used for the transportation of cargo by any mode. Each cargo-carrying body (trailer, railroad freight car, etc.) is a separate transport vehicle.

"Treatability Study" means a study in which a hazardous waste is subjected to a treatment process to determine: (1) Whether the waste is amenable to the treatment process, (2) what pretreatment (if any) is required, (3) the optimal process conditions needed to achieve the desired treatment, (4) the efficiency of a treatment process for a specific waste or wastes, or (5) the characteristics and volumes of residuals from a particular treatment process. Also included in this definition for the purpose of Rule 0400-12-01-.02(1)(d)5 and 6 exemptions are liner compatibility, corrosion, and other material compatibility studies and toxicological and health effects studies. A "treatability study" is not a means to commercially treat or dispose of hazardous waste.

"Treatment" means any method, technique, or process, including neutralization, designed to change the physical, chemical, or biological character or composition of any hazardous waste so as to neutralize such waste, or so as to recover energy or material resources from the waste, or so as to render such waste non-hazardous, or less hazardous; safer to transport, store, or dispose of; or amenable for recovery, amenable for storage, or reduced in volume.

"Treatment zone" means a soil area of the unsaturated zone of a land treatment unit within which hazardous waste constituents are degraded, transformed, or immobilized.

"24-hour, 25-year storm" means a storm of 24-hour duration with a probable recurrence interval of once in 25 years.

"UIC" means the Underground Injection Control Program under Part C of the Safe Drinking Water Act, including an approved program.

"Underground injection" means the subsurface emplacement of fluids through a bored, drilled or driven well; or through a dug well, where the depth of the dug well is greater than the largest surface dimension. (See also "injection well".)

"Underground source of drinking water (USDW)" means an aquifer or its portion:

1. (i) Which supplies any public water system; or

   (ii) Which contains a sufficient quantity of ground water to supply a public water system; and

      (I) Currently supplies drinking water for human consumption; or

(II) Contains fewer than 10,000 mg/1 total dissolved solids; and

2. Which is not an exempted aquifer.

"Underground tank" means a device meeting the definition of "tank" in this subparagraph whose entire surface area is totally below the surface of and covered by the ground.

"Unfit-for-use tank system" means a tank system that has been determined through an integrity assessment or other inspection to be no longer capable of storing or treating hazardous waste without posing a threat of release of hazardous waste to the environment.

"United States" means the 50 States, the District of Columbia, the Commonwealth of Puerto Rico, the U.S. Virgin Islands, Guam, American Samoa, and the Commonwealth of the Northern Mariana Islands.

"Universal Waste" means any of the hazardous wastes listed in Rule 0400-12-01-.12(1)(a) that are managed under the universal waste requirements of Rule 0400-12-01-.12.

"Universal Waste Handler":

1. Means:

(i) A generator (as defined in this subparagraph) of universal waste; or

(ii) The owner or operator of a facility, including all contiguous property, that receives universal waste from other universal waste handlers, accumulates universal waste, and sends universal waste to another universal waste handler, to a destination facility, or to a foreign destination.

2. Does not mean:

(i) A person who treats (except under the provisions of Rule 0400-12-01-.12(2)(d)1 or 3, or Rule 0400-12-01-.12(3)(d)1 or 3), disposes of, or recycles universal waste; or

(ii) A person engaged in the off-site transportation of universal waste by air, rail, highway, or water, including a universal waste transfer facility.

"Universal Waste Transfer Facility" means any transportation-related facility including loading docks, parking areas, storage areas and other similar areas where shipments of universal waste are held during the normal course of transportation for ten days or less.

"Universal Waste Transporter" means a person engaged in the off-site transportation of universal waste by air, rail, highway, or water.

"Unsaturated zone" or "zone of aeration" means the zone between the land surface and the water table.

"Uppermost aquifer" means the geologic formation nearest the natural ground surface that is an aquifer, as well as lower aquifers that are hydraulically interconnected with this aquifer within the facility's property boundary.

"Used oil" means any oil that has been refined from crude oil, or any synthetic oil, that has been used and as a result of such use is contaminated by physical or chemical impurities.

"Vessel" includes every description of watercraft, used or capable of being used as a means of transportation on the water.

"Waste" means a solid waste as defined in Rule 0400-12-01-.02(1)(b).

"Wastewater treatment unit" means a device which:

1. Is part of a wastewater treatment facility that is subject to regulation under either section 402 or 307(b) of the Clean Water Act; and

2. Receives and treats or stores an influent wastewater that is a hazardous waste as defined in Rule 0400-12-01-.02(1)(c) or generates and accumulates a wastewater treatment sludge which is a hazardous waste as defined in Rule 0400-12-01-.02(1)(c), or treats or stores a wastewater treatment sludge which is a hazardous waste as defined in Rule 0400-12-01-.02(1)(c); and

3. Meets the definition of tank or tank system in this subparagraph.

"On-site wastewater treatment units" are those which receive solely wastes generated on-site (according to the definition of "on-site" found in this subparagraph). "Off-site wastewater treatment units" are those which receive wastes generated by facilities that are not on-site.

"Water (bulk shipment)" means the bulk transportation of hazardous waste which is loaded or carried on board a vessel without containers or labels.

"Well" means any shaft or pit dug or bored into the earth, generally of a cylindrical form, and often walled with bricks or tubing to prevent the earth from caving in.

"Well injection": (See "underground injection".)

"Zone of engineering control" means an area under the control of the owner/operator that, upon detection of a hazardous waste release, can be readily cleaned up prior to the release of hazardous waste or hazardous constituents to ground water or surface water.

(b) References [40 CFR 260.11]

1. Publications/materials and where they may be obtained referred to in these rules are set forth by EPA in 40 CFR 260.11.

(Note: 40 CFR 260.11 provides that:

(a) When used in parts 260 through 268 of this chapter, the following publications are incorporated by reference. These incorporations by reference were approved by the Director of the Federal Register pursuant to 5 U.S.C. 552(a) and 1 CFR part 51. These materials are incorporated as they exist on the date of approval and a notice of any change in these materials will be published in the Federal Register. Copies may be inspected at the Library, U.S. Environmental Protection Agency, 1200 Pennsylvania Ave., NW. (3403T), Washington, DC 20460, libraryhq@epa.gov; or at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202–741–6030, or go to:
http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html.

(b) The following materials are available for purchase from the American Society for Testing and Materials, 100 Barr Harbor Drive, P.O. Box C700, West Conshohocken, PA 19428–2959.

(1) ASTM D–93–79 or D–93–80, "Standard Test Methods for Flash Point by Pensky-Martens Closed Cup Tester," IBR approved for §261.21.

(2) ASTM D–1946–82, "Standard Method for Analysis of Reformed Gas by Gas Chromatography," IBR approved for §§264.1033, 265.1033.

(3) ASTM D 2267–88, "Standard Test Method for Aromatics in Light Naphthas and Aviation Gasolines by Gas Chromatography," IBR approved for §264.1063.

(4) ASTM D 2382–83, "Standard Test Method for Heat of Combustion of Hydrocarbon Fuels by Bomb Calorimeter (High-Precision Method)," IBR approved for §§264.1033, 265.1033.

(5) ASTM D 2879–92, "Standard Test Method for Vapor Pressure—Temperature Relationship and Initial Decomposition Temperature of Liquids by Isoteniscope," IBR approved for §265.1084.

(6) ASTM D–3278–78, "Standard Test Methods for Flash Point for Liquids by Setaflash Closed Tester," IBR approved for §261.21(a).

(7) ASTM E 168–88, "Standard Practices for General Techniques of Infrared Quantitative Analysis," IBR approved for §264.1063.

(8) ASTM E 169–87, "Standard Practices for General Techniques of Ultraviolet-Visible Quantitative Analysis," IBR approved for §264.1063.

(9) ASTM E 260–85, "Standard Practice for Packed Column Gas Chromatography," IBR approved for §264.1063.

(10) ASTM E 926–88, "Standard Test Methods for Preparing Refuse-Derived Fuel (RDF) Samples for Analyses of Metals," Test Method C—Bomb, Acid Digestion Method.

(c) The following materials are available for purchase from the National Technical Information Service, 5285 Port Royal Road, Springfield, VA 22161; or for purchase from the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402, (202) 512–1800.

(1) "APTI Course 415: Control of Gaseous Emissions," EPA Publication EPA–450/2–81–005, December 1981, IBR approved for §§264.1035 and 265.1035.'

(2) Method 1664, Revision A, n-Hexane Extractable Material (HEM; Oil and Grease) and Silica Gel Treated n-Hexane Extractable Material (SGT–HEM; Non-polar Material) by Extraction and Gravimetry, PB99–121949, IBR approved for part 261, appendix IX.

(3) The following methods as published in the test methods compendium known as "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA Publication SW–846, Third Edition. A suffix of "A" in the method number indicates revision one (the method has been revised once). A suffix of "B" in the method number indicates revision two (the method has been revised twice). A suffix of "C" in the method number indicates revision three (the method has been revised three times). A suffix of "D" in the method number indicates revision four (the method has been revised four times).

(i) Method 0010, dated September 1986 and in the Basic Manual, IBR approved for part 261, appendix IX.

(ii) Method 0020, dated September 1986 and in the Basic Manual, IBR approved for part 261, appendix IX.

(iii) Method 0030, dated September 1986 and in the Basic Manual, IBR approved for part 261, appendix IX.

(iv) Method 1320, dated September 1986 and in the Basic Manual, IBR approved for part 261, appendix IX.

(v) Method 1311, dated September 1992 and in Update I, IBR approved for part 261, appendix IX, and §§261.24, 268.7, 268.40.

(vi) Method 1330A, dated September 1992 and in Update I, IBR approved for part 261, appendix IX.

(vii) Method 1312 dated September 1994 and in Update II, IBR approved for part 261, appendix IX.

(viii) Method 0011, dated December 1996 and in Update III, IBR approved for part 261, appendix IX, and part 266, appendix IX.

(ix) Method 0023A, dated December 1996 and in Update III, IBR approved for part 261, appendix IX, part 266, appendix IX, and §266.104.

(x) Method 0031, dated December 1996 and in Update III, IBR approved for part 261, appendix IX.

(xi) Method 0040, dated December 1996 and in Update III, IBR approved for part 261, appendix IX.

(xii) Method 0050, dated December 1996 and in Update III, IBR approved for part 261, appendix IX, part 266, appendix IX, and §266.107.

(xiii) Method 0051, dated December 1996 and in Update III, IBR approved for part 261, appendix IX, part 266, appendix IX, and §266.107.

(xiv) Method 0060, dated December 1996 and in Update III, IBR approved for part 261, appendix IX, §266.106, and part 266, appendix IX.

(xv) Method 0061, dated December 1996 and in Update III, IBR approved for part 261, appendix IX, §266.106, and part 266, appendix IX.

(xvi) Method 9071B, dated April 1998 and in Update IIIA, IBR approved for part 261, appendix IX.

(xvii) Method 1010A, dated November 2004 and in Update IIIB, IBR approved for part 261, appendix IX.

(xviii) Method 1020B, dated November 2004 and in Update IIIB, IBR approved for part 261, appendix IX.

(xix) Method 1110A, dated November 2004 and in Update IIIB, IBR approved for §261.22 and part 261, appendix IX.

(xx) Method 1310B, dated November 2004 and in Update IIIB, IBR approved for part 261, appendix IX.

(xxi) Method 9010C, dated November 2004 and in Update IIIB, IBR approved for part 261, appendix IX and §§268.40, 268.44, 268.48.

(xxii) Method 9012B, dated November 2004 and in Update IIIB, IBR approved for part 261, appendix IX and §§268.40, 268.44, 268.48.

(xxiii) Method 9040C, dated November 2004 and in Update IIIB, IBR approved for part 261, appendix IX and §261.22.

(xxiv) Method 9045D, dated November 2004 and in Update IIIB, IBR approved for part 261, appendix IX.

(xxv) Method 9060A, dated November 2004 and in Update IIIB, IBR approved for part 261, appendix IX, and §§264.1034, 264.1063, 265.1034, 265.1063.

(xxvi) Method 9070A, dated November 2004 and in Update IIIB, IBR approved for part 261, appendix IX.

(xxvii) Method 9095B, dated November 2004 and in Update IIIB, IBR approved, part 261, appendix IX, and §§264.190, 264.314, 265.190, 265.314, 265.1081, 268.32.

(d) The following materials are available for purchase from the National Fire Protection Association, 1 Batterymarch Park, P.O. Box 9101, Quincy, MA 02269–9101.

(1) "Flammable and Combustible Liquids Code" (1977 or 1981), IBR approved for §§264.198, 265.198.

(2) [Reserved]

(e) The following materials are available for purchase from the American Petroleum Institute, 1220 L Street, Northwest, Washington, DC 20005.

(1) API Publication 2517, Third Edition, February 1989, "Evaporative Loss from External Floating-Roof Tanks," IBR approved for §265.1084.

(2) [Reserved]

(f) The following materials are available for purchase from the Environmental Protection Agency, Research Triangle Park, NC.

(1) "Screening Procedures for Estimating the Air Quality Impact of Stationary Sources, Revised", October 1992, EPA Publication No. EPA–450/R–92–019, IBR approved for part 266, appendix IX.

(2) [Reserved]

(g) The following materials are available for purchase from the Organisation for Economic Co-operation and Development, Environment Direcorate, 2 rue Andre Pascal, 75775 Paris Cedex 16, France.

(1) OECD Green List of Wastes (revised May 1994), Amber List of Wastes and Red List of Wastes (both revised May 1993) as set forth in Appendix 3, Appendix 4 and Appendix 5, respectively, to the OECD Council

Decision C(92)39/FINAL (Concerning the Control of Transfrontier Movements of Wastes Destined for Recovery Operations), IBR approved for 262.89 of this chapter.

(2) [Reserved])

2. These materials are listed as they exist on the effective date of these regulations.

(3) Petitions for Exclusions

(a) General

1. Any person may petition the Commissioner for an exclusion or other variance from any provision in these rules. This subparagraph sets forth general requirements which apply to all such petitions.

2. Each petition must be submitted to the Commissioner by certified mail and must include:

(i) The petitioner's name and address;

(ii) A statement of the petitioner's interest in the proposed action;

(iii) A description of the proposed action, including (where appropriate) suggested language; and

(iv) A statement of the need and justification for the proposed action, including any supporting tests, studies, or other information.

3. The Commissioner will make a tentative decision to grant or deny a petition and will issue a public notice of such tentative decision for written public comment.

4. Upon the written request of any interested person, the Commissioner may, at his discretion, hold an informal public hearing to consider oral comments on the tentative decision. A person requesting a hearing must state the issues to be raised and explain why written comments would not suffice to communicate the person's views. The Commissioner may in any case decide on his own motion to hold an informal public hearing. Notice of the public hearing shall be given by the petitioner as required by the Commissioner.

5. After evaluating all public comments the Commissioner will make a final decision to either grant or deny the petition, and will issue a public notice of such decision. The petitioner shall give this public notice as required by the Commissioner.

6. A determination made by the Environmental Protection Agency (EPA) pursuant to 40 CFR 260.21 Petitions for Equivalent Testing or Analytical Methods or 40 CFR 260.22 Petitions to Amend Part 261 to Exclude a Waste Produced at a Particular Facility shall be effective in Tennessee on the effective date of the EPA decision.

7. Any exclusion or other variance granted pursuant to this paragraph shall be rescinded if it is discovered or later determined that the exclusion or other variance has resulted or may result in a significant hazard to public health or the environment.

8. Any exclusion or other variance granted pursuant to this paragraph shall remain valid only so long as the stipulations under which it was granted are not violated.

(b) (Reserved) Petitions for Equivalent Testing or Analytical Methods [40 CFR 260.21]

(Note: The authority for implementing this subparagraph remains with the U.S. Environmental Protection Agency.)

(c) (Reserved) Petitions to Exclude a Waste Produced at a Particular Facility as Nonhazardous [40 CFR 260.22]

(Note: The authority for implementing this subparagraph remains with the U.S. Environmental Protection Agency.)

(d) Petitions to Amend Rule 0400-12-01-.12 to Include Additional Hazardous Wastes [40 CFR 260.23]

1. Any person seeking to add a hazardous waste or a category of hazardous waste to the universal waste regulations of Rule 0400-12-01-.12 may petition for a regulatory amendment under this subparagraph, subparagraph (a) of this paragraph, and Rule 0400-12-01-.12(7).

2. To be successful, the petitioner must demonstrate to the satisfaction of the Commissioner that regulation under the universal waste regulations of Rule 0400-12-01-.12 is appropriate for the waste or category of waste; will improve management practices for the waste or category of waste; and will improve implementation of the hazardous waste program. The petition must include the information required by part (a)2 of this paragraph. The petition should also address as many of the factors listed in Rule 0400-12-01-.12(7)(b) as are appropriate for the waste or category of waste addressed in the petition.

3. The Commissioner will grant or deny a petition using the factors listed in Rule 0400-12-01-.12(7)(b). The decision will be based on the weight of evidence showing that regulation under Rule 0400-12-01-.12 is appropriate for the waste or category of waste, will improve management practices for the waste or category of waste, and will improve implementation of the hazardous waste program.

4. The Commissioner may request additional information needed to evaluate the merits of the petition.

(4) Variances from Classification as a Waste [40 CFR 260.30]

(a) General

In accordance with the standards and criteria in subparagraph (b) and the procedures in subparagraph (c) of this paragraph, the Commissioner may determine on a case-by-case basis that the following recycled materials are not solid wastes:

1. Materials that are accumulated speculatively without sufficient amounts being recycled (as defined in Rule 0400-12-01-.02(1)(a)3(viii);

2. Materials that are reclaimed and then reused within the original production process in which they were generated;

3. Materials that have been reclaimed but must be reclaimed further before the materials are completely recovered.

(b) Standards and Criteria for Variances from Classification as a Solid Waste [40 CFR 260.31]

1. The Commissioner may grant requests for a variance from classifying as a solid waste those materials that are accumulated speculatively without sufficient amounts being recycled if the applicant demonstrates that sufficient amounts of the material will be recycled or transferred for recycling in the following year. If a variance is granted, it is valid only for the following year, but can be renewed, on an annual basis, by filing a new application. The Commissioner's decision will be based on the following criteria:

(i) The manner in which the material is expected to be recycled, when the material is expected to be recycled, and whether this expected disposition is likely to occur (for example, because of past practice, market factors, the nature of the material, or contractual arrangements for recycling);

(ii) The reason that the applicant has accumulated the material for one or more years without recycling 75 percent of the volume accumulated at the beginning of the year;

(iii) The quantity of material already accumulated and the quantity expected to be generated and accumulated before the material is recycled;

(iv) The extent to which the material is handled to minimize loss;

(v) Other relevant factors.

2. The Commissioner may grant requests for a variance from classifying as a solid waste those materials that are reclaimed and then reused as feedstock within the original production process in which the materials were generated if the reclamation operation is an essential part of the production process. This determination will be based on the following criteria:

(i) How economically viable the production process would be if it were to use virgin materials, rather than reclaimed materials;

(ii) The extent to which the material is handled before reclamation to minimize loss;

(iii) The time periods between generating the material and its reclamation, and between reclamation and return to the original primary production process;

(iv) The location of the reclamation operation in relation to the production process;

(v) Whether the reclaimed material is used for the purpose for which it was originally produced when it is returned to the original process, and whether it is returned to the process in substantially its original form;

(vi) Whether the person who generates the material also reclaims it;

(vii) Other relevant factors.

3. The Commissioner may grant requests for a variance from classifying as a solid waste those materials that have been reclaimed but must be reclaimed further before recovery is completed if, after initial reclamation, the resulting material is commodity-like (even though it is not yet a commercial product, and has to be reclaimed further). This determination will be based on the following factors:

(i) The degree of processing the material has undergone and the degree of further processing that is required;

(ii) The value of the material after it has been reclaimed;

(iii) The degree to which the reclaimed material is like an analogous raw material;

(iv) The extent to which an end market for the reclaimed material is guaranteed;

(v) The extent to which the reclaimed material is handled to minimize loss;

(vi) Other relevant factors.

(c) Procedures

The Commissioner will use the following procedures in evaluating applications for variances from classification as a waste:

1. The applicant must apply to the Commissioner, and the application must address the relevant criteria contained in subparagraph (b) of this paragraph.

2. The Commissioner will evaluate the application and issue a draft notice tentatively granting or denying the application. Notification of this tentative decision will be provided by the applicant, as provided for in Rule 0400-12-01-.07(7)(e) and as prepared and required by the Commissioner, except for denials, in a newspaper advertisement and radio broadcast in the locality where the recycler is located. The applicant shall provide proof of the completion of all notice requirements to the Commissioner within ten (10) days following conclusion of the public notice procedures. The Commissioner will accept comment on the tentative decision for 30 days, and may also hold a public hearing upon request or at his discretion. Notice of the public hearing shall be given by the applicant as set forth above in this part. The Commissioner will issue a final decision after receipt of comments and after the hearing (if any).

(d) Temporary Variance for Hazardous Wastes Previously Excluded as being Beneficially Used or Reused or Legitimately Recycled or Reclaimed

Materials for which, as of the effective date of this paragraph, a tentative or final exclusion has been granted by the Commissioner pursuant to the petition process established by former Department Rule 0400-12-01-.01(3)(d) (entitled "Petitions to Exclude a Waste Which Is Beneficially Used or Reused or Legitimately Recycled or Reclaimed", but subsequently deleted) shall be deemed to be temporarily granted a variance pursuant to this paragraph until a final variance determination is made in accordance with this paragraph, provided that the person to which the exclusion was granted files a variance application pursuant to part (c)1 of this paragraph within 90 days after the effective date of this paragraph.

(5) Variance to be Classified as a Boiler [40 CFR 260.32]

(a) General/Criteria

In accordance with the standards and criteria in subparagraph (2)(a) of this rule (definition of "boiler") and the procedures in subparagraph (b) of this paragraph, the Commissioner may determine on a case-by-case basis that certain enclosed devices using controlled flame combustion are boilers, even though they do not otherwise meet the definition of boiler contained in subparagraph (2)(a) of this rule, after considering the following criteria:

1. The extent to which the unit has provisions for recovering and exporting thermal energy in the form of steam, heated fluids, or heated gases; and

2. The extent to which the combustion chamber and energy recovery equipment are of integral design; and

3. The efficiency of energy recovery, calculated in terms of the recovered energy compared with the thermal value of the fuel; and

4. The extent to which exported energy is utilized; and

5. The extent to which the device is in common and customary use as a "boiler" functioning primarily to produce steam, heated fluids, or heated gases; and

6. Other factors, as appropriate.

(b) Procedures [40 CFR 260.33]

The Commissioner will use the following procedures in evaluating applications for variances from classification as a solid waste or applications to classify particular enclosed controlled flame combustion devices as boilers:

1. The applicant must apply to the Commissioner for the variance, and the application must address the relevant criteria contained in subparagraph (a) of this paragraph.

2. The Commissioner will evaluate the application and issue a draft notice tentatively granting or denying the application. Notification of this tentative decision will be provided by the applicant, as provided for in Rule 0400-12-01-.07(7)(e) and as prepared and required by the Commissioner, except for denials, in a newspaper advertisement or radio broadcast in the locality where the recycler is located. The applicant shall provide proof of the completion of all notice requirements to the Commissioner within ten (10) days following conclusion of the public notice procedures. The Commissioner will accept comment on the tentative decision for 30 days, and may also hold a public hearing upon request or at his discretion. The Commissioner will issue a final decision after receipt of comments and after the hearing (if any).

(6) Additional Regulation of Certain Hazardous Waste Recycling Activities on a Case-by-Case Basis [40 CFR 260.40]

(a) General

The Commissioner may decide on a case-by-case basis that persons accumulating or storing the recyclable materials described in Rule 0400-12-01-.02(1)(f)1(ii)(III) should be regulated under Rule 0400-12-01-.02(1)(f)2 and 3. The basis for this decision is that the materials are being accumulated or stored in a manner that does not protect human health and the environment because the materials or their toxic constituents have not been adequately contained, or because the materials being accumulated or stored together are incompatible. In making this decision, the Commissioner will consider the following factors:

1. The types of materials accumulated or stored and the amounts accumulated or stored;

2. The method of accumulation or storage;

3. The length of time the materials have been accumulated or stored before being reclaimed;

4. Whether any contaminants are being released into the environment, or are likely to be so released; and

5. Other relevant factors.

The procedures for this decision are set forth in subparagraph (b) of this paragraph.

(b) Procedures for Case-by-Case Regulation of Hazardous Waste Recycling Activities [40 CFR 260.41]

The Commissioner will use the following procedures when determining whether to regulate hazardous waste recycling activities described in Rule 0400-12-01-.02(1)(f)1(ii)(III) under the provisions of Rule 0400-12-01-.02(1)(f)2 and 3, rather than under the provisions of Rule 0400-12-01-.09(6).

1. If a generator is accumulating the waste, the Commissioner will issue a notice, published by the owner or operator, as prepared and required by the Commissioner, setting forth the factual basis for the decision and stating that the person must comply with the applicable requirements of paragraphs (1), (4), (5), and (6) of Rule 0400-12-01-.03. The notice will become final within 30 days, unless the person served requests a public

hearing to challenge the decision. Upon receiving such a request, the Commissioner will hold a public hearing. The Commissioner will provide notice, published by the owner or operator, as provided for in Rule 0400-12-01-.07(7)(e) and as prepared and required by the Commissioner, of the hearing to the public and allow public participation at the hearing. The owner or operator shall provide proof of the completion of all notice requirements to the Commissioner within ten (10) days following conclusion of the public notice procedures. The Commissioner will issue a final order after the hearing stating whether or not compliance with Rule 0400-12-01-.03 is required. The order becomes effective 30 days after service of the decision unless the Commissioner specifies a later date or unless review by the Board is requested. The order may be appealed to the Board by any person who participated in the public hearing. The Board may choose to grant or to deny the appeal. Final Department action occurs when a final order is issued and Department review procedures are exhausted.

2. If the person is accumulating the recyclable material as a storage facility, the notice will state that the person must obtain a permit in accordance with all applicable provisions of Rule 0400-12-01-.07. The owner or operator of the facility must apply for a permit within no less than 60 days and no more than six months of notice, as specified in the notice. If the owner or operator of the facility wishes to challenge the Commissioner's decision, he may do so in his permit application, in a public hearing held on the draft permit, or in comments filed on the draft permit, or on the notice of intent to deny the permit. The fact sheet accompanying the permit will specify the reasons for the determination. The question of whether the Commissioner's decision was proper will remain open for consideration during the public comment period discussed under Rule 0400-12-01-.07(7)(e) and in any subsequent hearing.

(7) Proprietary Information

(a) General

1. Purpose, Scope, and Applicability

Any information which is supplied to the Department by persons who are subject to these rules or by other governmental agencies and which is designated as proprietary information (as defined in subpart 2(viii) of this subparagraph) shall be handled by the Department as specified in this paragraph to assure that its confidentiality is maintained. Unless it is claimed or designated as proprietary, any information supplied to the Department under or relating to these rules shall be available for public review at any time during the State's normal business hours.

(Note: See 40 CFR 260.2(b) for additional requirements.)

2. Definitions

The following terms shall be defined as indicated for the purposes of this paragraph and this paragraph only:

(i) "Access" is the ability and opportunity to gain knowledge of Proprietary Information in any manner whatsoever.

(ii) "Authorized person" is any person, including members of the Board, authorized to receive Proprietary Information. Except for members of the Board, such authorization shall be granted in writing by the Commissioner.

(iii) "Document" is any recorded information regardless of its physical form or characteristics, including, but not limited to, written or printed material; processing cards and tapes; maps; charts; paintings; drawings; engravings; sketches; working papers and notes; reproduction of such things by any means or process; and sound, voice, or electronic recordings in any form.

(iv) "Document Control Number" is the unique number assigned by the document control officer to any document containing Proprietary Information.

(v) "Document Control Officer" is the individual authorized by the Commissioner in writing to be responsible for all incoming and outgoing documents identified as containing Proprietary Information.

(vi) "Information" is knowledge which can be communicated by any means.

(vii) "Instruction" is fully informing individuals in writing of their responsibilities for safeguarding Proprietary Information and the security procedures they shall follow.

(viii) "Proprietary Information" means any confidential information that relates to a trade secret, product, apparatus, process, operation, style of work, or financial information which is owned (not necessarily exclusively) by or licensed to a person and claimed by that person to be proprietary and confidential; provided that the claim is accompanied by a written statement from such person relating the reasons why such information should be held confidential. Such information may be submitted to the Department by the owner/licensee of the trade secret, product, etc.; or by another governmental agency which has obtained the information. If submitted by the owner/licensee, the written statement accompanying the information claimed proprietary must, at a minimum, answer the questions in items (I) through (IV) of this subpart. If submitted by another governmental agency, the written statement need include only the accompanying statements/reasons obtained by that agency.

(I) Will disclosure of the information be likely to substantially harm your competitive position? If so, what would the harm be, and why should it be viewed as substantial? What is the relationship between disclosure and the harm?

(II) What measures have you taken to guard against undesired disclosure of the information to others?

(III) To what extent has the information been disclosed to others, and what precautions have you taken in connection with that disclosure?

(IV) Has the U.S. Environmental Protection Agency or any other Federal or State of Tennessee agency made a pertinent confidentiality determination? (If so, please include a copy of this determination, if available.)

3. Policy

Department employees are prohibited from disclosing, in any manner and to any extent not authorized by law or regulations, any Proprietary Information coming to them in the course of their employment or official duties. Proprietary Information is to be held in confidence, protected in accordance with the procedures described in this paragraph, and released only to authorized persons.

(b) Responsibilities

1. Commissioner

The Commissioner is responsible for:

(i) Designating a document control officer;

(ii) Assuring that all Department employees receiving and handling Proprietary Information receive instruction as to their responsibilities for controlling Proprietary Information;

(iii) Maintaining a record which lists all employees who have authorized access to Proprietary Information;

(iv) Obtaining a "Confidentiality Agreement" from all employees having access to Proprietary Information;

(v) Obtaining a "Confidentiality Agreement upon Transfer or Termination" from all employees having access to Proprietary Information in the event such employees decide to terminate employment or are transferred to a position not requiring such access;

(vi) Assuring that the appropriate requirements for storage and use are met, including control of access to keys and combinations;

(vii) Taking appropriate disciplinary action concerning any Department employees who fail to comply with the requirements of this paragraph; and

(viii) Notifying the person submitting Proprietary Information which has been disclosed in violation of the requirements of this paragraph of such occurrence.

2. Document Control Officer

The Document Control Officer is responsible for the maintenance, control and distribution of all Proprietary Information received by the Department as follows:

(i) Logging of all Proprietary Information as received by the Department, both incoming and outgoing;

(ii) Assigning a document control number to each document received containing Proprietary Information;

(iii) Maintaining a system which identifies employees authorized to receive Proprietary Information;

(iv) Releasing Proprietary Information only to persons from whom the confidentiality agreements of subparts 1(iv) and (v) of this subparagraph have been obtained;

(v) Maintaining a system to insure that any Proprietary Information transmitted to field locations is received;

(vi) Maintaining at Department offices a system for retrieval of documents that are furnished to other program offices;

(vii) Authorizing and supervising the reproduction and destruction of Proprietary Information; and

(viii) Assuring that recipients of Proprietary Information have proper storage capability prior to release of such documents, or, if they do not, requiring return of the released Proprietary Information the same day.

3. Employees

Employees are responsible for:

(i) Controlling all Proprietary Information entrusted to them;

(ii) Only discussing Proprietary Information with authorized persons;

(iii) Never leaving the Proprietary Information unattended when not properly stored;

(iv) Never discussing Proprietary Information over the telephone except upon approval of the document control officer should the Proprietary Information be needed in an emergency situation;

(v) Storing the Proprietary Information as specified in part (c)5 of this paragraph when not in use and at the close of business;

(vi) Not reproducing Proprietary Information documents. Additional copies must be obtained through the document control officer; and

(vii) Reporting immediately possible violations of these regulations to the Commissioner.

(c) Procedures

1. Receipt and Handling

The document control officer shall:

(i) Receive all information claimed as proprietary and confidential which is submitted to the Department;

(ii) Log in all Proprietary Information received by the Department;

(iii) Assign a document control number to all Proprietary Information;

(iv) Attach a Proprietary Information cover sheet to the document;

(v) Release Proprietary Information only to authorized persons; and

(vi) Review the claim and, using the written statement accompanying the information claimed proprietary, the answers to the questions at items (a)2(viii)(I) through (IV) of this paragraph and other information as may be required, determine whether to approve or deny it, in part or in whole.

2. Transmission

(i) Proprietary Information must be transmitted in a double envelope by Registered Mail, Return Receipt Requested. The inner envelope must reflect the address of the recipient with the following additional wording on the front side of the inner envelope:

"Confidential Business - To Be Opened By Document Control Officer Only."

The outer envelope must reflect the normal address without the additional wording.

(ii) All requests to the document control officer for Proprietary Information must be in writing and signed by the requesting employee.

(iii) Proprietary Information may be hand carried to other Department facilities by authorized persons providing the dispatching document control officer maintains a record and obtains a receipt from the receiving document control officer.

Information being hand carried should be packaged as described in subpart (i) of this part.

(iv) Proprietary Information within a Department office shall be hand delivered only by an authorized person. At no time shall Proprietary Information be transmitted through inner office mailing channels.

3. Reproduction

Proprietary Information shall not be reproduced except upon approval by and under the supervision of the document control officer. Any reproduction shall be limited by a document control system and be subject to the same control requirements as for the original.

4. Destruction

Proprietary Information shall not be destroyed except upon approval by and under the supervision of the document control officer. The document control officer shall keep a record of destruction in the appropriate log and notify the person submitting the Proprietary Information.

5. Storage

(i) Documents containing Proprietary Information must be stored within a locked cabinet so as to limit access to authorized persons.

(ii) Keys and/or combinations to cabinets and/or rooms where the data is stored must be issued only to an authorized person.

(d) Transmittal Outside Department Offices

Proprietary Information shall not be transmitted outside Department offices without the approval of the Commissioner and such information must be transmitted by the document control officer in accordance with part (c)2 of this paragraph. The person submitting the Proprietary Information shall be notified when such occurs.

(e) Release to EPA

Notwithstanding any requirement of this paragraph seemingly to the contrary, Proprietary Information may be released to the U.S. Environmental Protection Agency in connection with the Commissioner's or Board's implementation or his or its responsibilities pursuant to the Act or as necessary to comply with federal law. Any such release of Proprietary Information to EPA, however, will be made with a confidentiality claim and shall be accompanied by the written statement received by the Department pursuant to subpart (a)2(viii) of this paragraph. Any transmittal of Proprietary Information to EPA shall be subject to the requirements of subparagraph (d) of this paragraph. The Commissioner shall notify the submitter of Proprietary Information of the release of such information to EPA as soon as practicable - to be no later than 5 days after such release - following receipt of EPA's request for the information.

(8) Availability of Information

(a) The Division will respond to all requests for records within 20 days after the date of receipt of such requests.

(b) If a facility does not assert a claim of proprietary information at the first opportunity provided by the Division, the Division may release the information without further notice to the facility. In addition, in the case of any information submitted in connection with a permit, permit application or interim status under Rules 0400-12-01-.05, .06, and .07, any facility proprietary information claim must be asserted at the time of submission of the information to the Division.

(c) If a proprietary information claim is asserted and cannot be resolved in the time period provided for the Division's response to a request, the requestor will be notified of the proprietary information claim within the maximum 20-day time limit provided for the Division's response. In addition, the requestor must be told that the Division has denied the request in order to resolve the proprietary information claim.

(9) Retention of Records

(a) In order to protect public health, safety and welfare, to prevent degradation of the environment, conserve natural resources and provide a coordinated statewide hazardous waste management program it is necessary to manage and retain records. These records shall be managed in accordance with Chapter 1210-01 Rules of Public Records Commission.

(b) As defined by paragraph (2) of Rule 1210-01-.02, permanent records have permanent administrative, fiscal, historical or legal value. The following types of records generated by or received by the Department while fulfilling its duties under T.C.A. §§ 68-212-101 et seq., and Chapter 0400-12-01 Hazardous Waste Management shall be managed as permanent records:

1. All records containing information, by site, of hazardous wastes or hazardous secondary materials that have been generated, treated, stored, disposed of and/or recycled, or hazardous waste or hazardous secondary material activities that have been conducted at the site, shall be managed as a permanent record. These records have historic value since there is a risk that these hazardous waste activities may have caused contamination that remains undetected for many years. When an exposure occurs these records would be required in order to facilitate an effective response. These records include, but are not limited to:

(i) Generator notifications, waste stream pages and annual reports;

(ii) Hazardous waste permits and permit applications;

(iii) Hazardous Waste Inspection reports and enforcement actions; and

(iv) Recycling determinations and investigations.

2. All records regarding hazardous waste or hazardous substance remedial action sites managed by the Division shall be managed as permanent records. Records regarding site characterization, monitoring, remedial actions, risk determination and enforcement actions have historic value since the long term affects of hazardous waste, hazardous waste constituents or hazardous substances are uncertain and could lead to future exposures. When an exposure occurs, these records would be required in order to facilitate an effective response.

3. All records regarding unregulated hazardous waste sites where unlawful hazardous waste treatment, storage, disposal or recycling was documented shall be managed as permanent records. These records have historic value since the long term affects of hazardous waste, hazardous waste constituents or hazardous substances are uncertain and could lead to future exposures. When an exposure occurs, these records would be required in order to facilitate an effective response.

Authority: T.C.A. §§68-212-101 et seq. and 4-5-201 et seq.

0400-12-01-.02 Identification and Listing of Hazardous Waste.

(1) General [40 CFR 261 Subpart A]

(a) Purpose and Scope [40 CFR 261.1]

1. This rule identifies those solid wastes which are subject to regulation as hazardous wastes under Rules 0400-12-01-.03 through .07. In this rule:

(i) Paragraph (1) defines the terms "solid waste" and "hazardous waste", identifies those wastes which are excluded from regulation under Rules 0400-12-01-.03 through .07, .09 and .10 and establishes special management requirements for hazardous waste produced by conditionally exempt small quantity generators and hazardous waste which is recycled.

(ii) Paragraph (2) sets forth the criteria used by the Board to identify characteristics of hazardous waste and to list particular hazardous wastes.

(iii) Paragraph (3) identifies characteristics of hazardous waste.

(iv) Paragraph (4) lists particular hazardous wastes.

2. (i) The definition of solid waste contained in this rule applies only to wastes that also are hazardous for purposes of the regulations implementing T.C.A. Title 68, Chapter 212. For example it does not apply to materials (such as non-hazardous scrap, paper, textiles, or rubber) that are not otherwise hazardous wastes and that are recycled.

(ii) This rule identifies only some of the materials which are solid wastes and hazardous wastes under T.C.A. Sections 68-212-105, 68-212-107, 68-212-111, 68-212-114 and 68-212-115. A material which is not defined as a solid waste in this rule, or is not a hazardous waste identified or listed in this rule, is still a solid waste and a hazardous waste for purposes of these statutory sections if:

(I) In the case of T.C.A. Section 68-212-107, the Commissioner has reason to believe that the material may be a solid waste within the meaning of T.C.A. Section 68-212-104(19) and a hazardous waste within the meaning of T.C.A. Section 68-212-104(8); or

(II) In the case of T.C.A. Sections 68-212-105, 68-212-111, 68-212-114 and 68-212-115, the statutory definition of a waste and a hazardous waste are established.

3. For the purposes of subparagraphs (b) and (f) of this paragraph:

(i) A "spent material" is any material that has been used and as a result of contamination can no longer serve the purpose for which it was produced without processing;

(ii) "Sludge" has the same meaning used in Rule 0400-12-01-.01(2)(a);

(iii) A "by-product" is a material that is not one of the primary products of a production process and is not solely or separately produced by the production process. Examples are process residues such as slags or distillation column bottoms. The term does not include a co-product that is produced for the general public's use and is ordinarily used in the form it is produced by the process.

(iv) A material is "reclaimed" if it is processed to recover a usable product, or if it is regenerated. Examples are recovery of lead values from spent batteries and

regeneration of spent solvents.

(v) A material is "used or reused" if it is either:

(I) Employed as an ingredient (including use as an intermediate) in an industrial process to make a product (for example, distillation bottoms from one process used as feedstock in another process). However, a material will not satisfy this condition if distinct components of the material are recovered as separate end products (as when metals are recovered from metal-containing secondary materials); or

(II) Employed in a particular function or application as an effective substitute for a commercial product (for example, spent pickle liquor used as phosphorous precipitant and sludge conditioner in wastewater treatment).

(vi) "Scrap metal" is bits and pieces of metal parts (e.g., bars, turnings, rods, sheets, wire) or metal pieces that may be combined together with bolts or soldering (e.g., radiators, scrap automobiles, railroad box cars), which when worn or superfluous can be recycled.

(vii) A material is "recycled" if it is used, reused, or reclaimed.

(viii) A material is "accumulated speculatively" if it is accumulated before being recycled. A material is not accumulated speculatively, however, if the person accumulating it can show that the material is potentially recyclable and has a feasible means of being recycled; and that -- during the calendar year (commencing on January 1) -- the amount of material that is recycled, or transferred to a different site for recycling, equals at least 75 percent by weight or volume of the amount of that material accumulated at the beginning of the period. In calculating the percentage of turnover, the 75 percent requirement is to be applied to each material of the same type (e.g., slags from a single smelting process) that is recycled in the same way (i.e., from which the same material is recovered or that is used in the same way). Materials accumulating in units that would be exempt from regulation under subpart (d)3(i) of this paragraph are not be included in making the calculation. (Materials that are already defined as solid wastes also are not to be included in making the calculation.) Materials are no longer in this category once they are removed from accumulation for recycling, however.

(ix) "Excluded scrap metal" is processed scrap metal, unprocessed home scrap metal, and unprocessed prompt scrap metal.

(x) "Processed scrap metal" is scrap metal which has been manually or physically altered to either separate it into distinct materials to enhance economic value or to improve the handling of materials. Processed scrap metal includes, but is not limited to scrap metal which has been baled, shredded, sheared, chopped, crushed, flattened, cut, melted, or separated by metal type (i.e., sorted), and, fines, drosses and related materials which have been agglomerated. (Note: shredded circuit boards being sent for recycling are not considered processed scrap metal. They are covered under the exclusion from the definition of solid waste for shredded circuit boards being recycled (Rule 0400-12-01-.02(1)(d)1(xvi)).

(xi) "Home scrap metal" is scrap metal as generated by steel mills, foundries, and refineries such as turnings, cuttings, punchings, and borings.

(xii) "Prompt scrap metal" is scrap metal as generated by the metal working/fabrication industries and includes such scrap metal as turnings,

cuttings, punchings, and borings. Prompt scrap is also known as industrial or new scrap metal.

(b) Definition of Solid Waste [40 CFR 261.2]

1. (i) A "solid waste" is any discarded material that is not excluded by part (d)1 of this paragraph or that is not excluded by variance granted under Rule 0400-12-01-.01(4)(a) and (b).

(ii) A "discarded material" is any material which is:

(I) "Abandoned", as explained in part 2 of this paragraph; or

(II) "Recycled", as explained in part 3 of this paragraph; or

(III) Considered "inherently waste-like", as explained in part 4 of this subparagraph; or

(IV) A military munition identified as a solid waste in Rule 0400-12-01-.09(13)(c).

2. Materials are solid waste if they are "abandoned" by being:

(i) Disposed of; or

(ii) Burned or incinerated; or

(iii) Accumulated, stored, or treated (but not recycled) before or in lieu of being abandoned by being disposed of, burned, or incinerated.

3. Materials are solid wastes if they are "recycled" -- or accumulated, stored, or treated before recycling -- as specified in subparts (i) through (iv) of this part:

(i) "Used in a manner constituting disposal".

(I) Materials noted with a "*" in Column 1 of Table 1 are solid wastes when they are:

I. Applied to or placed on the land in a manner that constitutes disposal; or

II. Used to produce products that are applied to or placed on the land or are otherwise contained in products that are applied to or placed on the land (in which cases the product itself remains a solid waste).

(II) However, commercial chemical products listed in subparagraph (4)(d) of this rule are not solid wastes if they are applied to the land and that is their ordinary manner of use.

(ii) "Burning for energy recovery"

(I) Materials noted with a "*" in column 2 of Table 1 are solid wastes when they are:

I. Burned to recover energy;

II. Used to produce a fuel or are otherwise contained in fuels (in which cases the fuel itself remains a solid waste).

(II) However, commercial chemical products listed in subparagraph (4)(d) of this rule are not solid wastes if they are themselves fuels.

(iii) "Reclaimed"

Materials noted with a "*" in column 3 of Table 1 are solid wastes when reclaimed (except as provided under subpart (d)1(xix) of this paragraph). Materials noted with a "-" in column 3 of Table 1 are not solid wastes when reclaimed.

(iv) "Accumulated speculatively"

Materials noted with a "*" in column 4 of Table 1 are solid wastes when accumulated speculatively.

Table 1

	Use constituting disposal (Rule 0400-12-01-.02(1)(b)3(i))	Energy recovery/fuel (Rule 0400-12-01-.02(1)(b)3(ii))	Reclamation (Rule 0400-12-01-.02(1)(b)3 (iii)) (except as provided in Rule 0400-12-01-.02(1)(d)1 (xix) for mineral processing secondary materials	Speculative accumulation (Rule 0400-12-01-.02(1)(b)3 (iv))
	(1)	(2)	(3)	(4)
Spent Materials	(*)	(*)	(*)	(*)
Sludges [listed in Rule 0400-12-01-.02(4)(b) or (c)]	(*)	(*)	(*)	(*)
Sludges exhibiting a characteristic of hazardous waste	(*)	(*)	-	(*)
By-products [listed in Rule 0400-12-01-.02(4)(b) or (c)]	(*)	(*)	(*)	(*)
By-products exhibiting a characteristic of hazardous waste	(*)	(*)	-	(*)
Commercial chemical products listed in Rule 0400-12-01-.02(4)(d)	(*)	(*)	-	-
Scrap metal that is not excluded under Rule 0400-12-01-.02(1)(d)1(xv)	(*)	(*)	(*)	(*)

(Note: The terms "spent materials", "sludges", "by-products", "scrap metal" and "processed scrap metal" are defined in subparagraph (1)(a) of this rule.)

4. "Inherently waste-like materials"

The following materials are solid wastes when they are recycled in any manner:

(i) Hazardous Waste Codes F020, F021 (unless used as an ingredient to make a product at the site of generation), F022, F023, F026, and F028.

(ii) Secondary materials fed to a halogen acid furnace that exhibit a characteristic of a hazardous waste or are listed as a hazardous waste as defined in paragraph (3) or (4) of this rule, except for brominated material that meets the following criteria:

(I) The material must contain a bromine concentration of at least 45%; and

(II) The material must contain less than a total of 1% of toxic organic compounds listed in paragraph (5) Appendix VIII of this rule; and

(III) The material is processed continually on-site in the halogen acid furnace via direct conveyance (hard piping).

(iii) The Board will use the following criteria to add wastes to that list:

(I) I. The materials are ordinarily disposed of, burned, or incinerated; or

II. The materials contain toxic constituents listed in paragraph (5) Appendix VIII of this rule and these constituents are not ordinarily found in raw materials or products for which the materials substitute (or are found in raw materials or products in smaller concentrations) and are not used or reused during the recycling process; and

(II) The material may pose a substantial hazard to human health and the environment when recycled.

5. "Materials that are not solid waste when recycled"

(i) Materials are not solid wastes when they can be shown to be recycled by being:

(I) Used or reused as ingredients in an industrial process to make a product, provided the materials are not being reclaimed; or

(II) Used or reused as effective substitutes for commercial products; or

(III) Returned to the original process from which they are generated, without first being reclaimed or land disposed. The material must be returned as a substitute for feedstock materials. In cases where the original process to which the material is returned is a secondary process, the materials must be managed such that there is no placement on the land. In cases where the materials are generated and reclaimed within the primary mineral processing industry, the conditions of the exclusion found at subpart (d)1(xix) of this paragraph apply rather than this item.

(ii) The following materials are solid wastes, even if the recycling involves use, reuse, or return to the original process (described in items (i)(I) through (III) of this part):

(I) Materials used in a manner constituting disposal, or used to produce products that are applied to the land; or

(II) Materials burned for energy recovery, used to produce a fuel, or contained in fuels; or

(III) Materials accumulated speculatively; or

(IV) Materials listed in subparts 4(i) and 4(ii) of this subparagraph.

6. "Documentation of claims that materials are not solid wastes or are conditionally exempt from regulation".

Respondents in actions to enforce regulations implementing the Act and Chapter 0400-12-01 who raise a claim that a certain material is not a solid waste, or is conditionally exempt from regulation, must demonstrate that there is a known market or disposition for the material, and that they meet the terms of the exclusion or exemption. In doing so, they must provide appropriate documentation (such as contracts showing that a second person uses the material as an ingredient in a production process) to demonstrate that the material is not a waste, or is exempt from regulation. In addition, owners or operators of facilities claiming that they actually are recycling materials must show that they have the necessary equipment to do so.

(c) Definition of Hazardous Waste [40 CFR 261.3]

1. A solid waste, as defined in subparagraph (b) of this paragraph, is a hazardous waste if:

(i) It is not excluded from regulation as a hazardous waste under part (d)2 of this paragraph; and

(ii) It meets any of the following criteria:

(I) It exhibits any of the characteristics of hazardous waste identified in paragraph (3) of this rule. However, any mixture of a waste from the extraction, beneficiation, and processing of ores and minerals excluded under subpart (d)2(xv) of this paragraph and any other solid waste exhibiting a characteristic of hazardous waste under paragraph (3) of this rule is a hazardous waste only if it exhibits a characteristic that would not have been exhibited by the excluded waste alone if such mixture had not occurred or if it continues to exhibit any of the characteristics exhibited by the non-excluded wastes prior to mixture. Further, for the purposes of applying the Toxicity Characteristic to such mixtures, the mixture is also a hazardous waste if it exceeds the maximum concentration for any contaminant listed in Table 1 to subparagraph (3)(e) of this rule that would not have been exceeded by the excluded waste alone if the mixture had not occurred or if it continues to exceed the maximum concentration for any contaminant exceeded by the nonexempt waste prior to mixture.

(II) It is listed in paragraph (4) of this rule and has not been excluded from the lists in paragraph (4) of this rule under Rule 0400-12-01-.01(3)(a) and (c).

(III) (RESERVED) [261.3(a)(2)(iii)]

(IV) It is a mixture of solid waste and one or more hazardous wastes listed in paragraph (4) of this rule and has not been excluded from subpart 1(ii) of this subparagraph under Rule 0400-12-01-.01(3)(a) and (c), parts 7 or 8 of this subparagraph; however, the following mixtures of solid wastes and hazardous wastes listed in paragraph (4) of this rule are not hazardous wastes (except by application of items (I) or (II) of this subpart) if the generator can demonstrate that the mixture consists of wastewater the discharge of which is subject to regulation under T.C.A.

§§69-3-101 et seq. (including wastewater at facilities which have eliminated the discharge of wastewater) and:

I. One or more of the following spent solvents listed in subparagraph (4)(b) of this rule--benzene, carbon tetrachloride, tetrachloroethylene, trichloroethylene or the scrubber waters derived-from the combustion of these spent solvents - -provided that (1) the maximum total weekly usage of these solvents (other than the amounts that can be demonstrated not to be discharged to wastewater) divided by the average weekly flow of wastewater into the headworks of the facility's wastewater treatment or pretreatment system does not exceed 1 part per million or (2) the total measured concentration of these solvents entering the headworks of the facility's wastewater treatment system (at facilities subject to regulation under the Clean Air Act, as amended, at 40 CFR parts 60, 61, or 63, or at facilities subject to an enforceable limit in a federal operating permit that minimizes fugitive emissions),does not exceed 1 part per million on an average weekly basis. Any facility that uses benzene as a solvent and claims this exemption must use an aerated biological wastewater treatment system and must use only lined surface impoundments or tanks prior to secondary clarification in the wastewater treatment system. Facilities that choose to measure concentration levels must file a copy of their sampling and analysis plan with the Division Director, as defined in Rule 0400-12-01-.01(2)(a). A facility must file a copy of a revised sampling and analysis plan only if the initial plan is rendered inaccurate by changes in the facility's operations. The sampling and analysis plan must include the monitoring point location (headworks), the sampling frequency and methodology, and a list of constituents to be monitored. A facility is eligible for the direct monitoring option once they receive confirmation that the sampling and analysis plan has been received by the Director. The Director may reject the sampling and analysis plan if he/she finds that, the sampling and analysis plan fails to include the above information; or the plan parameters would not enable the facility to calculate the weekly average concentration of these chemicals accurately. If the Director rejects the sampling and analysis plan or if the Director finds that the facility is not following the sampling and analysis plan, the Director shall notify the facility to cease the use of the direct monitoring option until such time as the bases for rejection are corrected; or

II. One or more of the following spent solvents listed in subparagraph (4)(b) of this rule --methylene chloride, 1,1,1-trichloroethane, chlorobenzene, o-dichlorobenzene, cresols, cresylic acid, nitrobenzene, toluene, methyl ethyl ketone, carbon disulfide, isobutanol, pyridine, spent chlorofluorocarbon solvents, 2-ethoxyethanol, or the scrubber waters derived-from the combustion of these spent solvents- - provided that (1) the maximum total weekly usage of these solvents (other than the amounts that can be demonstrated not to be discharged to wastewater) divided by the average weekly flow of wastewater into the headworks of the facility's wastewater treatment or pretreatment system does not exceed 25 parts per million or (2) the total measured concentration of these solvents entering the headworks of the facility's wastewater treatment system (at facilities subject to regulation under the Clean Air Act as amended, at 40 CFR parts 60, 61, or 63, or at facilities subject to

an enforceable limit in a federal operating permit that minimizes fugitive emissions) does not exceed 25 parts per million on an average weekly basis. Facilities that choose to measure concentration levels must file a copy of their sampling and analysis plan with the Division Director, as defined in Rule 0400-12-01-.01(2)(a). A facility must file a copy of a revised sampling and analysis plan only if the initial plan is rendered inaccurate by changes in the facility's operations. The sampling and analysis plan must include the monitoring point location (headworks), the sampling frequency and methodology, and a list of constituents to be monitored. A facility is eligible for the direct monitoring option once they receive confirmation that the sampling and analysis plan has been received by the Director. The Director may reject the sampling and analysis plan if he/she finds that, the sampling and analysis plan fails to include the above information; or the plan parameters would not enable the facility to calculate the weekly average concentration of these chemicals accurately. If the Director rejects the sampling and analysis plan or if the Director finds that the facility is not following the sampling and analysis plan, the Director shall notify the facility to cease the use of the direct monitoring option until such time as the bases for rejection are corrected; or

III. One of the following wastes listed in subparagraph (4)(c) of this rule, provided that the wastes are discharged to the refinery oil recovery sewer before primary oil/water/solids separation - heat exchanger bundle cleaning sludge from the petroleum refining industry (Hazardous Waste Code K050), crude oil storage tanks sediment from petroleum refining operations (Hazardous Waste Code K169), clarified slurry oil tank sediment and/or in-line filter/separation solids from petroleum refining operations (Hazardous Waste Code K170), spent hydrotreating catalyst (Hazardous Waste Code K171), and spent hydrorefining catalyst (Hazardous Waste Code K172); or

IV. A discarded hazardous waste, commercial chemical product, or chemical intermediate listed in subparagraphs (4)(b) through (4)(d) of this rule, arising from de minimis losses of these materials. For purposes of this subitem, de minimis losses are inadvertent releases to a wastewater treatment system, including those from normal material handling operations (e. g., spills from the unloading or transfer of materials from bins or other containers, leaks from pipes, valves or other devices used to transfer materials); minor leaks of process equipment, storage tanks or containers; leaks from well maintained pump packings and seals; sample purgings; relief device discharges; discharges from safety showers and rinsing and cleaning of personal safety equipment; and rinsate from empty containers or from containers that are rendered empty by that rinsing. Any manufacturing facility that claims an exemption for de minimis quantities of wastes listed in subparagraphs (4)(b) through (4)(c) of this rule or any nonmanufacturing facility that claims an exemption for de minimis quantities of wastes listed in paragraph (4) of this rule must either have eliminated the discharge of wastewaters or have included in its Clean Water Act permit application or submission to its pretreatment control authority the constituents for which each waste was listed in Appendix VII of paragraph (5) of this rule; and the constituents in the table "Treatment Standards for Hazardous Wastes" in Rule 0400-12-01-.10(3)(a)

for which each waste has a treatment standard (i.e., Land Disposal Restriction constituents). A facility is eligible to claim the exemption once the permit writer or control authority has been notified of possible de minimis releases via the Clean Water Act permit application or the pretreatment control authority submission. A copy of the Clean Water permit application or the submission to the pretreatment control authority must be placed in the facility's on-site files; or

V. Wastewater resulting from laboratory operations containing toxic (T) wastes listed in paragraph (4) of this rule, provided that the annualized average flow of laboratory wastewater does not exceed one percent of total wastewater flow into the headworks of the facility's wastewater treatment or pre-treatment system, or provided the wastes, combined annualized average concentration does not exceed one part per million in the headworks of the facility's wastewater treatment or pre-treatment facility. Toxic (T) wastes used in laboratories that are demonstrated not to be discharged to wastewater are not to be included in this calculation; or

VI. One or more of the following wastes listed in subparagraph (4)(c) of this rule -- wastewaters from the production of carbamates and carbamoyl oximes (Hazardous Waste Code No. K157)- - provided that (1) the maximum weekly usage of formaldehyde, methyl chloride, methylene chloride, and triethylamine (including all amounts that cannot be demonstrated to be reacted in the process, destroyed through treatment, or is recovered, i.e., what is discharged or volatilized) divided by the average weekly flow of process wastewater prior to any dilution into the headworks of the facility's wastewater treatment system does not exceed a total of 5 parts per million by weight or (2) the total measured concentration of these chemicals entering the headworks of the facility's wastewater treatment system (at facilities subject to regulation under the Clean Air Act as amended, at 40 CFR parts 60, 61, or 63, or at facilities subject to an enforceable limit in a federal operating permit that minimizes fugitive emissions) does not exceed 5 parts per million on an average weekly basis. Facilities that choose to measure concentration levels must file a copy of their sampling and analysis plan with the Division Director, as defined in Rule 0400-12-01-.01(2)(a). A facility must file a copy of a revised sampling and analysis plan only if the initial plan is rendered inaccurate by changes in the facility's operations. The sampling and analysis plan must include the monitoring point location (headworks), the sampling frequency and methodology, and a list of constituents to be monitored. A facility is eligible for the direct monitoring option once they receive confirmation that the sampling and analysis plan has been received by the Director. The Director may reject the sampling and analysis plan if he/she finds that, the sampling and analysis plan fails to include the above information; or the plan parameters would not enable the facility to calculate the weekly average concentration of these chemicals accurately. If the Director rejects the sampling and analysis plan or if the Director finds that the facility is not following the sampling and analysis plan, the Director shall notify the facility to cease the use of the direct monitoring option until such time as the bases for rejection are corrected; or

VII. Wastewaters derived-from the treatment of one or more of the following wastes listed in subparagraph (4)(c) of this rule -- organic waste (including heavy ends, still bottoms, light ends, spent solvents, filtrates, and decantates) from the production of carbamates and carbamoyl oximes (Hazardous Waste Code No. K156)—provided that (1) the maximum concentration of formaldehyde, methyl chloride, methylene chloride, and triethylamine prior to any dilutions into the headworks of the facility's wastewater treatment system does not exceed a total of 5 milligrams per liter or (2) the total measured concentration of these chemicals entering the headworks of the facility's wastewater treatment system (at facilities subject to regulation under the Clean Air Act as amended, at 40 CFR parts 60, 61, or 63, or at facilities subject to an enforceable limit in a federal operating permit that minimizes fugitive emissions) does not exceed 5 milligrams per liter on an average weekly basis. Facilities that choose to measure concentration levels must file a copy of their sampling and analysis plan with the Division Director, as defined in Rule 0400-12-01-.01(2)(a). A facility must file a copy of a revised sampling and analysis plan only if the initial plan is rendered inaccurate by changes in the facility's operations. The sampling and analysis plan must include the monitoring point location (headworks), the sampling frequency and methodology, and a list of constituents to be monitored. A facility is eligible for the direct monitoring option once they receive confirmation that the sampling and analysis plan has been received by the Director. The Director may reject the sampling and analysis plan if he/she finds that, the sampling and analysis plan fails to include the above information; or the plan parameters would not enable the facility to calculate the weekly average concentration of these chemicals accurately. If the Director rejects the sampling and analysis plan or if the Director finds that the facility is not following the sampling and analysis plan, the Director shall notify the facility to cease the use of the direct monitoring option until such time as the bases for rejection are corrected.

(V) Rebuttable presumption for used oil

Used oil containing more than 1000 ppm total halogens is presumed to be a hazardous waste because it has been mixed with halogenated hazardous waste listed in paragraph (4) of this rule. Persons may rebut this presumption by demonstrating that the used oil does not contain hazardous waste (for example, to show that the used oil does not contain significant concentrations of halogenated hazardous constituents listed in appendix VIII of paragraph (5) of this rule).

I. The rebuttable presumption does not apply to metalworking oils/fluids containing chlorinated paraffins, if they are processed, through a tolling agreement, to reclaim metalworking oils/fluids. The presumption does apply to metalworking oils/fluids if such oils/fluids are recycled in any other manner, or disposed.

II. The rebuttable presumption does not apply to used oils contaminated with chlorofluorocarbons (CFCs) removed from refrigeration units where the CFCs are destined for reclamation. The rebuttable presumption does apply to used oils contaminated with CFCs that have been mixed with used oil from sources other than refrigeration units.

2. A solid waste which is not excluded from regulation under part (d)2 of this paragraph becomes a hazardous waste when any of the following events occur:

(i) In the case of a waste listed in paragraph (4) of this rule, when the waste first meets the listing description set forth in paragraph (4) of this rule.

(ii) In the case of a mixture of solid waste and one or more listed hazardous wastes, when a hazardous waste listed in paragraph (4) of this rule is first added to the solid waste.

(iii) In the case of any other waste (including a waste mixture), when the waste exhibits any of the characteristics identified in paragraph (3) of this rule.

3. Unless and until it meets the criteria of part 4 below:

(i) A hazardous waste will remain a hazardous waste

(ii) (I) Except as otherwise provided in item (II) of this subpart, part 7 or part 8 of this subparagraph, any solid waste generated from the treatment, storage, or disposal of a hazardous waste, including any sludge, spill residue, ash, emission control dust, or leachate (but not including precipitation run-off) is a hazardous waste. (However, materials that are reclaimed from solid wastes and that are used beneficially are not solid wastes and hence are not hazardous wastes under this provision unless the reclaimed material is burned for energy recovery or used in a manner constituting disposal.)

(II) The following solid wastes are not hazardous even though they are generated from the treatment, storage, or disposal of a hazardous waste, unless they exhibit one or more of the characteristics of hazardous waste:

I. Waste pickle liquor sludge generated by lime stabilization of spent pickle liquor from the iron and steel industry (SIC Codes 331 and 332).

II. Waste from burning any of the materials exempted from regulation by items (f)1(iii)(III) and (IV) of this paragraph.

III. A. Nonwastewater residues, such as slag, resulting from high temperature metals recovery (HTMR) processing of K061, K062 or F006 waste, in units identified as rotary kilns, flame reactors, electric furnaces, plasma arc furnaces, slag reactors, rotary hearth furnace/electric furnace combinations or industrial furnaces (as defined in items (vi), (vii) and (xiii) of the definition for "Industrial furnace" in Rule 0400-12-01-.01(2)(a) that are disposed in nonhazardous solid waste (Subtitle D) units, provided that these residues meet the generic exclusion levels identified in the tables in this paragraph for all constituents, and exhibit no characteristics of hazardous waste. Testing requirements must be incorporated in a facility's waste analysis plan or a generator's self-implementing waste analysis plan; at a minimum, composite samples of residues must be collected and analyzed quarterly and/or when the process or operation generating the waste changes. Persons claiming this exclusion in an enforcement action will have the burden

of proving by clear and convincing evidence that the material meets all of the exclusion requirements.

Constituent	Maximum for any single composite sample-TCLP (mg/l)
Generic exclusion levels for K061 and K062 nonwastewater HTMR residues	
Antimony	0.10
Arsenic	0.50
Barium	7.6
Beryllium	0.010
Cadmium	0.050
Chromium (total)	0.33
Lead	0.15
Mercury	0.009
Nickel	1.0
Selenium	0.16
Silver	0.30
Thallium	0.020
Zinc	70
Generic exclusion levels for F006 nonwastewater HTMR residues	
Antimony	0.10
Arsenic	0.50
Barium	7.6
Beryllium	0.010
Cadmium	0.050
Chromium (total)	0.33
Cyanide (total) (mg/kg)	1.8
Lead	0.15
Mercury	0.009
Nickel	1.0
Selenium	0.16
Silver	0.30
Thallium	0.020
Zinc	70

B. A one-time notification and certification must be placed in the facility's files and sent to the Division Director for K061, K062 or F006 HTMR residues that meet the

generic exclusion levels for all constituents and do not exhibit any characteristics that are sent to nonhazardous solid waste (Subtitle D) units. The notification and certification that is placed in the generators or treaters files must be updated if the process or operation generating the waste changes and/or if the nonhazardous solid waste (Subtitle D) unit receiving the waste changes. However, the generator or treater need only notify the Division Director or an authorized state on an annual basis if such changes occur. Such notification and certification should be sent to the Division Director by the end of the calendar year, but no later than December 31. The notification must include the following information: The name and address of the nonhazardous solid waste (Subtitle D) unit receiving the waste shipments; the Hazardous Waste Code(s) and treatability group(s) at the initial point of generation; and, the treatment standards applicable to the waste at the initial point of generation. The certification must be signed by an authorized representative and must state as follows: "I certify under penalty of law that the generic exclusion levels for all constituents have been met without impermissible dilution and that no characteristic of hazardous waste is exhibited. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment."

IV. Biological treatment sludge from the treatment of one of the following wastes listed in subparagraph (4)(c) - organic waste (including heavy ends, still bottoms, light ends, spent solvents, filtrates, and decantates) from the production of carbamates and carbamoyl oximes (Hazardous Waste Code K156), and wastewaters from the production of carbamates and carbamoyl oximes (Hazardous Waste Code K157).

V. Catalyst inert support media separated from one of the following wastes listed in subparagraph (4)(c) of this rule -- Spent hydrotreating catalyst (Hazardous Waste Code K171) and Spent hydrorefining catalyst (Hazardous Waste Code K172).

4. Any solid waste described in part 3 of this subparagraph is not a hazardous waste if it meets the following criteria:

(i) In the case of any solid waste, it does not exhibit any of the characteristics of hazardous waste identified in paragraph (3) of this rule. (However, wastes that exhibit a characteristic at the point of generation may still be subject to the requirements of Rule 0400-12-01-.10, even if they no longer exhibit a characteristic at the point of land disposal.)

(ii) In the case of a waste which is a listed waste under paragraph (4) of this rule, contains a waste listed under paragraph (4) of this rule or is derived from a waste listed in paragraph (4) of this rule, it also has been excluded from part 3 of this subparagraph under Rule 0400-12-01-.01(3)(a) and (c).

5. (RESERVED) [40 CFR 261.3(e)]

6. Notwithstanding parts 1 through 4 of this subparagraph and provided the debris as defined in Rule 0400-12-01-.10 does not exhibit a characteristic identified at paragraph

(3) of this rule the following materials are not subject to regulation under Rules 0400-12-01-.01 through .07, .09 and .10:

(i) Hazardous debris as defined in Rule 0400-12-01-.10 that has been treated using one of the required extraction or destruction technologies specified in Table 1 of Rule 0400-12-01-.10(3)(f); persons claiming this exclusion in an enforcement action will have the burden of proving by clear and convincing evidence that the material meets all of the exclusion requirements; or

(ii) Debris as defined in Rule 0400-12-01-.10 of this chapter that the Commissioner, considering the extent of contamination, has determined is no longer contaminated with hazardous waste.

7. (i) A hazardous waste that is listed in paragraph (4) of this rule solely because it exhibits one or more characteristics of ignitability as defined under subparagraph (3)(b) of this rule, corrosivity as defined under subparagraph (3)(c) of this rule, or reactivity as defined under subparagraph (3)(d) of this rule is not a hazardous waste, if the waste no longer exhibits any characteristic of hazardous waste identified in paragraph (3) of this rule.

(ii) The exclusion described in subpart (7)(i) of this subparagraph also pertains to:

(I) Any mixture of a solid waste and a hazardous waste listed in paragraph (4) of this rule solely because it exhibits the characteristics of ignitability, corrosivity, or reactivity as regulated under item 1(ii)(IV) of this subparagraph; and

(II) Any solid waste generated from treating, storing, or disposing of a hazardous waste listed in paragraph (4) of this rule solely because it exhibits the characteristics of ignitability, corrosivity, or reactivity as regulated under item 3(ii)(I) of this subparagraph.

(iii) Wastes excluded under this part are subject to Rule 0400-12-01-.10 (as applicable), even if they no longer exhibit a characteristic at the point of land disposal.

(iv) Any mixture of a solid waste excluded from regulation under Rule 0400-12-01-.02(1)(d)2(xv) and a hazardous waste listed in paragraph (4) of this rule solely because it exhibits one or more of the characteristics of ignitability, corrosivity, or reactivity as regulated under Rule 0400-12-01-.02(1)(c)1(ii)(IV) is not a hazardous waste, if the mixture no longer exhibits any characteristic of hazardous waste identified in paragraph (3) of this rule for which the hazardous waste listed in paragraph (4) of this rule was listed.

8. (i) Hazardous waste containing radioactive waste is no longer a hazardous waste when it meets the eligibility criteria and conditions of paragraph (14) of Rule 0400-12-01-.09 ("eligible radioactive mixed waste").

(ii) The exemption described in subpart 8(i) of this subparagraph also pertains to:

(I) Any mixture of a solid waste and an eligible radioactive waste; and

(II) Any solid waste generated from treating, storing, or disposing of an eligible radioactive mixed waste.

(iii) Waste exempted under this part must meet the eligibility criteria and specified conditions in part (14)(b)6 of Rule 0400-12-01-.09 and part (14)(b)11 of Rule 0400-12-01-.09 (for storage and treatment) and in part (14)(m)1 of Rule 0400-12-01-.09 and part (14)(n)1 of Rule 0400-12-01-.09 (for transportation and disposal).

Waste that fails to satisfy these eligibility criteria and conditions is regulated as hazardous waste.

(d) Exclusions [40 CFR 261.4] & [40 CFR 262.70]

1. Materials which are not solid wastes

The following materials are not solid wastes for the purpose of this rule:

(i) (I) Domestic sewage; and

(II) Any mixture of domestic sewage and other wastes that passes through a sewer system to a publicly-owned treatment works (POTW) for treatment. "Domestic sewage" means untreated sanitary wastes that pass through a sewer system.

(Comment: This exclusion does not exclude waste/wastewaters while they are being generated, collected, stored, or treated before entering the sewer system. This exclusion applies when the material enters the sewer system where it will mix with sanitary wastes at any point before reaching the POTW whereupon this material is regulated under water pollution statutes and regulations. This material is subject to all applicable reporting, monitoring, and permitting requirements of the T. C. A. §§ 68-221-101, 69-3-101, et seq. and the associated regulations. Management of this material must be in compliance with all applicable authorization (permits, etc.) associated with disposal into a POTW for subsequent treatment.)

(ii) Industrial wastewater discharges that are point source discharges subject to regulation under section 402 of the Clean Water Act, as amended.

(Comment: This exclusion applies only to the actual point source discharge. It does not exclude industrial wastewaters while they are being collected, stored or treated before discharge, nor does it exclude sludges that are generated by industrial wastewater treatment.)

(iii) Irrigation return flows.

(iv) Source, special nuclear or by-product material as defined by the Atomic Energy Act of 1954, as amended, 42 U.S.C. 2011 et seq.

(v) Materials subjected to in-situ mining techniques which are not removed from the ground as part of the extraction process.

(vi) Pulping liquors (i.e., black liquor) that are reclaimed in a pulping liquor recovery furnace and then reused in the pulping process, unless it is accumulated speculatively as defined in subpart (a)3(viii) of this paragraph.

(vii) Spent sulfuric acid used to produce virgin sulfuric acid, unless it is accumulated speculatively as defined in subpart (a)3(viii) of this paragraph.

(viii) Secondary materials that are reclaimed and returned to the original process or processes in which they were generated where they are reused in the production process provided:

(I) Only tank storage is involved, and the entire process through completion of reclamation is closed by being entirely connected with pipes or other comparable enclosed means of conveyance;

(II) Reclamation does not involve controlled flame combustion (such as occurs in boilers, industrial furnaces, or incinerators);

(III) The secondary materials are never accumulated in such tanks for over twelve months without being reclaimed; and

(IV) The reclaimed material is not used to produce a fuel, or used to produce products that are used in a manner constituting disposal.

(ix) (I) Spent wood preserving solutions that have been reclaimed and are reused for their original intended purpose;

(II) Wastewaters from the wood preserving process that have been reclaimed and are reused to treat wood; and

(III) Prior to reuse, the wood preserving wastewaters and spent wood preserving solutions described in item (I) and (II) of this subpart, so long as they meet all of the following conditions:

I. The wood preserving wastewaters and spent wood preserving solutions are reused on-site at water borne plants in the production process for their original intended purpose;

II. Prior to reuse, the wastewaters and spent wood preserving solutions are managed to prevent release to either land or groundwater or both;

III. Any unit used to manage wastewaters and/or spent wood preserving solutions prior to reuse can be visually or otherwise determined to prevent such releases;

IV. Any drip pad used to manage the wastewaters and/or spent wood preserving solutions prior to reuse complies with the standards in Rule 0400-12-01-.05(23), regardless of whether the plant generates a total of less than 100 kg/month of hazardous waste; and

V. Prior to operating pursuant to this exclusion, the plant owner or operator prepares a one-time notification stating that the plant intends to claim the exclusion, giving the date on which the plant intends to begin operating under the exclusion, and containing the following language: "I have read the applicable regulation establishing an exclusion for wood preserving wastewaters and spent wood preserving solutions and understand it requires me to comply at all times with the conditions set out in the regulation." The plant must maintain a copy of that document in its on-site records until closure of the facility. The exclusion applies only so long as the plant meets all of the conditions. If the plant goes out of compliance with any condition, it may apply to the Commissioner for reinstatement. The Commissioner may reinstate the exclusion upon finding that the plant has returned to compliance with all conditions and that violations are not likely to recur.

(x) Hazardous Waste Codes K060, K087, K141, K142, K143, K144, K145, K147, and K148, and any wastes from the coke by-products processes that are hazardous only because they exhibit the Toxicity Characteristic (TC) specified in subparagraph (3)(e) of this rule when, subsequent to generation, these materials are recycled to coke ovens, to the tar recovery process as a feedstock to

produce coal tar, or mixed with coal tar prior to the tar's sale or refining. This exclusion is conditioned on there being no land disposal of the wastes from the point they are generated to the point they are recycled to coke ovens or tar recovery or refining processes, or mixed with coal tar.

(xi) Nonwastewater splash condenser dross residue from the treatment of K061 in high temperature metals recovery units, provided it is shipped in drums (if shipped) and not land disposed before recovery.

(xii) (I) Oil-bearing hazardous secondary materials (i.e., sludges, byproducts, or spent materials) that are generated at a petroleum refinery (SIC code 2911) and are inserted into the petroleum refining process (SIC code 2911 - including, but not limited to distillation, catalytic cracking, fractionation, gasification (as defined in Rule 0400-12-01-.01(2)(a)), or thermal cracking units (i.e., cokers)) unless the material is placed on the land, or speculatively accumulated before being so recycled. Materials inserted into thermal cracking units are excluded under this item provided that the coke product also does not exhibit a characteristic of hazardous waste. Oil-bearing hazardous secondary materials may be inserted into the same petroleum refinery where they are generated, or sent directly to another petroleum refinery, and still be excluded under this provision. Except as provided in item (II) of this subpart, oil-bearing hazardous secondary materials generated elsewhere in the petroleum industry (i.e., from sources other than petroleum refineries) are not excluded under this subpart. Residuals generated from processing or recycling materials excluded under this item (I) of this subpart, where such materials as generated would have otherwise met a listing under paragraph (4) of this rule, are designated as F037 listed wastes when disposed of or intended for disposal.

(II) Recovered oil that is recycled in the same manner and with the same conditions as described in item (I) of this subpart. Recovered oil is oil that has been reclaimed from secondary materials (including wastewater generated from normal petroleum industry practices, including refining, exploration and production, bulk storage, and transportation incident thereto (SIC codes 1311, 1321, 1381, 1382, 1389, 2911, 4612, 4613, 4922, 4923, 4789, 5171, and 5172). Recovered oil does not include oil-bearing hazardous wastes listed in paragraph (4) of this rule; however, oil recovered from such wastes may be considered recovered oil. Recovered oil does not include used oil as defined in Rule 0400-12-01-.11(1)(a).

(xiii) Petroleum tank bottom waters (the water phase which accumulates in operating petroleum tanks) removed from petroleum tanks at retail, government or private outlets, bulk petroleum plants and terminals, or petroleum pipeline breakout tankage that contain recoverable petroleum product provided:

(I) The petroleum product is being or shall be legitimately recycled;

(II) The owner or operator of the petroleum facility maintains adequate records which document:

I. The dates and amounts of material removed from the petroleum tanks;

II. The dates the materials were either recycled on-site or shipped off-site to a legitimate recycler; and

III. If shipped off-site for recycling, the names of recyclers and transporters used;

(III) If accumulated on-site before being recycled, the material is accumulated in suitable tanks or containers; and:

I. Each tank or container is appropriately labeled or marked as to its contents;

II. The material is not accumulated on-site at retail government or private outlets for more than 30 days from the date that a total of 55 gallons has accumulated after removal from the petroleum tank before being recycled on-site or shipped off-site to a legitimate recycling facility; or

III. The material is not accumulated on-site at all other petroleum facilities for more than 90 days from the date it was removed from the petroleum tank before being recycled on-site or shipped off-site to a legitimate recycling facility; and

IV. Each tank or container is managed in such a manner as to minimize threats to public health and the environment, (e.g., keeping containers closed during storage, etc.).

(IV) These materials are not, at any time, accumulated or stored in earthen vessels (including, but not limited to inground or aboveground ponds, lagoons, or surface impoundments).

(xiv) Petroleum tank bottom waters (the water phase which accumulates in operating petroleum tanks) removed from petroleum tanks at retail, government or private outlets, bulk petroleum plants or terminals, or petroleum pipeline breakout tankage that contain recoverable petroleum product and which are received at recycling facilities for product reclamation provided that:

(I) The petroleum product is being or shall be legitimately recycled; and

(II) The owner or operator of the recycling facility maintains adequate records which document:

I. The generators and transporters names and addresses, and the dates and amounts of material received by the facility from off-site for recycling;

II. The recovered quantities of product; and

III. If the recovered product is shipped off-site, the names of the transporter(s) used and the dates and quantities of recovered product shipped off-site after recovery.

(III) These materials are not, at any time, accumulated or stored in earthen vessels (including, but not limited to inground or aboveground ponds, lagoons, or surface impoundments).

(xv) Excluded scrap metal (processed scrap metal, unprocessed home scrap metal, and unprocessed prompt scrap metal) being recycled.

(xvi) Shredded circuit boards being recycled provided that they are:

(I) Stored in containers sufficient to prevent a release to the environment prior to recovery; and

(II) Free of mercury switches, mercury relays and nickel-cadmium batteries and lithium batteries.

(xvii) Condensates derived from the overhead gases from kraft mill steam strippers that are used to comply with 40 CFR 63.446(e). The exemption applies only to combustion at the mill generating the condensates.

(xviii) Comparable fuels or comparable syngas fuels (i.e., comparable/syngas fuels) that meet the requirements of subparagraph (4)(i) of this rule.

(xix) Spent materials (as defined in subparagraph (a) of this paragraph) (other than hazardous wastes listed in paragraph (4) of this rule) generated within the primary mineral processing industry from which minerals, acids, cyanide, water or other values are recovered by mineral processing or by beneficiation, provided that:

(I) The spent material is legitimately recycled to recover minerals, acids, cyanide, water or other values.

(II) The spent material is not accumulated speculatively.

(III) Except as provided in item (IV) of this subpart, the spent material is stored in tanks, containers, or buildings meeting the following minimum integrity standards: a building must be an engineered structure with a floor, walls, and a roof all of which are made of non-earthen materials providing structural support (except smelter buildings may have partially earthen floors provided the secondary material is stored on the non-earthen portion), and have a roof suitable for diverting rainwater away from the foundation; a tank must be free standing, not be a surface impoundment (as defined in Rule 0400-12-01-.01(2)(a)), and be manufactured of a material suitable for containment of its contents; a container must be free standing and be manufactured of a material suitable for containment of its contents. If tanks or containers contain any particulate which may be subject to wind dispersal, the owner/operator must operate these units in a manner which controls fugitive dust. Tanks, containers, and buildings must be designed, constructed and operated to prevent significant releases to the environment of these materials.

(IV) The Commissioner may make a site-specific determination, after public review and comment, that only solid mineral processing spent materials may be placed on pads, rather than in tanks, containers, or buildings. Solid mineral processing spent materials do not contain any free liquid. The decision-maker must affirm that pads are designed, constructed and operated to prevent significant releases of the spent material into the environment. Pads must provide the same degree of containment afforded by the non-RCRA tanks, containers and buildings eligible for exclusion.

I. The decision-maker must also consider if storage on pads poses the potential for significant releases via groundwater, surface water, and air exposure pathways. Factors to be considered for assessing the groundwater, surface water, air exposure pathways are: the volume and physical and chemical properties of the spent material, including its potential for migration off the pad; the potential for human or environmental exposure to

hazardous constituents migrating from the pad via each exposure pathway, and the possibility and extent of harm to human and environmental receptors via each exposure pathway.

II. Pads must meet the following minimum standards: be designed of non-earthen material that is compatible with the chemical nature of the mineral processing spent material, capable of withstanding physical stresses associated with placement and removal, have run-on/runoff controls, be operated in a manner which controls fugitive dust, and have integrity assurance through inspections and maintenance programs.

III. Before making a determination under this subpart, the Commissioner must provide public notice and the opportunity for comment to all persons potentially interested in the determination. This can be accomplished by the owner or operator placing notice, as provided for in Rule 0400-12-01-.07(7)(e) and as prepared and required by the Commissioner, of this action in local newspapers, or broadcasting notice over local radio stations. The owner or operator shall provide proof of the completion of all notice requirements to the Commisioner within ten (10) days following conclusion of the public notice procedures.

(V) The owner or operator provides notice to the Commissioner, providing the following information: the types of materials to be recycled; the type and location of the storage units and recycling processes; and the annual quantities expected to be placed in land-based units. This notification must be updated when there is a change in the type of materials recycled or the location of the recycling process.

(VI) For purposes of subpart 2(xv) of this subparagraph, mineral processing spent materials must be the result of mineral processing and may not include any listed hazardous wastes. Listed hazardous wastes and characteristic hazardous wastes generated by non-mineral processing industries are not eligible for the conditional exclusion from the definition of solid waste.

(xx) Petrochemical recovered oil from an associated organic chemical manufacturing facility, where the oil is to be inserted into the petroleum refining process (SIC code 2911) along with normal petroleum refinery process streams, provided:

(I) The oil is hazardous only because it exhibits the characteristic of ignitability (as defined in subparagraph (3)(b) of this rule) and/or toxicity for benzene (subparagraph (3)(e) of this rule, waste code D018); and

(II) The oil generated by the organic chemical manufacturing facility is not placed on the land, or speculatively accumulated before being recycled into the petroleum refining process. An "associated organic chemical manufacturing facility" is a facility where the primary SIC code is 2869, but where operations may also include SIC codes 2821, 2822, and 2865; and is physically co-located with a petroleum refinery; and where the petroleum refinery to which the oil being recycled is returned also provides hydrocarbon feedstocks to the organic chemical manufacturing facility. "Petrochemical recovered oil" is oil that has been reclaimed from secondary materials (i.e., sludges, byproducts, or spent materials, including wastewater) from normal organic chemical manufacturing operations, as well as oil recovered from organic chemical manufacturing processes.

(xxi) Spent caustic solutions from petroleum refining liquid treating processes used as a feedstock to produce cresylic or naphthenic acid unless the material is placed on the land, or accumulated speculatively as defined in part (1)(a)3 of this rule.

(xxii) Hazardous secondary materials used to make zinc fertilizers, provided that the conditions specified below are satisfied:

(I) Hazardous secondary materials used to make zinc micronutrient fertilizers must not be accumulated speculatively, as defined in subpart (1)(a)3(viii) of this rule.

(II) Generators and intermediate handlers of zinc-bearing hazardous secondary materials that are to be incorporated into zinc fertilizers must:

I. Submit a one-time notice to the Commissioner which contains the name, address and installation identification number of the generator or intermediate handler facility, provides a brief description of the secondary material that will be subject to the exclusion, and identifies when the manufacturer intends to begin managing excluded, zinc-bearing hazardous secondary materials under the conditions specified in this subpart.

II. Store the excluded secondary material in tanks, containers, or buildings that are constructed and maintained in a way that prevents releases of the secondary materials into the environement. At a minimum, any building used for this purpose must be an engineered structure made of non-earthen materials that provide structural support, and must have a floor, walls and a roof that prevent wind dispersal and contact with rainwater. Tanks used for this purpose must be structurally sound and, if outdoors, must have roofs or covers that prevent contact with wind and rain. Containers used for this purpose must be kept closed except when it is necessary to add or remove material, and must be in sound condition. Containers that are stored outdoors must be managed within storage areas that:

A. Have containment structrures or systems sufficiently impervious to contain leaks, spills and accumulated precipitation; and

B. Provide for effective drainage and removal of leaks, spills and accumulated precipitation; and

C. Prevent run-on into the containment system.

III. With each off-site shipment of excluded hazardous secondary materials, provide written notice to the receiving facility that the material is subject to the conditions of this subpart.

IV. Maintain at the generator's or intermediate handler's facility for no less than three years records of all shipments of excluded hazardous secondary materials. For each shipment these records must at a minimum contain the following information:

A. Name of the transporter and date of the shipment;

B. Name and address of the facility that received the excluded material, and documentation confirming receipt of the shipment; and

C. Type and quantity of excluded secondary material in each shipment.

(III) Manufacturers of zinc fertilizers or zinc fertilizer ingredients made from excluded hazardous secondary materials must:

I. Store excluded hazardous secondary materials in accordance with the storage requirements for generators and intermediate handlers, as specified in subitem (II)II of this subpart.

II. Submit a one-time notification to the Commissioner that, at a minimum, specifies the name, address and installation identification number of the manufacturing facility, and identifies when the manufacturer intends to begin managing excluded, zinc-bearing hazardous secondary materials under the conditions specified in this subpart.

III. Maintain for a minimum of three (3) years records of all shipments of excluded hazardous secondary materials received by the manufacturer, which must at a minimum identify for each shipment the name and address of the generating facility, name of the transporter and the date the materials were received, the quantity received, and a brief description of the industrial process that generated the material.

IV. Submit to the Commissioner an annual report that identifies the total quantities of all excluded hazardous secondary materials that were used to manufacture zinc fertilizers or zinc fertilizer ingredients in the previous year, the name and address of each generating facility, and the industrial process(es) from which they were generated.

(IV) Nothing in this subpart preempts, overrides or otherwise negates the provision in Rule 0400-12-01-.03(1)(b) which requires any person who generates a solid waste to determine if that waste is a hazardous waste.

(V) Interim status and permitted storage units that have been used to store only zinc-bearing hazardous wastes prior to the submission of the one-time notice described in subitem (II)I of this subpart, and that afterward will be used only to store hazardous secondary materials excluded under subitem (II)I of this subpart, are not subject to the closure requirements of Rules 0400-12-01-.05 and .06.

(xxi) Zinc fertilizers made from hazardous wastes, or hazardous secondary materials that are excluded under subpart (xxii) of this part, provided that:

(I) The fertilizers meet the following contaminate limits:

I. For metal contaminants:

Constituent	Maximum Allowable Total Concentration in Fertilizer, per Unit (1%) of Zinc (ppm)
Arsenic	0.3
Cadmium	1.4

Chromium	0.6
Lead	2.8
Mercury	0.3

II. For dioxin contaminants the fertilizer must contain no more than eight (8) parts per trillion of dioxin, measured as toxic equivalent (TEQ).

(I) The manufacturer performs sampling and analysis of the fertilizer product to determine compliance with the contaminant limits for metals no less than every six months, and for dioxins no less than every twelve months. Testing must also be performed whenever changes occur to manufacturing processes or ingredients that could significantly affect the amounts of contaminants in the fertilizer product. The manufacturer may use any reliable analytical method to demonstrate that no constituent of concern is present in the product at concentrations above the applicable limits. It is the responsibility of the manufacturer to ensure that the sampling and analysis are unbiased, precise, and representative of the product(s) introduced into commerce.

(II) The manufacturer maintains for no less than three years records of all sampling and analyses performed for purposes of determining compliance with the requirements of item (II) of this subpart. Such records must at a minimum include:

I. The dates and times product samples were taken, and the dates the samples were analyzed;

II. The names and qualifications of the person(s) taking the samples;

III. A description of the methods and equipment used to take the samples;

IV. The name and address of the laboratory facility at which analyses of the samples were performed;

V. A description of the analytical methods used, including any cleanup and sample preparation methods; and

VI. All laboratory analytical results used to determine compliance with the contaminant limits specified in this subpart.

(xxiv) Used cathode ray tubes (CRTs)

(I) Used, intact CRTs as defined in Rule 0400-12-01-.01(2)(a) are not solid wastes within the United States unless they are disposed, or unless they are speculatively accumulated as defined in subpart (1)(a)3(viii) of this rule by CRT collectors or glass processors.

(II) Used, intact CRTs as defined in Rule 0400-12-01-.01(2)(a) are not solid wastes when exported for recycling provided that they meet the requirements of subparagraph (6)(c) of this rule.

(III) Used, broken CRTs as defined in Rule 0400-12-01-.01(2)(a) are not solid wastes provided that they meet the requirements of subparagraph (6)(b) of this rule.

(IV) Glass removed from CRTs is not a solid waste provided that it meets the requirements of part (6)(b)3 of this rule.

2. Wastes Which Are Not Hazardous Wastes

The following wastes are not hazardous wastes:

(i) Household waste, including household waste that has been collected, transported, stored, treated, disposed, recovered (e.g., refuse-derived fuel) or reused. "Household waste" means any material (including garbage, trash and sanitary wastes in septic tanks) derived from households (including single and multiple residences, hotels and motels, bunkhouses, ranger stations, crew quarters, campgrounds, picnic grounds and day-use recreation areas). A resource recovery facility managing municipal waste shall not be deemed to be treating, storing, disposing of, or otherwise managing hazardous wastes for the purposes of regulation under Chapter 0400-12-01, if such facility:

(I) Receives and burns only

I. Household waste (from single and multiple dwellings, hotels, motels, and other residential sources) and

II. Waste from commercial or industrial sources that does not contain hazardous waste; and

(II) Such facility does not accept hazardous wastes and the owner or operator of such facility has established contractual requirements or other appropriate notification or inspection procedures to assure that hazardous wastes are not received at or burned in such facility.

(ii) The following wastes generated within a farm and incidental to the operation of that farm:

(I) Wastes from the growing and harvesting of agricultural crops or from the raising of animals (including animal manures), which are returned to the soil as fertilizers; and

(II) Waste pesticides, provided the farmer triple-rinses each emptied pesticide container (using a capable solvent) and disposes of the pesticide residues on his own farm in a manner consistent with the disposal instructions on the pesticide label.

(iii) Mining overburden returned to the mine site.

(iv) Waste which consists of discarded arsenical-treated wood or wood products which fails the test for the Toxicity Characteristic for Hazardous Waste Codes D004 through D017 and which is not a hazardous waste for any other reason if the waste is generated by persons who utilize the arsenical-treated wood and wood products for these materials' intended end use.

(v) (I) Wastes which fail the test for the Toxicity Characteristic because chromium is present or are listed in paragraph (4) of this rule due to the presence of chromium, which do not fail the test for the Toxicity Characteristic for any other constituent or are not listed due to the presence of any other constituent, and which do not fail the test for any other characteristic, if a waste generator demonstrates to the satisfaction of the Director, by submitting an exclusion request and supporting documentation, that:

I. The chromium in the waste is exclusively (or nearly exclusively) trivalent chromium; and

II. The waste generated from an industrial process is trivalent chromium exclusively (or nearly exclusively) and the process does not contain more than minimal amounts of hexavalent chromium[1]; and

III. The waste is managed by the waste generator in non-oxidizing environments.

(II) The generator shall also submit to the Department a Chromium Exclusion Review Fee identified in Rule 0400-12-01-.08(11) prior to the Director's review of the submitted documentation.

(III) Such exclusion shall be effective only after approval in writing by the Director. Persons who obtain an exclusion shall:

I. Annually recertify the accuracy of the information on a form provided by the Director that there has been no change in the waste stream or the process generating the waste since the original exlusion was granted; and

II. It shall be the responsibility of the generator (applicant) to submit all recertifications as required by item (I) by March 1 of each succeeding year following the granting of the exclusion.

III. If a change in the waste stream or the process generating the waste has occurred since the original exclusion was granted, the generator (applicant) shall submit a new exclusion request and review fee to the Director.

(vi) Specific wastes which meet the standard in subpart (v) of this part (so long as they do not fail the test for the toxicity characteristic for any other constituent, and do not exhibit any other characteristic) are:

(I) Chrome (blue) trimmings generated by the following subcategories of the leather tanning and finishing industry: Hair pulp/chrome tan/retan/wet finish; hair save/chrome tan/retan/wet finish; retan/wet finish; no beamhouse; through-the-blue; and shearling.

(II) Chrome (blue) shavings generated by the following subcategories of the leather tanning and finishing industry: Hair pulp/chrome tan/retan/wet finish; hair save/chrome tan/retan/wet finish; retan/wet finish; no beamhouse; through-the-blue; shearling.

(III) Buffing dust generated by the following subcategories of the leather tanning and finishing industry: Hair pulp/chrome tan/retan/wet finish; hair save/chrome tan/retan/wet finish; retan/wet finish; no beamhouse; through-the-blue.

(IV) Sewer screenings generated by the following subcategories of the leather tanning and finishing industry: Hair pulp/chrome tan/retan/wet finish; hair save/chrome tan/retan/wet finish; retan/wet finish; no beamhouse; through-the-blue; and shearling.

[1] Hexavalent chromium concentrations below 5 mg/l currently are considered minimal.

(V) Wastewater treatment sludges generated by the following subcategories of the leather tanning and finishing industry: Hair pulp/chrome tan/retan/wet finish; hair save/chrome tan/retan/wet finish; retan/wet finish; no beamhouse; through-the-blue; and shearling.

(VI) Wastewater treatment sludges generated by the following subcategories of the leather tanning and finishing industry: Hair pulp/chrome tan/retan/wet finish; hair save/chrome tan/retan/wet finish; and through-the-blue.

(VII) Waste scrap leather from the leather tanning industry, the shoe manufacturing industry, and other leather product manufacturing industries.

(VIII) Wastewater treatment sludges from the production of TiO_2 pigment using chromium-bearing ores by the chloride process.

(vii) Petroleum-contaminated media and debris that fail the test for the Toxicity Characteristic of subparagraph (3)(e) of this rule (Hazardous Waste Codes D018 through D043 only) and are subject to the corrective action regulations under 40 CFR Part 280 (as those Federal regulations exist on the effective date of these rules).

(viii) Injected groundwater that is hazardous only because it exhibits the Toxicity Characteristic (Hazardous Waste Codes D018 through D043 only) in subparagraph (3)(e) of this rule that is reinjected through an underground injection well pursuant to free phase hydrocarbon recovery operations undertaken at petroleum refineries, petroleum marketing terminals, petroleum bulk plants, petroleum pipelines, and petroleum transportation spill sites until January 25, 1993. This extension applies to recovery operations in existence, or for which contracts have been issued, on or before March 25, 1991. New operations involving injection wells (beginning after March 25, 1991) will qualify for this compliance date extension (until January 25, 1993) only if operations are performed pursuant to a written state agreement issued under the Tennessee Water Quality Control Act (T.C.A. §69-3-101 et seq.) that includes a provision to assess the groundwater and the need for further remediation once the free phase recovery is completed.

(ix) Used chlorofluorocarbon refrigerants from totally enclosed heat transfer equipment, including mobile air conditioning systems, mobile refrigeration, and commercial and industrial air conditioning and refrigeration systems that use chlorofluorocarbons as the heat transfer fluid in a refrigeration cycle, provided the refrigerant is reclaimed for further use.

(x) Non-terne plated used oil filters that are not mixed with wastes listed in paragraph (4) of this rule if these oil filters have been gravity hot-drained using one of the following methods:

(I) Puncturing the filter anti-drain back valve or the filter dome end and hot-draining;

(II) Hot-draining and crushing;

(III) Dismantling and hot-draining; or

(IV) Any other equivalent hot-draining method which will remove used oil.

(xi) Used oil re-refining distillation bottoms that are used as feedstock to manufacture asphalt products.

(xii) Leachate or gas condensate collected from landfills where certain solid wastes have been disposed, provided that:

(I) The solid wastes disposed would meet one or more of the listing descriptions for hazardous Waste Codes K169, K170, K171, K172, K174, K175, K176, K177, K178, and K181 if these wastes had been generated after November 28, 2000;

(II) The solid wastes described in item (I) of this subpart were disposed prior to November 28, 2000;

(III) The leachate or gas condensate do not exhibit any characteristic of hazardous waste nor are derived from any other listed hazardous waste;

(IV) Discharge of the leachate or gas condensate, including leachate or gas condensate transferred from the landfill to a POTW by truck, rail, or dedicated pipe, is subject to regulation under sections 307(b) or 402 of the Clean Water Act;

(V) As of February 13, 2001, leachate or gas condensate derived from K169-K172 is no longer exempt if it is stored or managed in a surface impoundment prior to discharge. As of November 21, 2003, leachate or gas condensate derived from K176, K177, and K178 is no longer exempt if it is stored or managed in a surface impoundment prior to discharge. After February 26, 2007, leachate or gas condensate derived from K181 will no longer be exempt if it is stored or managed in a surface impoundment prior to discharge. There is one exception: if the surface impoundment is used to temporarily store leachate or gas condensate in response to an emergency situation (e. g., shutdown of wastewater treatment system), provided the impoundment has a double liner, and provided the leachate or gas condensate is removed from the impoundment and continues to be managed in compliance with the conditions of this item (V) after the emergency ends.

(xiii) Fly ash waste, bottom ash waste, slag waste, and flue gas emission control waste, generated primarily from the combustion of coal or other fossil fuels, except as provided by Rule 0400-12-01-.09(8)(m) for facilities that burn or process hazardous waste.

(xiv) Drilling fluids, produced waters, and other wastes associated with the exploration, development, or production of crude oil, natural gas or geothermal energy.

(xv) Solid waste from the extraction, beneficiation, and processing of ores and minerals (including coal, phosphate rock and overburden from the mining of uranium ore), except as provided by Rule 0400-12-01-.09(8)(m) for facilities that burn or process hazardous waste.

(I) For purposes of this subpart, beneficiation of ores and minerals is restricted to the following activities: crushing; grinding; washing; dissolution; crystallization; filtration; sorting; sizing; drying; sintering; pelletizing; briquetting; calcining to remove water and/or carbon dioxide; roasting, autoclaving, and/or chlorination in preparation for leaching (except where the roasting (and/or autoclaving and/or chlorination)/leaching sequence produces a final or intermediate product that does not undergo further beneficiation or processing); gravity concentration; magnetic separation; electrostatic separation; flotation; ion

exchange; solvent extraction; electrowinning; precipitation; amalgamation; and heap, dump, vat, tank, and in situ leaching.

(II) For the purpose of this subpart, solid waste from the processing of ores and minerals includes only the following wastes as generated:

I. Slag from primary copper processing;

II. Slag from primary lead processing;

III. Red and brown muds from bauxite refining;

IV. Phosphogypsum from phosphoric acid production;

V. Slag from elemental phosphorus production;

VI. Gasifier ash from coal gasification;

VII. Process wastewater from coal gasification;

VIII. Calcium sulfate wastewater treatment plant sludge from primary copper processing;

IX. Slag tailings from primary copper processing;

X. Fluorogypsum from hydrofluoric acid production;

XI. Process wastewater from hydrofluoric acid production;

XII. Air pollution control dust/sludge from iron blast furnaces;

XIII. Iron blast furnace slag;

XIV. Treated residue from roasting/leaching of chrome ore;

XV. Process wastewater from primary magnesium processing by the anhydrous process;

XVI. Process wastewater from phosphoric acid production;

XVII. Basic oxygen furnace and open hearth furnace air pollution control dust/sludge from carbon steel production;

XVIII. Basic oxygen furnace and open hearth furnace slag from carbon steel production;

XIX. Chloride process waste solids from titanium tetrachloride production;

XX. Slag from primary zinc processing.

(III) A residue derived from co-processing mineral processing secondary materials with normal beneficiation raw materials or with normal mineral processing raw materials remains excluded under this part if the owner or operator:

I. Processes at least 50 percent by weight normal beneficiation raw materials or normal mineral processing raw materials; and,

II. Legitimately reclaims the secondary mineral processing materials.

(xvi) Cement kiln dust waste, except as provided by Rule 0400-12-01-.09(8)(m) for facilities that burn or process hazardous waste.

3. Hazardous Wastes Which Are Exempted From Certain Regulations

(i) A hazardous waste which is generated in a product or raw material storage tank, a product or raw material transport vehicle or vessel, a product or raw material pipeline, or in a manufacturing process unit or an associated non-waste-treatment manufacturing unit, is not subject to regulation under these rules except as specified in subpart (ii) of this part until it exits the unit in which it was generated, unless the unit is a surface impoundment, or unless the hazardous waste remains in the unit more than 90 days after the unit ceases to be operated for manufacturing, or for storage or transportation of product or raw materials.

(ii) A hazardous waste as described in subpart (i) of this part shall be subject to the generator notification requirement of Rule 0400-12-01-.03(2), and shall be subject to such requirement irrespective of how the waste is managed after it exits the units in which it was generated (e.g., even if it exits directly into a domestic sewer system), except as provided otherwise in Rule 0400-12-01-.03(2)(a)2. Such a waste shall also be subject to the annual reporting requirements of Rule 0400-12-01-.03(5)(b) for the years in which it is removed from the units in which it was generated.

4. Samples

(i) Except as provided in subpart (ii) of this part, a sample of solid waste or a sample of water, soil, or air, which is collected for the sole purpose of testing to determine its characteristics or composition, is not subject to any requirements of these rules when:

(I) The sample is being transported to a laboratory for the purpose of testing; or

(II) The sample is being transported back to the sample collector after testing; or

(III) The sample is being stored by the sample collector before transport to a laboratory for testing; or

(IV) The sample is being stored in a laboratory before testing; or

(V) The sample is being stored in a laboratory after testing but before it is returned to the sample collector; or

(VI) The sample is being stored temporarily in the laboratory after testing for a specific purpose (for example, until the conclusion of a court case or enforcement action where further testing of the sample may be necessary).

(ii) In order to qualify for the exemption in items (i)(I) and (II) of this part a sample collector shipping samples to a laboratory and a laboratory returning samples to a sample collector must:

(I) Comply with U.S. Department of Transportation (DOT), U.S. Postal Service (USPS), or any other applicable shipping requirements; or

(II) Comply with the following requirements if the sample collector determines that DOT, USPS, or other shipping requirements do not apply to the shipment of the sample:

I. Assure that the following information accompanies the sample:

A. The sample collector's name, mailing address, and telephone number;

B. The laboratory's name, mailing address, and telephone number;

C. The quantity of the sample;

D. The date of shipment; and

E. A description of the sample.

II. Package the sample so that it does not leak, spill, or vaporize from its packaging.

(iii) This exemption does not apply if the laboratory determines that the waste is hazardous but the laboratory is no longer meeting any of the conditions stated in subpart (i) of this part.

5. Treatability Study Samples

(i) Except as provided in subpart (ii) of this part, persons who generate or collect samples for the purpose of conducting treatability studies as defined in Rule 0400-12-01-.01(2)(a), are not subject to any requirement of Rule 0400-12-01-.02, .03 and .04, nor are such samples included in the quantity determinations of paragraph (e) of this rule and Rule 0400-12-01-.03(4)(e)6 when:

(I) The sample is being collected and prepared for transportation by the generator or sample collector; or

(II) The sample is being accumulated or stored by the generator or sample collector prior to transportation to a laboratory or testing facility; or

(III) The sample is being transported to the laboratory or testing facility for the purpose of conducting a treatability study.

(ii) The exemption in subpart (i) of this part is applicable to samples of hazardous waste being collected and shipped for the purpose of conducting treatability studies provided that:

(I) The generator or sample collector uses (in "treatability studies") no more than 10,000 kg of media contaminated with non-acute hazardous waste, 1000 kg of non-acute hazardous waste other than contaminated media, 1 kg of acute hazardous waste, 2500 kg of media contaminated with acute hazardous waste for each process being evaluated for each generated waste stream; and

(II) The mass of each sample shipment does not exceed 10,000 kg; the 10,000 kg quantity may be all media contaminated with non-acute hazardous waste, or may include 2500 kg of media contaminated with acute hazardous waste, 1000 kg of hazardous waste, and 1 kg of acute hazardous waste; and

(III) The sample must be packaged so that it will not leak, spill, or vaporize from its packaging during shipment and the requirements of subitem I or II of this part are met.

I. The transportation of each sample shipment complies with U.S. Department of Transportation (DOT), U.S. Postal Service (USPS), or any other applicable shipping requirements; or

II. If the DOT, USPS, or other shipping requirements do not apply to the shipment of the sample, the following information must accompany the sample:

A. The name, mailing address, and telephone number of the originator of the sample;

B. The name, address, and telephone number of the facility that will perform the treatability study;

C. The quantity of the sample;

D. The date of shipment; and

E. A description of the sample, including its Hazardous Waste Code.

(IV) The sample is shipped to a laboratory or testing facility which is exempt under part 6 of this subparagraph or has an appropriate permit or interim status.

(V) The generator or sample collector maintains the following records for a period ending 3 years after completion of the treatability study:

I. Copies of the shipping documents;

II. A copy of the contract with the facility conducting the treatability study;

III. Documentation showing:

A. The amount of waste shipped under this exemption;

B. The name, address, and Installation Identification Number of the laboratory or testing facility that received the waste;

C. The date the shipment was made; and

D. Whether or not unused samples and residues were returned to the generator.

(VI) The generator reports the information required under subitem (ii)(V)III of this part in its annual report.

(iii) The Commissioner may grant requests on a case-by-case basis for up to an additional two years for treatability studies involving bioremediation. The Commissioner may grant requests on a case-by-case basis for quantity limits in excess of those specified in items (I) and (II) of this subpart and subpart 6(iv) of this subparagraph, for up to an additional 5000 kg of media contaminated with

non-acute hazardous waste, 500 kg of non-acute hazardous waste, 2500 kg of media contaminated with acute hazardous waste and 1 kg of acute hazardous waste:

(I) In response to requests for authorization to ship, store and conduct treatability studies on additional quantities in advance of commencing treatability studies. Factors to be considered in reviewing such requests include the nature of the technology, the type of process (e.g., batch versus continuous), size of the unit undergoing testing (particularly in relation to scale-up considerations), the time/quantity of material required to reach steady state operating conditions, or test design considerations such as mass balance calculations.

(II) In response to requests for authorization to ship, store and conduct treatability studies on additional quantities after initiation or completion of initial treatability studies, when: There has been an equipment or mechanical failure during the conduct of a treatability study; there is a need to verify the results of a previously conducted treatability study; there is a need to study and analyze alternative techniques within a previously evaluated treatment process; or there is a need to do further evaluation of an ongoing treatability study to determine final specifications for treatment.

(III) The additional quantities and timeframes allowed in items (I) and (II) of this subpart are subject to all the provisions in subpart (i) and items (III) through (VI) of subpart (ii) of this part. The generator or sample collector must apply to the Commissioner and provide in writing the following information:

I. The reason why the generator or sample collector requires additional time or quantity of sample for treatability study evaluation and the additional time or quantity needed;

II. Documentation accounting for all samples of hazardous waste from the waste stream which have been sent for or undergone treatability studies including the date each previous sample from the waste stream was shipped, the quantity of each previous shipment, the laboratory or testing facility to which it was shipped, what treatability study processes were conducted on each sample shipped, and the available results on each treatability study;

III. A description of the technical modifications or change in specifications which will be evaluated and the expected results;

IV. If such further study is being required due to equipment or mechanical failure, the applicant must include information regarding the reason for the failure or breakdown and also include what procedures or equipment improvements have been made to protect against further breakdowns; and

V. Such other information that the Commissioner considers necessary.

6. Samples Undergoing Treatability Studies at Laboratories and Testing Facilities

Samples undergoing treatability studies and the laboratory or testing facility conducting such treatability studies (to the extent such facilities are not otherwise subject to the requirements under this Chapter) are not subject to any requirement of this Chapter

provided that the conditions of subparts (i) through (xi) of this part are met. A mobile treatment unit (MTU) may qualify as a testing facility subject to subparts (i) through (xi) of this part. Where a group of MTUs are located at the same site, the limitations specified in subparts (i) through (xi) of this part apply to the entire group of MTUs collectively as if the group were one MTU.

(i) No less than 45 days before conducting treatability studies, the facility notifies the Commissioner, in writing that it intends to conduct treatability studies under this paragraph.

(ii) The laboratory or testing facility conducting the treatability study has an Installation Identification Number.

(iii) No more than a total of 10,000 kg of "as received" media contaminated with non-acute hazardous waste, 2500 kg of media contaminated with acute hazardous waste or 250 kg of other "as received" hazardous waste is subject to initiation of treatment in all treatability studies in any single day. "As received" waste refers to the waste as received in the shipment from the generator or sample collector.

(iv) The quantity of "as received" hazardous waste stored at the facility for the purpose of evaluation in treatability studies does not exceed 10,000 kg, the total of which can include 10,000 kg of media contaminated with non-acute hazardous waste, 2500 kg of media contaminated with acute hazardous waste, 1000 kg of non-acute hazardous wastes other than contaminated media, and 1 kg of acute hazardous waste. This quantity limitation does not include treatment materials (including nonhazardous solid waste) added to "as received" hazardous waste.

(v) No more than 90 days have elapsed since the treatability study for the sample was completed, or no more than one year (two years for treatability studies involving bioremediation) have elapsed since the generator or sample collector shipped the sample to the laboratory or testing facility, whichever date first occurs. Up to 500 kg of treated material from a particular waste stream from treatability studies may be archived for future evaluation up to five years from the date of initial receipt. Quantities of materials archived are counted against the total storage limit for the facility.

(vi) The treatability study does not involve the placement of hazardous waste on the land or open burning of hazardous waste.

(vii) The facility maintains records for 3 years following completion of each study that show compliance with the treatment rate limits and the storage time and quantity limits. The following specific information must be included for each treatability study conducted:

(I) The name, address, and Installation Identification Number of the generator or sample collector of each waste sample;

(II) The date the shipment was received;

(III) The quantity of waste accepted;

(IV) The quantity of "as received" waste in storage each day;

(V) The date the treatment study was initiated and the amount of "as received" waste introduced to treatment each day;

(VI) The date the treatability study was concluded;

(VII) The date any unused sample or residues generated from the treatability study were returned to the generator or sample collector or, if sent to a designated facility, the name of the facility and the Installation Identification Number.

(viii) The facility keeps, on-site, a copy of the treatability study contract and all shipping papers associated with the transport of treatability study samples to and from the facility for a period ending 3 years from the completion date of each treatability study.

(ix) The facility prepares and submits a report to the Commissioner by March 15 of each year that includes the following information for the previous calendar year:

(I) The name, address, and Installation Identification Number of the facility conducting the treatability studies;

(II) The types (by process) of treatability studies conducted;

(III) The names and addresses of persons for whom studies have been conducted (including their Installation Identification Numbers);

(IV) The total quantity of waste in storage each day;

(V) The quantity and types of waste subjected to treatability studies;

(VI) When each treatability study was conducted;

(VII) The final disposition of residues and unused sample from each treatability study.

(x) The facility determines whether any unused sample or residues generated by the treatability study are hazardous waste under subparagraph (1)(c) of this rule and, if so, are subject to Chapter 0400-12-01, unless the residues and unused samples are returned to the sample originator under exemption under part 5 of this subparagraph.

(xi) The facility notifies the Commissioner by letter when the facility is no longer planning to conduct any treatability studies at the site.

7. Dredged material that is not a hazardous waste. Dredged material that is subject to the requirements of a permit that has been issued under 404 of the Federal Water Pollution Control Act (33 U.S.C. 1344) or section 103 of the Marine Protection, Research, and Sanctuaries Act of 1972 (33 U.S.C. 1413) is not a hazardous waste. For this part 7, the following definitions apply:

(i) The term "dredged material" has the same meaning as defined in 40 CFR 232.2;

(ii) The term "permit" means:

(I) A permit issued by the U.S. Army Corps of Engineers (Corps) or an approved State under section 404 of the Federal Water Pollution Control Act (33 U.S.C. 1344);

(II) A permit issued by the Corps under section 103 of the Marine Protection, Research, and Sanctuaries Act of 1972 (33 U.S.C. 1413); or

(III) In the case of Corps civil works projects, the administrative equivalent of the permits referred to in items 7(ii)(I) and (II) of this subparagraph, as

provided for in Corps regulations (for example, see 33 CFR 336.1, 336.2, and 337.6).

(e) Special Requirements For Hazardous Waste Generated By Conditionally Exempt Small Quantity Generators [40 CFR 261.5]

1. A generator is a conditionally exempt small quantity generator in a calendar month if he generates no more than 100 kilograms of hazardous waste in that month.

2. Except for those wastes identified in parts 5, 6, 7, and 10 of this subparagraph, a conditionally exempt small quantity generator's hazardous wastes are not subject to regulation under Rules 0400-12-01-.03 through .10, provided the generator complies with the requirements of parts 6, 7 and 10 of this subparagraph.

3. When making the quantity determinations of this rule and Rule 0400-12-01-.03, the generator must include all hazardous waste that it generates, except hazardous waste that:

(i) Is exempt from regulation under parts (d)3 through 6, subparts (f)1(iii), subpart (g)1(i), or subparagraph (h) of this paragraph; or

(ii) Is managed immediately upon generation only in on-site elementary neutralization units, wastewater treatment units, or totally enclosed treatment facilities as defined in Rule 0400-12-01-.01(2)(a); or

(iii) Is recycled, without prior storage or accumulation, only in an on-site process subject to regulation under subpart (f)3(ii) of this paragraph; or

(iv) Is used oil managed under the requirements of subpart (f)1(iv) of this paragraph and Rule 0400-12-01-.11; or

(v) Is spent lead-acid batteries managed under the requirements of Rule 0400-12-01-.09(7); or

(vi) Is universal waste managed under Rule 0400-12-01-.02(1)(j) and Rule 0400-12-01-.12; or

(vii) Is a hazardous waste that is an unused commercial chemical product (listed in Paragraph (4) of this rule or exhibiting one or more characteristics in paragraph (3) of this rule) that is generated solely as a result of a laboratory clean-out conducted at an eligible academic entity pursuant to paragraph (12) of Rule 0400-12-01-.03. For purposes of this provision, the term eligible academic entity shall have the meaning as defined in paragraph (12) of Rule 0400-12-01-.03.

(viii) Is managed immediately upon generation in a collection system (sewer system) where the wastewaters will mix with sanitary wastes at any point before reaching a publicly owned treatment works (POTW).

4. In determining the quantity of hazardous waste generated, a generator need not include:

(i) Hazardous waste when it is removed from on-site storage; or

(ii) Hazardous waste produced by on-site treatment (including reclamation) of his hazardous waste, so long as the hazardous waste that is treated was counted once; or

(iii) Spent materials that are generated, reclaimed, and subsequently reused on-site, so long as such spent materials have been counted once.

5. If a generator generates acute hazardous waste in a calendar month in quantities greater than set forth below, all quantities of that acute hazardous waste are subject to full regulation under Chapter 0400-12-01:

(i) A total of one kilogram of acute hazardous wastes listed in subparagraph (4)(b) or part (4)(d)5 of this rule.

(ii) A total of 100 kilograms of any residue or contaminated soil, waste, or other debris resulting from the cleanup of a spill, into or on any land or water, of any acute hazardous wastes listed in subparagraph (4)(b) or part (4)(d)5 of this rule.

(Comment: "Full regulation" means those regulations applicable to generators of 1000 kg or greater of hazardous waste in a calendar month.)

6. In order for acute hazardous wastes generated by a generator of acute hazardous wastes in quantities equal to or less than those set forth in subparts 5(i) or (ii) of this subparagraph to be excluded from full regulation under this subparagraph, the generator must comply with the following requirements:

(i) The generator must perform the hazardous waste determination of Rule 0400-12-01-.03(1)(b) and keep records thereof as required by Rule 0400-12-01-.03(5)(a)3;

(ii) The generator may accumulate acute hazardous waste on-site. If he accumulates at any time acute hazardous wastes in quantities greater than those set forth in subparts 5(i) or 5(ii) of this subparagraph, all of those accumulated wastes are subject to regulation under Chapter 0400-12-01. The time period of Rule 0400-12-01-.03(4)(e)2, for accumulation of wastes on-site, begins when the accumulated wastes exceed the applicable exclusion limit.

(iii) A conditionally exempt small quantity generator may either treat or dispose of his acute hazardous waste in an on-site facility or ensure delivery to an off-site treatment, storage or disposal facility, either of which, if located in the U.S., is:

(I) Permitted under Rule 0400-12-01-.07;

(II) In interim status under Rule 0400-12-01-.05 and 0400-12-01-.07;

(III) Authorized to manage hazardous waste by a State with a hazardous waste management program approved under 40 CFR Part 271;

(IV) Permitted, licensed, or registered by a State to manage municipal solid waste and, if managed in a municipal solid waste landfill, is subject to 40 CFR Part 258;

(V) Permitted, licensed, or registered by a State to manage non-municipal non-hazardous waste and, if managed in a non-municipal non-hazardous waste disposal unit after January 1, 1998, is subject to the requirements in 40 CFR Parts 257.5 through 257.30; or

(VI) A facility which:

I. Beneficially uses or reuses, or legitimately recycles or reclaims its waste; or

II. Treats its waste prior to beneficial use or reuse, or legitimate recycling or reclamation; or

(VII) For universal waste managed under Rule 0400-12-01-.12, a universal waste handler or destination facility subject to the requirements of Rule 0400-12-01-.12.

7. In order for hazardous waste generated by a conditionally exempt small quantity generator in quantities of 100 kilograms or less of hazardous waste during a calendar month to be excluded from full regulation under this subparagraph, the generator must comply with the following requirements:

(i) The conditionally exempt small quantity generator must perform the hazardous waste determination of Rule 0400-12-01-.03(1)(b) and keep records thereof as required by Rule 0400-12-01-.03(5)(a)3.

(ii) The conditionally exempt small quantity generator may accumulate hazardous waste on-site. If he accumulates at any time more than a total of 1000 kilograms of his hazardous wastes, all of those accumulated wastes are subject to regulation under the special provisions of Rule 0400-12-01-.03 applicable to generators of greater than 100 kg and less than 1000 kg of hazardous waste in a calendar month as well as the requirements of Rule 0400-12-01-.04 through 0400-12-01-.10. The time period of Rule 0400-12-01-.03(4)(e)6 for accumulation of wastes on-site begins for a conditionally exempt small quantity generator when the accumulated wastes exceed 1000 kilograms;

(iii) A conditionally exempt small quantity generator may either treat or dispose of his hazardous waste in an on-site facility or ensure delivery to an off-site treatment, storage or disposal facility, either of which, if located in the U.S., is:

(I) Permitted under Rule 0400-12-01-.07;

(II) In interim status under Rules 0400-12-01-.05 and 0400-12-01-.07;

(III) Authorized to manage hazardous waste by a State with a hazardous waste management program approved under 40 CFR Part 271;

(IV) Permitted, licensed, or registered by a State to manage municipal solid waste and, if managed in a municipal solid waste landfill, is subject to 40 CFR Part 258;

(V) Permitted, licensed, or registered by a State to manage non-municipal non-hazardous waste and, if managed in a non-municipal non-hazardous waste disposal unit after January 1, 1998, is subject to the requirements in 40 CFR Parts 257.5 through 257.30; or

(VI) A facility which:

I. Beneficially uses or reuses or legitimately recycles or reclaims its waste; or

II. Treats its waste prior to beneficial use or reuse, or legitimate recycling or reclamation; or

(VII) For universal waste managed under Rule 0400-12-01-.12, a universal waste handler or destination facility subject to the requirements of Rule 0400-12-01-.12.

(iv) Management of Containers with Liquids

(I) A container holding hazardous waste volatile liquids must always be closed during storage, except when it is necessary to add or remove waste.

(II) A container holding hazardous waste liquids must not be opened, handled, or stored in a manner which may rupture the container or cause it to leak.

(III) The facility may take reasonable measures that deviate from this standard if required for safety due to the intrinsic nature of the container's contents.

8. Hazardous waste subject to the reduced requirements of this subparagraph may be mixed with non-hazardous waste and remain subject to these reduced requirements even though the resultant mixture exceeds the quantity limitations identified in this subparagraph, unless the mixture meets any of the characteristics of hazardous waste identified in paragraph (3) of this rule.

9. If any person mixes a solid waste with a hazardous waste that exceeds a quantity exclusion level of this subparagraph, the mixture is subject to full regulation.

10. If a conditionally exempt small quantity generator's wastes are mixed with used oil, the mixture is subject to Rule 0400-12-01-.11. Any material produced from such a mixture by processing, blending, or other treatment is also so regulated.

(NOTE: Any used oil that is not recycled is a solid waste subject to a hazardous waste determination per Rule 0400-12-01-.03(1)(b).)

(f) Requirements for recyclable material [40 CFR 261.6]

1. (i) Hazardous wastes that are recycled are subject to the requirements for generators, transporters, and storage facilities of parts 2 and 3 of this subparagraph, except for the materials listed in subparts (ii) and (iii) of this part. Hazardous wastes that are recycled will be known as "recyclable materials."

(ii) The following recyclable materials are not subject to the requirements of this subparagraph but are regulated under paragraphs (3), (6), (7), (8), (13) and (14) of Rule 0400-12-01-.09 and all applicable provisions in Rules 0400-12-01-.07 and .10:

(I) Recyclable materials used in a manner constituting disposal (Rule 0400-12-01-.09(3);

(II) Hazardous wastes burned (as defined in Rule 0400-12-01-.09(8)(a)1) in boilers and industrial furnaces that are not regulated under paragraph (15) of Rule 0400-12-01-.05 or Rule 0400-12-01-.06;

(III) Recyclable materials from which precious metals are reclaimed (Rule 0400-12-01-.09(6));

(IV) Spent lead-acid batteries that are being reclaimed (Rule 0400-12-01-.09(7).

(iii) The following recyclable materials are not subject to regulation under Chapter 0400-12-01:

(I) Industrial ethyl alcohol that is reclaimed except that, unless provided otherwise in an international agreement as specified in Rule 0400-12-01-.03(6)(i):

I. A person initiating a shipment for reclamation in a foreign country, and any intermediary arranging for the shipment, must comply with the requirements applicable to a primary exporter in Rule 0400-12-01-.03(6)(d), (g)1(i) through (iv) and (vi), (g)2, and (h), export such materials only upon consent of the receiving country and in conformance with the EPA Acknowledgment of Consent as defined in Rule 0400-12-01-.03(6), and provide a copy of the EPA Acknowledgment of Consent to the shipment to the transporter transporting the shipment for export;

II. Transporters transporting a shipment for export may not accept a shipment if he knows the shipment does not conform to the EPA Acknowledgment of Consent, must ensure that a copy of the EPA Acknowledgment of Consent accompanies the shipment and must ensure that it is delivered to the facility designated by the person initiating the shipment.

(II) Scrap metal that is not excluded under subpart (d)1(xv) of this paragraph;

(III) Fuels produced from the refining of oil-bearing hazardous waste along with normal process streams at a petroleum refining facility if such wastes result from normal petroleum refining, production, and transportation practices (this exemption does not apply to fuels produced from oil recovered from oil-bearing hazardous waste, where such recovered oil is already excluded under Rule 0400-12-01-.02(1)(d)1(xii));

(IV) I. Hazardous waste fuel produced from oil-bearing hazardous wastes from petroleum refining, production, or transportation practices, or produced from oil reclaimed from such hazardous wastes, where such hazardous wastes are reintroduced into a process that does not use distillation or does not produce products from crude oil so long as the resulting fuel meets the used oil specification under Rule 0400-12-01-.11(2)(b) and so long as no other hazardous wastes are used to produce the hazardous waste fuel;

II. Hazardous waste fuel produced from oil-bearing hazardous waste from petroleum refining production, and transportation practices, where such hazardous wastes are reintroduced into a refining process after a point at which contaminants are removed, so long as the fuel meets the used oil fuel specification under Rule 0400-12-01-.11(2)(b); and

III. Oil reclaimed from oil-bearing hazardous wastes from petroleum refining, production, and transportation practices, which reclaimed oil is burned as a fuel without reintroduction to a refining process, so long as the reclaimed oil meets the used oil fuel specification under Rule 0400-12-01-.11(2)(b).

(iv) Used oil that is recycled and is also a hazardous waste solely because it exhibits a hazardous characteristic is not subject to the requirements of Rule 0400-12-01-.01 through .06, .09, and .10, but is regulated under Rule 0400-12-01-.11. Used oil that is recycled includes any used oil which is reused, following its original use, for any purpose (including the purpose for which the oil was originally used). Such term includes, but is not limited to, oil which is re-refined, reclaimed, burned for energy recovery, or reprocessed.

(v) (Reserved) [40 CFR 261.6(a)(5)]

2. Generators and transporters of recyclable materials are subject to the applicable requirements of Rule 0400-12-01-.03 and .04, except as provided in part 1 of this subparagraph.

3. (i) Owners and operators of facilities that store recyclable materials before they are recycled are regulated under all applicable provisions of paragraphs (1) through (12), (27), (28) and (29) of Rule 0400-12-01-.05 and paragraphs (1) through (12), (30), (31) and (32) of Rule 0400-12-01-.06, and under Rules 0400-12-01-.07, .09, and .10, and the notification requirements under Rule 0400-12-01-.07(2)(b) and (d), except as provided in part 1 of this subparagraph. (The recycling process itself is exempt from regulation except as provided in Rule 0400-12-01-.02(1)(f)4.)

(ii) Owners or operators of facilities that recycle recyclable materials without storing them before they are recycled are subject to the following requirements, except as provided in part 1 of this subparagraph:

(I) Such owners or operators must notify the Division Director of their activities using forms provided by the Department and completed per accompanying instructions;

(II) Such owners or operators must comply with Rule 0400-12-01-.05(5)(b) and (c) (dealing with the use of the manifest and manifest discrepancies);

(III) Rule 0400-12-01-.02(1)(f)4.

4. Owners or operators of facilities subject to the permitting requirements with hazardous waste management units that recycle hazardous wastes are subject to the requirements of paragraphs (27) and (28) of Rule 0400-12-01-.05 and paragraphs (30) and (31) of Rule 0400-12-01-.06.

5. Generators of recyclable materials must notify the Department describing the recyclable materials they generate, how such materials are generated, and how they are managed. Such notifications must be filed with the Department within 90 days of the effective date of this part (for existing generators) or within 90 days of the date a generator first becomes subject to this subparagraph (for new generators). Such notification must be submitted on forms provided by the Department. The form must be completed according to the accompanying instructions.

(g) Residues of hazardous waste in empty containers [40 CFR 261.7]

1. (i) Any hazardous waste remaining in either (1) an empty container or (2) an inner liner removed from an empty container, as defined in part 2 of this subparagraph, is not subject to regulation under these rules.

(ii) Any hazardous waste in either (1) a container that is not empty or (2) an inner liner removed from a container that is not empty, as defined in part 2 of this subparagraph, is subject to regulation under these rules.

2. (i) A container or an inner liner removed from a container that has held any hazardous waste, except a waste that is a compressed gas or that is identified as an acute hazardous waste listed in subparagraph (4)(b) or part (4)(d)5 of this rule is empty if:

(I) All wastes have been removed that can be removed using the practices commonly employed to remove materials from that type of container, e.g., pouring, pumping, and aspirating, and

(II) No more than 2.5 centimeters (one inch) of residue remain on the bottom of the container or inner liner, or

(III) I. No more than 3 percent by weight of the total capacity of the container remains in the container or inner liner if the container is less than or equal to 119 gallons in size, or

II. No more than 0.3 percent by weight of the total capacity of the container remains in the container or inner liner if the container is greater than 119 gallons in size.

(ii) A container that has held a hazardous waste that is a compressed gas is empty when the pressure in the container approaches atmospheric.

(iii) A container or an inner liner removed from a container that has held an acute hazardous waste listed in subparagraph (4)(b) or part (4)(d)5 of this subparagraph is empty if:

(I) The container or inner liner has been triple rinsed using a solvent capable of removing the commercial chemical product or manufacturing chemical intermediate;

(II) The container or inner liner has been cleaned by another method that has been shown in the scientific literature, or by tests conducted by the generator, to achieve equivalent removal; or

(III) In the case of a container, the inner liner that prevented contact of the commercial chemical product or manufacturing chemical intermediate with the container, has been removed.

(h) PCB wastes regulated under Toxic Substance Control Act [40 CFR 261.8]

The disposal of PCB-containing dielectric fluid and electric equipment containing such fluid authorized for use and regulated under part 761 and that are hazardous only because they fail the test for the Toxicity Characteristic (Hazardous Waste Codes D018 through D043 only) are exempt from regulation under Rule 0400-12-01-.02 through .08 and .10.

(i) Management of Excluded Wastes

Nothing in these rules shall exclude persons whose waste is nonhazardous or otherwise excluded from these rules from the requirements of the "Tennessee Solid Waste Disposal Act" (T.C.A. §68-211-101 et seq.) and applicable regulations or from other applicable State, local or Federal laws.

(j) Requirements for Universal Waste [40 CFR 261.9]

The wastes listed in Rule 0400-12-01-.12(1)(a) are exempt from regulation under Rules 0400-12-01-.03 through .07, .09 and .10 except as specified in Rule 0400-12-01-.12 and, therefore, are not fully regulated as hazardous waste.

(2) Criteria for Identifying the Characteristics of Hazardous Waste and for Listing Hazardous Waste [40 CFR 261 Subpart B]

(a) Criteria for Identifying the Characteristics of Hazardous Waste [40 CFR 261.10]

1. The Board shall identify and define a characteristic of hazardous waste in paragraph (3) only upon determining that:

(i) A solid waste that exhibits the characteristic may:

(I) Cause, or significantly contribute to, an increase in mortality or an increase in serious irreversible, or incapacitating reversible, illness; or

(II) Pose a substantial present or potential hazard to human health or the environment when it is improperly treated, stored, transported, disposed of or otherwise managed; and

(ii) The characteristic can be:

(I) Measured by an available standardized test method which is reasonably within the capability of generators of solid waste or private sector laboratories that are available to serve generators of solid waste; or

(II) Reasonably detected by generators of solid waste through their knowledge of their waste.

(b) Criteria for Listing Hazardous Waste [40 CFR 261.11]

1. The Board shall list a solid waste as a hazardous waste only upon determining that the solid waste meets one of the following criteria:

(i) It exhibits any of the characteristics of hazardous waste identified in paragraph (3).

(ii) It has been found to be fatal to humans in low doses or, in the absence of data on human toxicity, it has been shown in studies to have an oral LD 50 toxicity (rat) of less than 50 milligrams per kilogram, an inhalation LC 50 toxicity (rat) of less than 2 milligrams per liter, or a dermal LD 50 toxicity (rabbit) of less than 200 milligrams per kilogram or is otherwise capable of causing or significantly contributing to an increase in serious irreversible, or incapacitating reversible, illness. (Waste listed in accordance with these criteria will be designated Acute Hazardous Waste.)

(iii) It contains any of the toxic constituents listed in paragraph (5) Appendix VIII and, after considering the following factors, the Commissioner concludes that the waste is capable of posing a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported or disposed of, or otherwise managed:

(I) The nature of the toxicity presented by the constituent;

(II) The concentration of the constituent in the waste;

(III) The potential of the constituent or any toxic degradation product of the constituent to migrate from the waste into the environment under the types of improper management considered in item (VII) below;

(IV) The persistence of the constituent or any toxic degradation product of the constituent;

(V) The potential for the constituent or any toxic degradation product of the constituent to degrade into non-harmful constituents and the rate of degradation;

(VI) The degree to which the constituent or any degradation product of the constituent bioaccumulates in ecosystems;

(VII) The plausible types of improper management to which the waste could be subjected;

(VIII) The quantities of the waste generated at individual generation sites or on a regional or national basis;

(IX) The nature and severity of the human health and environmental damage that has occurred as a result of the improper management of wastes containing the constituent;

(X) Action taken by other governmental agencies or regulatory programs based on the health or environmental hazard posed by the waste or waste constituent; and

(XI) Such other factors as may be appropriate.

(Note: Substances will be listed on Appendix VIII only if they have been shown in scientific studies to have toxic, carcinogenic, mutagenic or teratogenic effects on humans or other life forms.)

(Note: Wastes listed in accordance with these criteria will be designated Toxic wastes.)

2. The Board may list classes or types of solid waste as hazardous waste if it has reason to believe that individual wastes, within the class or type of waste, typically or frequently are hazardous under the definition of hazardous waste found in Section 68-212-104 of the Act.

3. The Board will use the criteria for listing specified in this subparagraph to establish the exclusion limits referred to in part (1)(e)3 of this rule.

(3) Characteristics of Hazardous Waste [40 CFR 261 Subpart C]

(a) General [40 CFR 261.20]

1. A solid waste, as defined in subparagraph (1)(b) of this rule, which is not excluded from regulation as a hazardous waste under part (1)(d)2 of this rule, is a hazardous waste if it exhibits any of the characteristics identified in this paragraph.

(Comment: Rule 0400-12-01-.03(1)(b) sets forth the generator's responsibility to determine whether his waste exhibits one or more of the characteristics identified in this paragraph.)

2. A hazardous waste which is identified by a characteristic in this paragraph is assigned every Hazardous Waste Code that is applicable as set forth in this paragraph. This code must be used in complying with the notification requirements of Rule 0400-12-01-.03(2) and all applicable recordkeeping and reporting requirements under Rules 0400-12-01-.03 through .07 and Rule 0400-12-01-.10.

3. For purposes of this paragraph, the Commissioner will consider a sample obtained using any of the applicable sampling methods specified in paragraph (5) Appendix I to be a representative sample within the meaning of Rule 0400-12-01-.01.

(Comment: Since the appendix I sampling methods are not being formally adopted by the Board, a person who desires to employ an alternative sampling method is not required to

demonstrate the equivalency of his method under the procedures set forth in Rule 0400-12-01-.01(3).)

(b) Characteristic of Ignitability [40 CFR 261.21]

1. A solid waste exhibits the characteristic of ignitability if a representative sample of the waste has any of the following properties:

(i) It is a liquid, other than an aqueous solution containing less than 24 percent alcohol by volume and has flash point less than 60° C (140° F), as determined by a Pensky-Martens Closed Cup Tester, using the test method specified in ASTM Standard D 93-79 or D 93-80 (see 40 CFR 260.11; Rule 0400-12-01-.01(2)(b)1), or a Setaflash Closed Cup Tester, using the test method specified in ASTM Standard D 3278-78 (see 40 CFR 260.11; Rule 0400-12-01-.01(2)(b)1).

(ii) It is not a liquid and is capable, under standard temperature and pressure, of causing fire through friction, absorption of moisture or spontaneous chemical changes and, when ignited, burns so vigorously and persistently that it creates a hazard.

(iii) It is an ignitable compressed gas.

(I) The term "compressed gas" shall designate any material or mixture having in the container an absolute pressure exceeding 40 p.s.i. at 70 [deg] F or, regardless of the pressure at 70 [deg] F, having an absolute pressure exceeding 104 p.s.i. at 130 [deg] F; or any liquid flammable material having a vapor pressure exceeding 40 p.s.i. absolute at 100 [deg] F as determined by ASTM Test D-323.

(II) A compressed gas shall be characterized as ignitable if any one of the following occurs:

I. Either a mixture of 13 percent or less (by volume) with air forms a flammable mixture or the flammable range with air is wider than 12 percent regardless of the lower limit. These limts shall be determined at atmospheric temperature and pressure. The method of sampling and test procedure shall be acceptable to the Bureau of Explosives and approved by the director, Pipeline and Hazardous Materials Technology, U. S. Department of Transportation (see Note 2).

II. Using the Bureau of Explosives' Flame Projection Apparatus (see Note 1), the flame projects more than 18 inches beyond the ignition source with valve opened fully or the flame flashes back and burns at the valve with any degree of valve opening.

III. Using the Bureau of Explosives' Open Drum Apparatus (see Note 1), there is any significant propagation of flame away from the ignition source.

IV. Using the Bureau of Explosives' Closed Drum Apparatus (see Note 1), there is any explosion of the vapor-air mixture in the drum.

(iv) It is an oxidizer.

An oxidizer for the purpose of this rule is a substance such as a chlorate, permanganate, inorganic peroxide, or a nitrate, that yields oxygen readily to stimulate the combustion of organic matter (see Note 4).

(I) An organic compound containing the bivalent – O – O – structure and which may be considered a derivative of hydrogen peroxide where one or more of the hydrogen atoms have been replaced by organic radicals must be classed as an organic peroxide unless:

I. The material meets the definition of a Class A explosive or a Class B explosive, as defined in subpart (3)(d)1(viii) of this rule, in which case it must be classed as an explosive,

II. The material is forbidden to be offered for transportation according to 49 CFR 172.101 and 49 CFR 173.21,

III. It is determined that the predominant hazard of the material containing an organic peroxide is other than that of an organic peroxide, or

IV. According to data on file with the Pipeline and Hazardous Materials Safety Administration in the U. S. Department of Transportation (see Note 3), it has been determined that the material does not present a hazard in transportation.

2. A solid waste that exhibits the characteristic of ignitability has the Hazardous Waste Code of D001.

Note 1: A description of the Bureau of Explosives' Flame Projection Apparatus, Open Drum Apparatus, Closed Drum Apparatus, and method of tests may be procured from the Bureau of Explosives.

Note 2: As part of a U. S. Department of Transportation (DOT) reorganization, the Office of Hazardous Materials Technology (OHMT), which was the office listed in the 1980 publication of 49 CFR 173.300 for the purposes of approving sampling and test procedures for a flammable gas, ceased operations on February 20, 2005. OHMT programs have moved to the Pipeline and Hazardous Materials Safety Administration (PHMSA) in the DOT.

Note 3: As part of a U. S. Department of Transportation (DOT) reorganization, the Research and Special Programs Administration (RSPA), which was the office listed in the 1980 publication of 49 CFR 173.151a for the purposes of determining that a material does not present a hazard in transport, ceased operations on February 20, 2005. RSPA programs have moved to the Pipeline and Hazardous Materials Safety Administration (PHMSA) in the DOT.

Note 4: The DOT regulatory definition of an oxidizer was contained in Sec. 173.151 of 49 CFR, and the definition of an organic peroxide was contained in paragraph 173.151a. An organic peroxide is a type of oxidizer.

(c) Characteristic of Corrosivity [40 CFR 261.22]

1. A solid waste exhibits the characteristic of corrosivity if a representative sample of the waste has either of the following properties:

(i) It is aqueous and has a pH less than or equal to 2 or greater than or equal to 12.5, as determined by a pH meter using Method 9040C in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA Publication SW-846. (See 40 CFR 260.11; Rule 0400-12-01-.01(2)(b)1.)

(ii) It is a liquid and corrodes steel (SAE 1020) at a rate greater than 6.35 mm (0.250 inch) per year at a test temperature of 55°C (130°F) as determined by Method

1110A in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA Publication SW-846. (See 40 CFR 260.11; Rule 0400-12-01-.01(2)(b)1.)

2. A solid waste that exhibits the characteristic of corrosivity has the Hazardous Waste Code of D002.

(d) Characteristic of Reactivity [40 CFR 261.23]

1. A solid waste exhibits the characteristic of reactivity if a representative sample of the waste has any of the following properties:

(i) It is normally unstable and readily undergoes violent change without detonating.

(ii) It reacts violently with water.

(iii) It forms potentially explosive mixtures with water.

(iv) When mixed with water, it generates toxic gases, vapors or fumes in a quantity sufficient to present a danger to human health or the environment.

(v) It is a cyanide or sulfide bearing waste which, when exposed to pH conditions between 2 and 12.5, can generate toxic gases, vapors or fumes in a quantity sufficient to present a danger to human health or the environment.

(vi) It is capable of detonation or explosive reaction if it is subjected to a strong initiating source or if heated under confinement.

(vii) It is readily capable of detonation or explosive decomposition or reaction at standard temperature and pressure.

(viii) It is a forbidden explosive as defined in 49 CFR 173.54, or is a Division 1.1, 1.2 or 1.3 explosive as defined in 49 CFR 173.50 and 173.53.

2. A solid waste that exhibits the characteristic of reactivity has the Hazardous Waste Code of D003.

(e) Toxicity Characteristic [40 CFR 261.24]

1. A solid waste (except manufactured gas plant waste) exhibits the characteristic of toxicity if, using the Toxicity Characteristic Leaching Procedure, test Method 1311 in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA Publication SW-846, (see 40 CFR 260.11; Rule 0400-12-01-.01(2)(b)1) the extract from a representative sample of the waste contains any of the contaminants listed in Table 1 at the concentration equal to or greater than the respective value given in that table. Where the waste contains less than 0.5 percent filterable solids, the waste itself, after filtering using the methodology outlined in Method 1311, is considered to be the extract for the purpose of this subparagraph.

2. A solid waste that exhibits the characteristic of toxicity has the Hazardous Waste Code specified in Table 1 which corresponds to the toxic contaminant causing it to be hazardous.

Table 1. – Maximum Concentration of Contaminants for the Toxicity Characteristic

HW Code No. [1]	Contaminant	CAS No. [2]	Regulatory Level (mg/L)
D004	Arsenic	7440-38-2	5.0

D005	Barium	7440-39-3	100.0
D018	Benzene	71-43-2	0.5
D006	Cadmium	7440-43-9	1.0
D019	Carbon tetrachloride	56-23-5	0.5
D020	Chlordane	57-74-9	0.03
D021	Chlorobenzene	108-90-7	100.0
D022	Chloroform	67-66-3	6.0
D007	Chromium	7440-47-3	5.0
D023	o-Cresol	95-48-7	[4] 200.0
D024	m-Cresol	108-39-4	[4] 200.0
D025	p-Cresol	106-44-5	[4] 200.0
D026	Cresol		[4] 200.0
D016	2,4-D	94-75-7	10.0
D027	1,4-Dichlorobenzene	106-46-7	7.5
D028	1,2-Dichloroethane	107-06-2	0.5
D029	1,1-Dichloroethylene	75-35-4	0.7
D030	2,4-Dinitrotoluene	121-14-2	[3] 0.13
D012	Endrin	72-20-8	0.02
D031	Heptachlor (and its epoxide)	76-44-8	0.008
D032	Hexachlorobenzene	118-74-1	[3] 0.13
D033	Hexachlorobutadiene	87-68-3	0.5
D034	Hexachloroethane	67-72-1	3.0
D008	Lead	7439-92-1	5.0
D013	Lindane	58-89-9	0.4
D009	Mercury	7439-97-6	0.2
D014	Methoxychlor	72-43-5	10.0
D035	Methyl ethyl ketone	78-93-3	200.0
D036	Nitrobenzene	98-95-3	2.0
D037	Pentachlorophenol	87-86-5	100.0
D038	Pyridine	110-86-1	[3] 5.0
D010	Selenium	7782-49-2	1.0
D011	Silver	7440-22-4	5.0
D039	Tetrachloroethylene	127-18-4	0.7
D015	Toxaphene	8001-35-2	0.5
D040	Trichloroethylene	79-01-6	0.5
D041	2,4,5-Trichlorophenol	95-95-4	400.0

D042	2,4,6-Trichlorophenol	88-06-2	2.0
D017	2,4,5-TP (Silvex)	93-72-1	1.0
D043	Vinyl chloride	75-01-4	0.2

FOOTNOTE: [1]Hazardous waste number.
FOOTNOTE: [2]Chemical abstracts service number.
FOOTNOTE: [3]Quantitation limit is greater than the calculated regulatory level. The quantitation limit therefore becomes the regulatory level.
FOOTNOTE: [4]If o-, m-, and p-Cresol concentrations cannot be differentiated, the total cresol (D026) concentration is used. The regulatory level of total cresol is 200 mg/l.

(4) Lists of Hazardous Wastes [40 CFR 261 Subpart D]

(a) General [40 CFR 261.30]

1. A solid waste is a hazardous waste if it is listed in this paragraph, unless it has been excluded from this list under Rule 0400-12-01-.01(3).

2. The Board will indicate its basis for listing the classes or types of wastes listed in this paragraph by employing one or more of the following Hazard Codes:

Ignitable Waste	(I)
Corrosive Waste	(C)
Reactive Waste	(R)
Toxicity Characteristic Waste	(E)
Acute Hazardous Waste	(H)
Toxic Waste	(T)

Paragraph (5) Appendix VII identifies the constituent which caused the Board to list the waste as a Toxicity Characteristic Waste (E) or Toxic Waste (T) in subparagraphs (b) and (c) of this paragraph.

3. Each hazardous waste listed in this paragraph is assigned a Hazardous Waste Code which precedes the name of the waste. This Code must be used in complying with the notification requirements of Rule 0400-12-01-.03(2) and certain recordkeeping and reporting requirements under Rules 0400-12-01-.03 through .07 and Rules 0400-12-01-.09 and 0400-12-01-.10.

4. The following hazardous wastes listed in subparagraph (b) of this paragraph are subject to the exclusion limits for acutely hazardous wastes established in subparagraph (1)(e) of this rule: Hazardous Wastes Codes F020, F021, F022, F023, F026, and F027.

(b) Hazardous Wastes from Non-specific Sources [40 CFR 261.31]

1. The following solid wastes are listed hazardous wastes from non-specific sources unless they are excluded under subparagraphs (a) and (c) of Rule 0400-12-01-.01(3) and listed in paragraph (5) Appendix IX.

Industry and Hazardous Waste Code	Hazardous Waste	Hazard Code

Generic:		
F001	The following spent halogenated solvents used in degreasing: Tetrachloroethylene, trichloroethylene, methylene chloride, 1,1,1-trichloroethane, carbon tetrachloride, and chlorinated fluorocarbons; all spent solvent mixtures/blends used in degreasing containing, before use, a total of ten percent or more (by volume) of one or more of the above halogenated solvents or those solvents listed in F002, F004, and F005; and still bottoms from the recovery of these spent solvents and spent solvent mixtures.	(T)
F002	The following spent halogenated solvents: Tetrachloroethylene, methylene chloride, trichloroethylene, 1,1,1-trichloroethane, chlorobenzene, 1,1,2-trichloro-1,2,2-trifluoroethane, ortho-dichlorobenzene, trichlorofluoromethane, and 1,1,2-trichloroethane; all spent solvent mixtures/blends containing, before use, a total of ten percent or more (by volume) of one or more of the above halogenated solvents or those listed in F001, F004, or F005; and still bottoms from the recovery of these spent solvents and spent solvent mixtures.	(T)
F003	The following spent non-halogenated solvents: Xylene, acetone, ethyl acetate, ethyl benzene, ethyl ether, methyl isobutyl ketone, n-butyl alcohol, cyclohexanone, and methanol; all spent solvent mixtures/blends containing, before use, only the above spent non-halogenated solvents; and all spent solvent mixtures/blends containing, before use, one or more of the above non-halogenated solvents, and, a total of ten percent or more (by volume) of one or more of those solvents listed in F001, F002, F004, and F005; and still bottoms from the recovery of these spent solvents and spent solvent mixtures.	(I)
F004	The following spent non-halogenated solvents: Cresols and cresylic acid, and nitrobenzene; all spent solvent mixtures/blends containing, before use, a total of ten percent or more (by volume) of one or more of the above non-halogenated solvents or those solvents listed in F001, F002, and F005; and still bottoms from the recovery of these spent solvents and spent solvent mixtures.	(T)
F005	The following spent non-halogenated solvents: Toluene, methyl ethyl ketone, carbon disulfide, isobutanol, pyridine, benzene, 2-ethoxyethanol, and 2-nitropropane; all spent solvent mixtures/blends containing, before use, a total of ten percent or more (by volume) of one or more of the above non-halogenated solvents or those solvents listed in F001, F002, or F004; and still bottoms from the recovery of these spent solvents and spent solvent mixtures.	(I,T)
F006	Wastewater treatment sludges from electroplating operations except from the following processes: (1) Sulfuric acid anodizing of aluminum; (2) tin plating on carbon steel; (3) zinc plating (segregated basis) on carbon steel; (4) aluminum or zinc-aluminum plating on carbon steel; (5) cleaning/stripping associated with tin, zinc and aluminum plating on carbon steel; and (6) chemical etching and milling of aluminum.	(T)
F007	Spent cyanide plating bath solutions from electroplating operations.	(R, T)
F008	Plating bath residues from the bottom of plating baths from electroplating operations where cyanides are used in the process.	(R, T)
F009	Spent stripping and cleaning bath solutions from electroplating operations where cyanides are used in the process.	(R, T)
F010	Quenching bath residues from oil baths from metal heat treating operations where cyanides are used in the process.	(R, T)
F011	Spent cyanide solutions from salt bath pot cleaning from metal heat treating operations.	(R, T)
F012	Quenching waste water treatment sludges from metal heat treating operations where cyanides are used in the process.	(T)
F019	Wastewater treatment sludges from the chemical conversion coating of aluminum except from zirconium phosphating in aluminum can washing when such phosphating is an exclusive conversion coating process. Wastewater treatment sludges from the manufacturing of motor vehicles using a zinc phosphating process will not be subject to this listing at the point of generation if the wastes are not placed outside on the land prior to shipment to a landfill for	(T)

	disposal and are either: disposed in a Subtitle D municipal or industrial landfill unit that is equipped with a single clay liner and is permitted, licensed or otherwise authorized by the state; or disposed in a landfill unit subject to, or otherwise meeting, the landfill requirements in 40 CFR 258.40 or the state equivalent, Rule 1200-01-11-.06(14)(b) or Rule 1200-01-11-.05(14)(b). For the purposes of this listing, motor vehicle manufacturing is defined in item 2(iv)(I) of this subparagraph and item 2(iv)(II) of this subparagraph describes the recordkeeping requirements for motor vehicle manufacturing facilities.	
F020	Wastes (except wastewater and spent carbon from hydrogen chloride purification) from the production or manufacturing use (as a reactant, chemical intermediate, or component in a formulating process) of tri- or tetrachlorophenol, or of intermediates used to produce their pesticide derivatives. (This listing does not include wastes from the production of Hexachlorophene from highly purified 2,4,5-trichlorophenol.).	(H)
F021	Wastes (except wastewater and spent carbon from hydrogen chloride purification) from the production or manufacturing use (as a reactant, chemical intermediate, or component in a formulating process) of pentachlorophenol, or of intermediates used to produce its derivatives.	(H)
F022	Wastes (except wastewater and spent carbon from hydrogen chloride purification) from the manufacturing use (as a reactant, chemical intermediate, or component in a formulating process) of tetra-, penta-, or hexachlorobenzenes under alkaline conditions.	(H)
F023	Wastes (except wastewater and spent carbon from hydrogen chloride purification) from the production of materials on equipment previously used for the production or manufacturing use (as a reactant, chemical intermediate, or component in a formulating process) of tri- and tetrachlorophenols. (This listing does not include wastes from equipment used only for the production or use of Hexachlorophene from highly purified 2,4,5-trichlorophenol.).	(H)
F024	Process wastes, including but not limited to, distillation residues, heavy ends, tars, and reactor clean-out wastes, from the production of certain chlorinated aliphatic hydrocarbons by free radical catalyzed processes. These chlorinated aliphatic hydrocarbons are those having carbon chain lengths ranging from one to and including five, with varying amounts and positions of chlorine substitution. (This listing does not include wastewaters, wastewater treatment sludges, spent catalysts, and wastes listed in subparagraph (b) or (c) of this paragraph.).	(T)
F025	Condensed light ends, spent filters and filter aids, and spent desiccant wastes from the production of certain chlorinated aliphatic hydrocarbons, by free radical catalyzed processes. These chlorinated aliphatic hydrocarbons are those having carbon chain lengths ranging from one to and including five, with varying amounts and positions of chlorine substitution.	(T)
F026	Wastes (except wastewater and spent carbon from hydrogen chloride purification) from the production of materials on equipment previously used for the manufacturing use (as a reactant, chemical intermediate, or component in a formulating process) of tetra-, penta-, or hexachlorobenzene under alkaline conditions.	(H)
F027	Discarded unused formulations containing tri-, tetra-, or pentachlorophenol or discarded unused formulations containing compounds derived from these chlorophenols. (This listing does not include formulations containing Hexachlorophene synthesized from prepurified 2,4,5-trichlorophenol as the sole component.).	(H)
F028	Residues resulting from the incineration or thermal treatment of soil contaminated with Hazardous Waste Codes F020, F021, F022, F023, F026, and F027.	(T)
F032	Wastewaters (except those that have not come into contact with process contaminants), process residuals, preservative drippage, and spent formulations from wood preserving processes generated at plants that currently use or have previously used chlorophenolic formulations (except potentially cross-contaminated wastes that have had the F032 waste code deleted in accordance with subparagraph (f) of this paragraph or potentially cross-contaminated wastes that are otherwise currently regulated as hazardous wastes (i.e., F034 or F035), and where the generator does not resume or initiate use of chlorophenolic formulations). This listing does not include K001 bottom sediment sludge from the treatment	(T)

	of wastewater from wood preserving processes that use creosote and/or pentachlorophenol	
F034	Wastewaters (except those that have not come into contact with process contaminants), process residuals, preservative drippage, and spent formulations from wood preserving processes generated at plants that use creosote formulations. This listing does not include K001 bottom sediment sludge from the treatment of wastewater from wood preserving processes that use creosote and/or pentachlorophenol	(T)
F035	Wastewaters (except those that have not come into contact with process contaminants), process residuals, preservative drippage, and spent formulations from wood preserving processes generated at plants that use inorganic preservatives containing arsenic or chromium. This listing does not include K001 bottom sediment sludge from the treatment of wastewater from wood preserving processes that use creosote and/or pentachlorophenol	(T)
F037	Petroleum refinery primary oil/water/solids separation sludge-Any sludge generated from the gravitational separation of oil/water/solids during the storage or treatment of process wastewaters and oily cooling wastewaters from petroleum refineries. Such sludges include, but are not limited to, those generated in oil/water/solids separators; tanks and impoundments; ditches and other conveyances; sumps; and stormwater units receiving dry weather flow. Sludge generated in stormwater units that do not receive dry weather flow, sludges generated from non-contact once-through cooling waters segregated for treatment from other process or oily cooling waters, sludges generated in aggressive biological treatment units as defined in subpart 2(ii) of this subparagraph (including sludges generated in one or more additional units after wastewaters have been treated in aggressive biological treatment units) and K051 wastes are not included in this listing. This listing does include residuals generated from processing or recycling oil-bearing hazardous secondary materials excluded under item (1)(d)1(xii)(I) of this rule, if those residuals are to be disposed of.	(T)
F038	Petroleum refinery secondary (emulsified) oil/water/solids separation sludge-Any sludge and/or float generated from the physical and/or chemical separation of oil/water/solids in process wastewaters and oily cooling wastewaters from petroleum refineries. Such wastes include, but are not limited to, all sludges and floats generated in: induced air flotation (IAF) units, tanks and impoundments, and all sludges generated in DAF units. Sludges generated in stormwater units that do not receive dry weather flow, sludges generated from non-contact once-through cooling waters segregated for treatment from other process or oily cooling waters, sludges and floats generated in aggressive biological treatment units as defined in subpart 2(ii) of this paragraph (including sludges and floats generated in one or more additional units after wastewaters have been treated in aggressive biological treatment units) and F037, K048, and K051 wastes are not included in this listing. This listing does include residuals generated from processing or recycling oil-bearing hazardous secondary materials excluded under item (1)(d)1(xii)(I) of this rule, if those residuals are to be disposed of.	(T)
F039	Leachate (liquids that have percolated through land disposed wastes) resulting from the disposal of more than one restricted waste classified as hazardous under this paragraph. (Leachate resulting from the disposal of one or more of the following Hazardous Wastes and no other Hazardous Wastes retains its Hazardous Waste Code(s): F020, F021, F022, F026, F027, and/or F028.).	(T)

* (I, T,) should be used to specify mixtures that are ignitable and contain toxic constituents.
(R, T) should be used to specify mixtures that are reactive and contain toxic constituents.

2. Listing Specific Definitions:

(i) For the purposes of the F037 and F038 listings, oil/water/solids is defined as oil and/or water and/or solids.

(ii) (I) For the purposes of the F037 and F038 listings, aggressive biological treatment units are defined as units which employ one of the following four treatment methods: activated sludge; trickling filter; rotating biological contactor for the continuous accelerated biological oxidation of wastewaters; or high-rate aeration. High-rate aeration is a system of

surface impoundments or tanks, in which intense mechanical aeration is used to completely mix the wastes, enhance biological activity, and (I) the units employs a minimum of 6 hp per million gallons of treatment volume; and either (II) the hydraulic retention time of the unit is no longer than 5 days; or (III) the hydraulic retention time is no longer than 30 days and the unit does not generate a sludge that is a hazardous waste by the Toxicity Characteristic.

(II) Generators and treatment, storage and disposal facilities have the burden of proving that their sludges are exempt from listing as F037 and F038 wastes under this definition. Generators and treatment, storage and disposal facilities must maintain, in their operating or other onsite records, documents and data sufficient to prove that: (I) the unit is an aggressive biological treatment unit as defined in this part; and (II) the sludges sought to be exempted from the definitions of F037 and/or F038 were actually treated in the aggressive biological treatment unit.

(iii) (I) For the purposes of the F037 listing, sludges are considered to be generated at the moment of deposition in the unit, where deposition is defined as at least a temporary cessation of lateral particle movement.

(II) For the purposes of the F038 listing,

I. Sludges are considered to be generated at the moment of deposition in the unit, where deposition is defined as at least a temporary cessation of lateral particle movement and

II. Floats are considered to be generated at the moment they are formed in the top of the unit.

(iv) For the purposes of the F019 listing, the following apply to wastewater treatment sludges from the manufacturing of motor vehicles using a zinc phosphating process.

(I) Motor vehicle manufacturing is defined to include the manufacture of automobiles and light trucks/utility vehicles (including light duty vans, pick-up trucks, minivans, and sport utility vehicles). Facilities must be engaged in manufacturing complete vehicles (body and chassis or unibody) or chassis only.

(II) Generators must maintain in their on-site records documentation and information sufficient to prove that the wastewater treatment sludges to be exempted from the F019 listing meet the conditions of the listing. These records must include: the volume of waste generated and disposed of off site; documentation showing when the waste volumes were generated and sent off site; the name and address of the receiving facility; and documentation confirming receipt of the waste by the receiving facility. Generators must maintain these documents on site for no less than five (5) years. The retention period for the documentation is automatically extended during the course of any enforcement action or as requested by the Commissioner.

(c) Hazardous Wastes from Specific Sources [40 CFR 261.32]

1. The following solid wastes are listed hazardous wastes from specific sources unless they are excluded under subparagraphs (a) and (c) of Rule 0400-12-01-.01(3) and listed in paragraph (5) Appendix IX of this rule.

Industry and Hazardous Waste Code	Hazardous Waste	Hazard Code
Wood preservation:		
K001	Bottom sediment sludge from the treatment of wastewaters from wood preserving processes that use creosote and/or pentachlorophenol.	(T)
Inorganic pigments:		
K002	Wastewater treatment sludge from the production of chrome yellow and orange pigments.	(T)
K003	Wastewater treatment sludge from the production of molybdate orange pigments.	(T)
K004	Wastewater treatment sludge from the production of zinc yellow pigments.	(T)
K005	Wastewater treatment sludge from the production of chrome green pigments.	(T)
K006	Wastewater treatment sludge from the production of chrome oxide green pigments (anhydrous and hydrated).	(T)
K007	Wastewater treatment sludge from the production of iron blue pigments.	(T)
K008	Oven residue from the production of chrome oxide green pigments.	(T)
Organic chemicals:		
K009	Distillation bottoms from the production of acetaldehyde from ethylene.	(T)
K010	Distillation side cuts from the production of acetaldehyde from ethylene.	(T)
K011	Bottom stream from the wastewater stripper in the production of acrylonitrile.	(R, T)
K013	Bottom stream from the acetonitrile column in the production of acrylonitrile.	(R, T)
K014	Bottoms from the acetonitrile purification column in the production of acrylonitrile.	(T)
K015	Still bottoms from the distillation of benzyl chloride.	(T)
K016	Heavy ends or distillation residues from the production of carbon tetrachloride.	(T)
K017	Heavy ends (still bottoms) from the purification column in the production of epichlorohydrin.	(T)
K018	Heavy ends from the fractionation column in ethyl chloride production.	(T)
K019	Heavy ends from the distillation of ethylene dichloride in ethylene dichloride production.	(T)
K020	Heavy ends from the distillation of vinyl chloride in vinyl chloride monomer production.	(T)

K021	Aqueous spent antimony catalyst waste from fluoromethanes production.	(T)
K022	Distillation bottom tars from the production of phenol/acetone from cumene.	(T)
K023	Distillation light ends from the production of phthalic anhydride from naphthalene.	(T)
K024	Distillation bottoms from the production of phthalic anhydride from naphthalene.	(T)
K025	Distillation bottoms from the production of nitrobenzene by the nitration of benzene.	(T)
K026	Stripping still tails from the production of methyl ethyl pyridines.	(T)
K027	Centrifuge and distillation residues from toluene diisocyanate production.	(R, T)
K028	Spent catalyst from the hydrochlorinator reactor in the production of 1,1,1-trichloroethane.	(T)
K029	Waste from the product steam stripper in the production of 1,1,1-trichloroethane.	(T)
K030	Column bottoms or heavy ends from the combined production of trichloroethylene and perchloroethylene.	(T)
K083	Distillation bottoms from aniline production.	(T)
K085	Distillation or fractionation column bottoms from the production of chlorobenzenes.	(T)
K093	Distillation light ends from the production of phthalic anhydride from ortho-xylene.	(T)
K094	Distillation bottoms from the production of phthalic anhydride from ortho-xylene.	(T)
K095	Distillation bottoms from the production of 1,1,1-trichloroethane.	(T)
K096	Heavy ends from the heavy ends column from the production of 1,1,1-trichloroethane.	(T)
K103	Process residues from aniline extraction from the production of aniline.	(T)
K104	Combined wastewater streams generated from nitrobenzene/aniline production.	(T)
K105	Separated aqueous stream from the reactor product washing step in the production of chlorobenzenes.	(T)
K107	Column bottoms from product separation from the production of 1,1 dimethylhydrazine (UDMH) from carboxylic acid hydrazides.	(C,T)
K108	Condensed column overheads from product separation and condensed reactor vent gases from the production of 1,1-dimethylhydrazine (UDMH) from carboxylic acid hydrazides.	(I,T)
K109	Spent filter cartridges from product purification from the production of 1,1-dimethylhydrazine (UDMH) from carboxylic acid hydrazides.	(T)
K110	Condensed column overheads from intermediate separation from the production of 1,1-dimethylhydrazine (UDMH) from carboxylic acid hydrazides.	(T)

K111	Product washwaters from the production of dinitrotoluene via nitration of toluene.	(C,T)
K112	Reaction by-product water from the drying column in the production of toluenediamine via hydrogenation of dinitrotoluene.	(T)
K113	Condensed liquid light ends from the purification of toluenediamine in the production of toluenediamine via hydrogenation of dinitrotoluene.	(T)
K114	Vicinals from the purification of toluenediamine in the production of toluenediamine via hydrogenation of dinitrotoluene.	(T)
K115	Heavy ends from the purification of toluenediamine in the production of toluenediamine via hydrogenation of dinitrotoluene.	(T)
K116	Organic condensate from the solvent recovery column in the production of toluene diisocyanate via phosgenation of toluenediamine.	(T)
K117	Wastewater from the reactor vent gas scrubber in the production of ethylene dibromide via bromination of ethene.	(T)
K118	Spent adsorbent solids from purification of ethylene dibromide in the production of ethylene dibromide via bromination of ethene.	(T)
K136	Still bottoms from the purification of ethylene dibromide in the production of ethylene dibromide via bromination of ethene.	(T)
K149	Distillation bottoms from the production of alpha- (or methyl-) chlorinated toluenes, ring-chlorinated toluenes, benzoyl chlorides, and compounds with mixtures of these functional groups, (This waste does not include still bottoms from the distillation of benzyl chloride.).	(T)
K150	Organic residuals, excluding spent carbon adsorbent, from the spent chlorine gas and hydrochloric acid recovery processes associated with the production of alpha- (or methyl-) chlorinated toluenes, ring-chlorinated toluenes, benzoyl chlorides, and compounds with mixtures of these functional groups.	(T)
K151	Wastewater treatment sludges, excluding neutralization and biological sludges, generated during the treatment of wastewaters from the production of alpha-(or methyl-) chlorinated toluenes, ring-chlorinated toluenes, benzoyl chlorides, and compounds with mixtures of these functional groups.	(T)
K156	Organic waste (including heavy ends, still bottoms, light ends, spent solvents, filtrates, and decantates) from the production of carbamates and carbamoyl oximes. (This listing does not apply to wastes generated from the manufacture of 3-iodo-2-propynyl n-butylcarbamate.)	(T)
K157	Wastewaters (including scrubber waters, condenser waters, washwaters, and separation waters) from the production of carbamates and carbamoyl oximes. (This listing does not apply to wastes generated from the manufacture of 3-iodo-2-propynyl n-butylcarbamate.)	(T)
K158	Bag house dusts and filter/separation solids from the production of carbamates and carbamoyl oximes. (This listing does not apply to wastes generated from the manufacture of 3-iodo-2-propynyl n-butylcarbamate.).	(T)
K159	Organics from the treatment of thiocarbamate wastes	(T)

K161	Purification solids (including filtration, evaporation, and centrifugation solids), bag house dust and floor sweepings from the production of dithiocarbamate acids and their salts. (This listing does not include K125 or K126.)	(R,T)
K174	Wastewater treatment sludges from the production of ethylene dichloride or vinyl chloride monomer (including sludges that result from commingled ethylene dichloride or vinyl chloride monomer wastewater and other wastewater), unless the sludges meet the following conditions: (i) they are disposed of in a Subtitle C or non-hazardous landfill licensed or permitted by the state or federal government; (ii) they are not otherwise placed on the land prior to final disposal; and (iii) the generator maintains documentation demonstrating that the waste was either disposed of in an on-site landfill or consigned to a transporter or disposal facility that provided a written commitment to dispose of the waste in an off-site landfill. Respondents in any action brought to enforce the requirements of Subtitle C must, upon a showing by the government that the respondent managed wastewater treatment sludges from the production of vinyl chloride monomer or ethylene dichloride, demonstrate that they meet the terms of the exclusion set forth above. In doing so, they must provide appropriate documentation (e.g., contracts between the generator and the landfill owner/operator, invoices documenting delivery of waste to landfill, etc.) that the terms of the exclusion were met.	(T)
K175	Wastewater treatment sludges from the production of vinyl chloride monomer using mercuric chloride catalyst in an acetylene-based process.	(T)
K181	Nonwastewaters from the production of dyes and/or pigments (including nonwastewaters commingled at the point of generation with nonwastewaters from other processes) that, at the point of generation, contain mass loadings of any of the constituents identified in part 3 of this subparagraph that are equal to or greater than the corresponding part 3 levels, as determined on a calendar year basis. These wastes will not be hazardous if the nonwastewaters are: (i) disposed in a Subtitle D landfill unit subject to the design criteria in 40 CFR 258.40, (ii) disposed in a Subtitle C landfill unit subject to either Rule 0400-12-01-.06(14)(b) or Rule 0400-12-01-.05(14)(b); (iii) disposed in other Subtitle D landfill units that meet the design criteria in 40 CFR 258.40, Rule 0400-12-01-.06(14)(b), or Rule 0400-12-01-.05(14)(b); or (iv) treated in a combustion unit that is permitted under Subtitle C, or an onsite combustion unit that is permitted under the Clean Air Act. For the purposes of this listing, dyes and/or pigments production is defined in subpart 2(i) of this subparagraph. Part 4 of this subparagraph describes the process for demonstrating that a facility's nonwastewaters are not K181. This listing does not apply to wastes that are otherwise identified as hazardous under subparagraphs (b) through (e) of paragraph (3) of this rule and subparagraphs (b) through (d) of paragraph (4) of this rule at the point of generation. Also, the listing does not apply to wastes generated before any annual mass loading limit is met.	(T)
Inorganic chemicals:		

K071	Brine purification muds from the mercury cell process in chlorine production, where separately prepurified brine is not used.	(T)
K073	Chlorinated hydrocarbon waste from the purification step of the diaphragm cell process using graphite anodes in chlorine production.	(T)
K106	Wastewater treatment sludge from the mercury cell process in chlorine production.	(T)
K176	Baghouse filters from the production of antimony oxide, including filters from the production of intermediates (e. g., antimony metal or crude antimony oxide).	(E)
K177	Slag from the production of antimony oxide that is speculatively accumulated or disposed, including slag from the production of intermediates (e. g., antimony metal or crude antimony oxide).	(T)
K178	Residues from manufacturing and manufacturing-site storage of ferric chloride from acids formed during the production of titanium dioxide using the chloride-ilmenite process.	(T)
Pesticides:		
K031	By-product salts generated in the production of MSMA and cacodylic acid.	(T)
K032	Wastewater treatment sludge from the production of chlordane.	(T)
K033	Wastewater and scrub water from the chlorination of cyclopentadiene in the production of chlordane.	(T)
K034	Filter solids from the filtration of hexachlorocyclopentadiene in the production of chlordane.	(T)
K035	Wastewater treatment sludges generated in the production of creosote.	(T)
K036	Still bottoms from toluene reclamation distillation in the production of disulfoton.	(T)
K037	Wastewater treatment sludges from the production of disulfoton.	(T)
K038	Wastewater from the washing and stripping of phorate production.	(T)
K039	Filter cake from the filtration of diethylphosphorodithioic acid in the production of phorate.	(T)
K040	Wastewater treatment sludge from the production of phorate.	(T)
K041	Wastewater treatment sludge from the production of toxaphene.	(T)
K042	Heavy ends or distillation residues from the distillation of tetrachlorobenzene in the production of 2,4,5-T.	(T)
K043	2,6-Dichlorophenol waste from the production of 2,4-D.	(T)
K097	Vacuum stripper discharge from the chlordane chlorinator in the production of chlordane.	(T)
K098	Untreated process wastewater from the production of toxaphene.	(T)
K099	Untreated wastewater from the production of 2,4-D.	(T)
K123	Process wastewater (including supernates, filtrates, and washwaters) from the production of ethylenebisdithiocarbamic acid and its salt.	(T)

K124	Reactor vent scrubber water from the production of ethylenebisdithiocarbamic acid and its salts.	(C, T)
K125	Filtration, evaporation, and centrifugation solids from the production of ethylenebisdithiocarbamic acid and its salts.	(T)
K126	Baghouse dust and floor sweepings in milling and packaging operations from the production or formulation of ethylenebisdithiocarbamic acid and its salts.	(T)
K131	Wastewater from the reactor and spent sulfuric acid from the acid dryer from the production of methyl bromide.	(C,T)
K132	Spent absorbent and wastewater separator solids from the production of methyl bromide.	(T)
Explosives:		
K044	Wastewater treatment sludges from the manufacturing and processing of explosives.	(R)
K045	Spent carbon from the treatment of wastewater containing explosives.	(R)
K046	Wastewater treatment sludges from the manufacturing, formulation and loading of lead-based initiating compounds.	(T)
K047	Pink/red water from TNT operations.	(R)
Petroleum refining:		
K048	Dissolved air flotation (DAF) float from the petroleum refining industry.	(T)
K049	Slop oil emulsion solids from the petroleum refining industry.	(T)
K050	Heat exchanger bundle cleaning sludge from the petroleum refining industry.	(T)
K051	API separator sludge from the petroleum refining industry.	(T)
K052	Tank bottoms (leaded) from the petroleum refining industry.	(T)
K169	Crude oil storage tank sediment from petroleum refining operations.	(T)
K170	Clarified slurry oil tank sediment and/or in-line filter/separation solids from petroleum refining operations.	(T)
K171	Spent Hydrotreating catalyst from petroleum refining operations, including guard beds used to desulfurize feeds to other catalytic reactors (this listing does not include inert support media).	(I,T)
K172	Spent Hydrorefining catalyst from petroleum refining operations, including guard beds used to desulfurize feeds to other catalytic reactors (this listing does not include inert support media).	(I,T)
Iron and steel:		
K061	Emission control dust/sludge from the primary production of steel in electric furnaces.	(T)
K062	Spent pickle liquor generated by steel finishing operations of facilities within the iron and steel industry (SIC Codes 331 and 332).	(C,T)

Primary aluminum:		
K088	Spent potliners from primary aluminum reduction.	(T)
Secondary lead:		
K069	Emission control dust/sludge from secondary lead smelting. (Note: This listing is stayed administratively for sludge generated from secondary acid scrubber systems. The stay will remain in effect until further administrative action is taken. If EPA takes further action effecting this stay, EPA will publish a notice of the action in the Federal Register).	(T)
K100	Waste leaching solution from acid leaching of emission control dust/sludge from secondary lead smelting.	(T)
Veterinary pharmaceu-ticals:		
K084	Wastewater treatment sludges generated during the production of veterinary pharmaceuticals from arsenic or organo-arsenic compounds.	(T)
K101	Distillation tar residues from the distillation of aniline-based compounds in the production of veterinary pharmaceuticals from arsenic or organo-arsenic compounds.	(T)
K102	Residue from the use of activated carbon for decolorization in the production of veterinary pharmaceuticals from arsenic or organo-arsenic compounds.	(T)
Ink formulation:		
K086	Solvent washes and sludges, caustic washes and sludges, or water washes and sludges from cleaning tubs and equipment used in the formulation of ink from pigments, driers, soaps, and stabilizers containing chromium and lead.	(T)
Coking:		
K060	Ammonia still lime sludge from coking operations.	(T)
K087	Decanter tank tar sludge from coking operations.	(T)
K141	Process residues from the recovery of coal tar, including, but not limited to, collecting sump residues from the production of coke from coal or the recovery of coke by-products produced from coal. This listing does not include K087 (decanter tank tar sludges from coking operations).	(T)
K142	Tar storage tank residues from the production of coke from coal or from the recovery of coke by-products produced from coal.	(T)
K143	Process residues from the recovery of light oil, including, but not limited to, those generated in stills, decanters, and wash oil recovery units from the recovery of coke by-products produced from coal.	(T)

K144	Wastewater sump residues from light oil refining, including, but not limited to, intercepting or contamination sump sludges from the recovery of coke by-products produced from coal.	(T)
K145	Residues from naphthalene collection and recovery operations from the recovery of coke by-products produced from coal.	(T)
K147	Tar storage tank residues from coal tar refining.	(T)
K148	Residues from coal tar distillation, including but not limited to, still bottoms.	(T)

2. Listing Specific Definitions

(i) For the purposes of the K181 listing, dyes and/or pigments production is defined to include manufacture of the following product classes: dyes, pigments, or FDA certified colors that are classified as azo, triarylmethane, perylene or anthraquinone classes. Azo products include azo, monoazo, diazo, triazo, polyazo, azoic, benzidine, and pyrazolone products. Triarylmethane products include both triarylmethane and triphenylmethane products. Wastes that are not generated at a dyes and/or pigments manufacturing site, such as wastes from the offsite use, formulation, and packaging of dyes and/or pigments, are not included in the K181 listing.

3. K181 Listing Levels

Nonwastewaters containing constituents in amounts equal to or exceeding the following levels during any calendar year are subject to the K181 listing, unless the conditions in the K181 listing are met.

Constituent	Chemical Abstracts No.	Mass levels (kg/yr)
Aniline	62-53-3	9,300
o-Anisidine	90-04-0	110
4-Chloroaniline	106-47-8	4,800
p-Cresidine	120-71-8	660
2, 4-dimethylaniline	95-68-1	100
1, 2-Phenylenediamine	95-54-5	710
1, 3-Phenylenediamine	108-45-2	1,200

4. Procedures for demonstrating that dyes and/or pigment nonwastewaters are not K181

The procedures described in subparts (i) through (iii) and (v) of this part establish when nonwastewaters from the production of dyes/pigments would not be hazardous (these procedures apply to wastes that are not disposed in landfill units or treated in combustion units as specified in part 1 of this subparagraph). If the nonwastewaters are disposed in landfill units or treated in combustion units as described in part 1 of this subparagraph, then the nonwastewaters are not hazardous. In order to demonstrate that it is meeting the landfill disposal or combustion conditions contained in the K181 listing description, the generator must maintain documentation as described in subpart (iv) of this part.

(i) Determination based on no K181 constituents

Generators that have knowledge (e. g., knowledge of constituents in wastes based on prior sampling and analysis data and/or information about raw materials used, production processes used, and reaction and degradation products formed) that their wastes contain none of the K181 constituents (see part 3 of this subparagraph) can use their knowledge to determine that their waste is not K181. The generator must document the basis for all such

determinations on an annual basis and keep each annual documentation for three years.

(ii) Determination for generated quantities of 1,000 MT/yr or less for wastes that contain K181 constituents

If the total annual quantity of dyes and/or pigment nonwastewaters generated is 1,000 metric tons or less, the generator can use knowledge of the wastes (e. g., knowledge of constituents in wastes based on prior analytical data and/or information about raw materials used, production processes used, and reaction and degradation products formed) to conclude that annual mass loadings for the K181 constituents are below the listing levels of part 3 of this subparagraph. To make this determination, the generator must:

(I) Each year document the basis for determining that the annual quantity of nonwastewaters expected to be generated will be less than 1,000 metric tons.

(II) Track the actual quantity of nonwastewaters generated from January 1 through December 31 of each year. If, at any time within the year, the actual waste quantity exceeds 1,000 metric tons, the generator must comply with the requirements of subpart (iii) of this part for the remainder of the year.

(III) Keep a running total of the K181 constituent mass loadings over the course of the calendar year.

(IV) Keep the following records on site for the three most recent calendar years in which the hazardous waste determinations are made:

I. The quantity of dyes and/or pigment nonwastewaters generated.

II. The relevant process information used.

III. The calculations performed to determine annual total mass loadings for each K181 constituent in the nonwastewaters during the year.

(iii) Determination for generated quantities greater than 1,000 MT/yr for wastes that contain K181 constituents

If the total annual quantity of dyes and/or pigment nonwastewaters generated is greater than 1,000 metric tons, the generator must perform all of the steps described in items (I) through (XI) of this subpart in order to make a determination that its waste is not K181.

(I) Determine which K181 constituents of this subparagraph are reasonably expected to be present in the wastes based on knowledge of the wastes (e. g., based on prior sampling and analysis data and/or information about raw materials used, production processes used, and reaction and degradation products formed).

(II) If 1, 2-phenylenediamine is present in the wastes, the generator can use either knowledge or sampling and analysis procedures to determine the level of this constituent in the wastes. For determinations based on use of knowledge, the generator must comply with the procedures for using knowledge described in subpart (ii) of this part and keep the records described in item (ii)(IV) of this part. For determinations based on sampling and analysis, the generator must comply with the sampling and

analysis and recordkeeping requirements described below in this subpart.

(III) Develop a waste sampling and analysis plan (or modify an existing plan) to collect and analyze representative waste samples for the K181 constituents reasonably expected to be present in the wastes. At a minimum, the plan must include:

I. A discussion of the number of samples needed to characterize the wastes fully;

II. The planned sample collection method to obtain representative waste samples;

III. A discussion of how the sampling plan accounts for potential temporal and spatial variability of the wastes; and

IV. A detailed description of the test methods to be used, including sample preparation, clean up (if necessary), and determinative methods.

(IV) Collect and analyze samples in accordance with the waste sampling and analysis plan.

I. The sampling and analysis must be unbiased, precise, and representative of the wastes.

II. The analytical measurements must be sufficiently sensitive, accurate and precise to support any claim that the constituent mass loadings are below the listing levels of part 3 of this subparagraph.

(V) Record the analytical results.

(VI) Record the waste quantity represented by the sampling and analysis results.

(VII) Calculate constituent-specific mass loadings (product of concentrations and waste quantity).

(VIII) Keep a running total of the K181 constituent mass loadings over the course of the calendar year.

(IX) Determine whether the mass of any of the K181 constituents listed in part 3 of this subparagraph generated between January 1 and December 31 of any year is below the K181 listing levels.

(X) Keep the following records on site for the three most recent calendar years in which the hazardous waste determinations are made:

I. The sampling and analysis plan.

II. The sampling and analysis results (including QA/QC data).

III. The quantity of dyes and/or pigments nonwastewaters generated.

IV. The calculations performed to determine annual mass loadings.

(XI) Nonhazardous waste determinations must be conducted annually to verify that the wastes remain nonhazardous.

I. The annual testing requirements are suspended after three consecutive successful annual demonstrations that the wastes are nonhazardous. The generator can then use knowledge of the wastes to support subsequent annual determinations.

II. The annual testing requirements are reinstated if the manufacturing or waste treatment processes generating the wastes are significantly altered, resulting in an increase of the potential for the wastes to exceed the listing levels.

III. If the annual testing requirements are suspended, the generator must keep records of the process knowledge information used to support a nonhazardous determination. If testing is reinstated, a description of the process change must be retained.

(iv) Recordkeeping for the landfill disposal and combustion exemptions

For the purposes of meeting the landfill disposal and combustion condition set out in the K181 listing description, the generator must maintain on site for three years documentation demonstrating that each shipment of waste was received by a landfill unit that is subject to or meets the landfill design standards set out in the listing description, or was treated in combustion units as specified in the listing description.

(v) Waste holding and handling

During the interim period, from the point of generation to completion of the hazardous waste determination, the generator is responsible for storing the wastes appropriately. If the wastes are determined to be hazardous and the generator has not complied with the Subtitle C requirements during the interim period, the generator could be subject to an enforcement action for improper management.

(d) Discarded Commercial Chemical Products, Off-specifications Species, Container Residues, and Spill Residues Thereof [40 CFR 261.33]

The following materials or items are hazardous wastes if and when they are discarded or intended to be discarded as described in item (1)(b)1(ii)(I) of this rule, when they are mixed with waste oil or used oil or other material and applied to the land for dust suppression or road treatment, when they are otherwise applied to the land in lieu of their original intended use or when they are contained in products that are applied to the land in lieu of their original intended use, or when, in lieu of their original intended use, they are produced for use as (or as a component of) a fuel, distributed for use as a fuel, or burned as a fuel.

1. Any commercial chemical product, or manufacturing chemical intermediate having the generic name listed in part 5 or 6 of this subparagraph.

2. Any off-specification commercial chemical product or manufacturing chemical intermediate which, if it met specifications, would have the generic name listed in part 5 or 6 of this subparagraph.

3. Any residue remaining in a container or in an inner liner removed from a container that has held any commercial chemical product or manufacturing chemical intermediate having the generic name listed in part 5 or 6 of this subparagraph, unless the container is empty as defined in Rule 0400-12-01-.02(1)(g)2.

(Comment: Unless the residue is being beneficially used or reused, or legitimately recycled or reclaimed; or being accumulated, stored, transported or treated prior to such use, re-use, recycling or reclamation, Department considers the residue to be intended for discard, and thus, a hazardous waste. An example of a legitimate re-use of the residue would be where the residue remains in the container and the container is used to hold the same commercial chemical product or manufacturing chemical intermediate it previously held. An example of the discard of the residue would be where the drum is sent to a drum reconditioner who reconditions the drum but discards the residue.)

4. Any residue or contaminated soil, water or other debris resulting from the cleanup of a spill into or on any land or water of any commercial chemical product or manufacturing chemical intermediate having the generic name listed in part 5 or 6 of this subparagraph, or any residue or contaminated soil, water or other debris resulting from the cleanup of a spill, into or on any land or water, of any off-specification chemical product and manufacturing chemical intermediate which, if it met specifications, would have the generic name listed in part 5 or 6 of this subparagraph.

(Comment: The phrase "commercial chemical product or manufacturing chemical intermediate having the generic name listed in . . ." refers to a chemical substance which is manufactured or formulated for commercial or manufacturing use which consists of the commercially pure grade of the chemical, any technical grades of the chemical that are produced or marketed, and all formulations in which the chemical is the sole active ingredient. It does not refer to a material, such as a manufacturing process waste, that contains any of the substances listed in part 5 or 6 of this subparagraph. Where a manufacturing process waste is deemed to be a hazardous waste because it contains a substance listed in part 5 or 6 of this subparagraph, such waste will be listed in either subparagraphs (b) or (c) of this paragraph or will be identified as a hazardous waste by the characteristics set forth in paragraph (3) of this rule.)

5. The commercial chemical products, manufacturing chemical intermediates or off-specification commercial chemical products or manufacturing chemical intermediates referred to in parts 1 through 4 of this subparagraph, are identified as acute hazardous wastes (H) and are subject to the small quantity exclusion defined in part (1)(e)5 and 6 of this rule.

(Comment: For the convenience of the regulated community the primary hazardous properties of these materials have been indicated by the letters T (Toxicity), and R (Reactivity). Absence of a letter indicates that the compound only is listed for acute toxicity.)

These wastes and their corresponding Hazardous Waste Codes are:

Hazardous Waste No.	Chemical Abstracts No.	Substance
P023	107-20-0	Acetaldehyde, chloro-
P002	591-08-2	Acetamide, N-(aminothioxomethyl)-
P057	640-19-7	Acetamide, 2-fluoro-
P058	62-74-8	Acetic acid, fluoro-, sodium salt
P002	591-08-2	1-Acetyl-2-thiourea
P003	107-02-8	Acrolein
P070	116-06-3	Aldicarb
P203	1646-88-4	Aldicarb sulfone.
P004	309-00-2	Aldrin

P005	107-18-6	Allyl alcohol
P006	20859-73-8	Aluminum phosphide (R,T)
P007	2763-96-4	5-(Aminomethyl)-3-isoxazolol
P008	504-24-5	4-Aminopyridine
P009	131-74-8	Ammonium picrate (R)
P119	7803-55-6	Ammonium vanadate
P099	506-61-6	Argentate(1-), bis(cyano-C)-, potassium
P010	7778-39-4	Arsenic acid H_3AsO_4
P012	1327-53-3	Arsenic oxide As_2O_3
P011	1303-28-2	Arsenic oxide As_2O_5
P011	1303-28-2	Arsenic pentoxide
P012	1327-53-3	Arsenic trioxide
P038	692-42-2	Arsine, diethyl-
P036	696-28-6	Arsonous dichloride, phenyl-
P054	151-56-4	Aziridine
P067	75-55-8	Aziridine, 2-methyl-
P013	542-62-1	Barium cyanide
P024	106-47-8	Benzenamine, 4-chloro-
P077	100-01-6	Benzenamine, 4-nitro-
P028	100-44-7	Benzene, (chloromethyl)-
P042	51-43-4	1,2-Benzenediol, 4-[1-hydroxy-2-(methylamino)ethyl]-, (R)-
P046	122-09-8	Benzeneethanamine, alpha,alpha-dimethyl-
P014	108-98-5	Benzenethiol
P127	1563-66-2	7-Benzofuranol, 2,3-dihydro-2,2-dimethyl-, methylcarbamate.
P188	57-64-7	Benzoic acid, 2-hydroxy-, compd. with (3aS-cis)-1,2,3,3a,8,8a-hexahydro-1,3a,8-trimethylpyrrolo[2,3-b]indol-5-yl methylcarbamate ester (1:1).
P001	181-81-2	2H-1-Benzopyran-2-one, 4-hydroxy-3-(3-oxo-1-phenylbutyl)-, & salts, when present at concentrations greater than 0.3%
P028	100-44-7	Benzyl chloride
P015	7440-41-7	Beryllium powder
P017	598-31-2	Bromoacetone
P018	357-57-3	Brucine
P045	39196-18-4	2-Butanone, 3,3-dimethyl-1-(methylthio)-, O-[(methylamino)carbonyl] oxime
P021	592-01-8	Calcium cyanide
P021	592-01-8	Calcium cyanide $Ca(CN)_2$
P189	55285-14-8	Carbamic acid, [(dibutylamino)- thio]methyl-, 2,3-dihydro-2,2-dimethyl- 7-benzofuranyl ester.

P191	644-64-4	Carbamic acid, dimethyl-, 1-[(dimethyl-amino)carbonyl]- 5-methyl-1H- pyrazol-3-yl ester.
P192	119-38-0	Carbamic acid, dimethyl-, 3-methyl-1- (1-methylethyl)-1H- pyrazol-5-yl ester.
P190	1129-41-5	Carbamic acid, methyl-, 3-methylphenyl ester.
P127	1563-66-2	Carbofuran.
P022	75-15-0	Carbon disulfide
P095	75-44-5	Carbonic dichloride
P189	55285-14-8	Carbosulfan.
P023	107-20-0	Chloroacetaldehyde
P024	106-47-8	p-Chloroaniline
P026	5344-82-1	1-(o-Chlorophenyl)thiourea
P027	542-76-7	3-Chloropropionitrile
P029	544-92-3	Copper cyanide
P029	544-92-3	Copper cyanide Cu(CN)
P202	64-00-6	m-Cumenyl methylcarbamate.
P030		Cyanides (soluble cyanide salts), not otherwise specified
P031	460-19-5	Cyanogen
P033	506-77-4	Cyanogen chloride
P033	506-77-4	Cyanogen chloride (CN)Cl
P034	131-89-5	2-Cyclohexyl-4,6-dinitrophenol
P016	542-88-1	Dichloromethyl ether
P036	696-28-6	Dichlorophenylarsine
P037	60-57-1	Dieldrin
P038	692-42-2	Diethylarsine
P041	311-45-5	Diethyl-p-nitrophenyl phosphate
P040	297-97-2	O,O-Diethyl O-pyrazinyl phosphorothioate
P043	55-91-4	Diisopropylfluorophosphate (DFP)
P004	309-00-2	1,4,5,8-Dimethanonaphthalene, 1,2,3,4,10,10-hexachloro-1,4,4a,5,8,8a,-hexahydro-, (1alpha,4alpha,4abeta,5alpha,8alpha,8abeta)-
P060	465-73-6	1,4,5,8-Dimethanonaphthalene, 1,2,3,4,10,10-hexachloro-1,4,4a,5,8,8a-hexahydro-, (1alpha,4alpha,4abeta,5beta,8beta,8abeta)-
P037	60-57-1	2,7:3,6-Dimethanonaphth[2,3-b]oxirene, 3,4,5,6,9,9-hexachloro-1a,2,2a,3,6,6a,7,7a-octahydro-, (1aalpha,2beta,2aalpha,3beta,6beta,6aalpha,7beta, 7aalpha)-
P051	172-20-8	2,7:3,6-Dimethanonaphth [2,3-b]oxirene, 3,4,5,6,9,9-hexachloro-1a,2,2a,3,6,6a,7,7a-octahydro-, (1aalpha,2beta,2abeta,3alpha,6alpha,6abeta,7beta, 7aalpha)-, & metabolites
P044	60-51-5	Dimethoate
P046	122-09-8	alpha,alpha-Dimethylphenethylamine
P191	644-64-4	Dimetilan.
P047	1534-52-1	4,6-Dinitro-o-cresol, & salts

P048	51-28-5	2,4-Dinitrophenol
P020	88-85-7	Dinoseb
P085	152-16-9	Diphosphoramide, octamethyl-
P111	107-49-3	Diphosphoric acid, tetraethyl ester
P039	298-04-4	Disulfoton
P049	541-53-7	Dithiobiuret
P185	26419-73-8	1,3-Dithiolane-2-carboxaldehyde, 2,4-dimethyl-, O- [(methylamino)- carbonyl]oxime.
P050	115-29-7	Endosulfan
P088	145-73-3	Endothall
P051	72-20-8	Endrin
P051	72-20-8	Endrin, & metabolites
P042	51-43-4	Epinephrine
P031	460-19-5	Ethanedinitrile
P194	23135-22-0	Ethanimidothioic acid, 2-(dimethylamino)-N-[[(methylamino) carbonyl]oxy]-2-oxo-, methyl ester.
P066	16752-77-5	Ethanimidothioic acid, N-[[(methylamino)carbonyl]oxy]-, methyl ester
P101	107-12-0	Ethyl cyanide
P054	151-56-4	Ethyleneimine
P097	52-85-7	Famphur
P056	7782-41-4	Fluorine
P057	640-19-7	Fluoroacetamide
P058	62-74-8	Fluoroacetic acid, sodium salt
P198	23422-53-9	Formetanate hydrochloride.
P197	17702-57-7	Formparanate.
P065	628-86-4	Fulminic acid, mercury(2+) salt (R,T)
P059	76-44-8	Heptachlor
P062	757-58-4	Hexaethyl tetraphosphate
P116	79-19-6	Hydrazinecarbothioamide
P068	60-34-4	Hydrazine, methyl-
P063	74-90-8	Hydrocyanic acid
P063	74-90-8	Hydrogen cyanide
P096	7803-51-2	Hydrogen phosphide
P060	465-73-6	Isodrin
P192	119-38-0	Isolan.
P202	64-00-6	3-Isopropylphenyl N-methylcarbamate.
P007	2763-96-4	3(2H)-Isoxazolone, 5-(aminomethyl)-

P196	15339-36-3	Manganese, bis(dimethylcarbamodithioato-S,S')-,
P196	15339-36-3	Manganese dimethyldithiocarbamate.
P092	62-38-4	Mercury, (acetato-O)phenyl-
P065	628-86-4	Mercury fulminate (R,T)
P082	62-75-9	Methanamine, N-methyl-N-nitroso-
P064	624-83-9	Methane, isocyanato-
P016	542-88-1	Methane, oxybis[chloro-
P112	509-14-8	Methane, tetranitro- (R)
P118	75-70-7	Methanethiol, trichloro-
P198	23422-53-9	Methanimidamide, N,N-dimethyl-N'-[3-[[(methylamino)-carbonyl]oxy]phenyl]-, monohydrochloride.
P197	17702-57-7	Methanimidamide, N,N-dimethyl-N'-[2-methyl-4-[[(methylamino)carbonyl]oxy]phenyl]-
P050	115-29-7	6,9-Methano-2,4,3-benzodioxathiepin, 6,7,8,9,10,10- hexachloro-1,5,5a,6,9,9a-hexahydro-, 3-oxide
P059	76-44-8	4,7-Methano-1H-indene, 1,4,5,6,7,8,8-heptachloro- 3a,4,7,7a-tetrahydro-
P199	2032-65-7	Methiocarb.
P066	16752-77-5	Methomyl
P068	60-34-4	Methyl hydrazine
P064	624-83-9	Methyl isocyanate
P069	75-86-5	2-Methyllactonitrile
P071	298-00-0	Methyl parathion
P190	1129-41-5	Metolcarb.
P128	315-18-4	Mexacarbate.
P072	86-88-4	alpha-Naphthylthiourea
P073	13463-39-3	Nickel carbonyl
P073	13463-39-3	Nickel carbonyl $Ni(CO)_4$, (T-4)-
P074	557-19-7	Nickel cyanide
P074	557-19-7	Nickel cyanide $Ni(CN)_2$
P075	154-11-5	Nicotine, & salts
P076	10102-43-9	Nitric oxide
P077	100-01-6	p-Nitroaniline
P078	10102-44-0	Nitrogen dioxide
P076	10102-43-9	Nitrogen oxide NO
P078	10102-44-0	Nitrogen oxide NO_2
P081	55-63-0	Nitroglycerine (R)
P082	62-75-9	N-Nitrosodimethylamine
P084	4549-40-0	N-Nitrosomethylvinylamine

P085	152-16-9	Octamethylpyrophosphoramide
P087	20816-12-0	Osmium oxide OsO_4, (T-4)-
P087	20816-12-0	Osmium tetroxide
P088	145-73-3	7-Oxabicyclo[2.2.1]heptane-2,3-dicarboxylic acid
P194	23135-22-0	Oxamyl.
P089	56-38-2	Parathion
P034	131-89-5	Phenol, 2-cyclohexyl-4,6-dinitro-
P128	315-18-4	Phenol, 4-(dimethylamino)-3,5-dimethyl-, methylcarbamate (ester).
P199	2032-65-7	Phenol, (3,5-dimethyl-4-(methylthio)-, methylcarbamate
P048	51-28-5	Phenol, 2,4-dinitro-
P047	1534-52-1	Phenol, 2-methyl-4,6-dinitro-, & salts
P202	64-00-6	Phenol, 3-(1-methylethyl)-, methyl carbamate.
P201	2631-37-0	Phenol, 3-methyl-5-(1-methylethyl)-, methyl carbamate.
P020	88-85-7	Phenol, 2-(1-methylpropyl)-4,6-dinitro-
P009	131-74-8	Phenol, 2,4,6-trinitro-, ammonium salt (R)
P092	62-38-4	Phenylmercury acetate
P093	103-85-5	Phenylthiourea
P094	298-02-2	Phorate
P095	75-44-5	Phosgene
P096	7803-51-2	Phosphine
P041	311-45-5	Phosphoric acid, diethyl 4-nitrophenyl ester
P039	298-04-4	Phosphorodithioic acid, O,O-diethyl S-[2-(ethylthio)ethyl] ester
P094	298-02-2	Phosphorodithioic acid, O,O-diethyl S-[(ethylthio)methyl] ester
P044	60-51-5	Phosphorodithioic acid, O,O-dimethyl S-[2-(methylamino)-2-oxoethyl] ester
P043	55-91-4	Phosphorofluoridic acid, bis(1-methylethyl) ester
P089	56-38-2	Phosphorothioic acid, O,O-diethyl O-(4-nitrophenyl) ester
P040	297-97-2	Phosphorothioic acid, O,O-diethyl O-pyrazinyl ester
P097	52-85-7	Phosphorothioic acid, O-[4-[(dimethylamino)sulfonyl]phenyl] O,O-dimethyl ester
P071	298-00-0	Phosphorothioic acid, O,O,-dimethyl O-(4-nitrophenyl) ester
P204	57-47-6	Physostigmine.
P188	57-64-7	Physostigmine salicylate.
P110	78-00-2	Plumbane, tetraethyl-
P098	151-50-8	Potassium cyanide
P098	151-50-8	Potassium cyanide K(CN)
P099	506-61-6	Potassium silver cyanide
P201	2631-37-0	Promecarb

P203	1646-88-4	Propanal, 2-methyl-2-(methyl-sulfonyl)-, O-[(methylamino)carbonyl] oxime.
P070	116-06-3	Propanal, 2-methyl-2-(methylthio)-, O-[(methylamino)carbonyl]oxime
P101	107-12-0	Propanenitrile
P027	542-76-7	Propanenitrile, 3-chloro-
P069	75-86-5	Propanenitrile, 2-hydroxy-2-methyl-
P081	55-63-0	1,2,3-Propanetriol, trinitrate (R)
P017	598-31-2	2-Propanone, 1-bromo-
P102	107-19-7	Propargyl alcohol
P003	107-02-8	2-Propenal
P005	107-18-6	2-Propen-1-ol
P067	75-55-8	1,2-Propylenimine
P102	107-19-7	2-Propyn-1-ol
P008	504-24-5	4-Pyridinamine
P075	[1]54-11-5	Pyridine, 3-(1-methyl-2-pyrrolidinyl)-, (S)-, & salts
P204	57-47-6	Pyrrolo[2,3-b]indol-5-ol, 1,2,3,3a,8,8a-hexahydro-1,3a,8-trimethyl-, methylcarbamate (ester), (3aS-cis)-.
P114	12039-52-0	Selenious acid, dithallium(1+) salt
P103	630-10-4	Selenourea
P104	506-64-9	Silver cyanide
P104	506-64-9	Silver cyanide Ag(CN)
P105	26628-22-8	Sodium azide
P106	143-33-9	Sodium cyanide
P106	143-33-9	Sodium cyanide Na(CN)
P108	[1]57-24-9	Strychnidin-10-one, & salts
P018	357-57-3	Strychnidin-10-one, 2,3-dimethoxy-
P108	[1]57-24-9	Strychnine, & salts
P115	7446-18-6	Sulfuric acid, dithallium(1+) salt
P109	3689-24-5	Tetraethyldithiopyrophosphate
P110	78-00-2	Tetraethyl lead
P111	107-49-3	Tetraethyl pyrophosphate
P112	509-14-8	Tetranitromethane (R)
P062	757-58-4	Tetraphosphoric acid, hexaethyl ester
P113	1314-32-5	Thallic oxide
P113	1314-32-5	Thallium oxide Tl_2O_3
P114	12039-52-0	Thallium(I) selenite
P115	7446-18-6	Thallium(I) sulfate

P109	3689-24-5	Thiodiphosphoric acid, tetraethyl ester
P045	39196-18-4	Thiofanox
P049	541-53-7	Thioimidodicarbonic diamide $[(H_2N)C(S)]_2NH$
P014	108-98-5	Thiophenol
P116	79-19-6	Thiosemicarbazide
P026	5344-82-1	Thiourea, (2-chlorophenyl)-
P072	86-88-4	Thiourea, 1-naphthalenyl-
P093	103-85-5	Thiourea, phenyl-
P185	26419-73-8	Tirpate.
P123	8001-35-2	Toxaphene
P118	75-70-7	Trichloromethanethiol
P119	7803-55-6	Vanadic acid, ammonium salt
P120	1314-62-1	Vanadium oxide V_2O_5
P120	1314-62-1	Vanadium pentoxide
P084	4549-40-0	Vinylamine, N-methyl-N-nitroso-
P001	[1]81-81-2	Warfarin, & salts, when present at concentrations greater than 0.3%
P205	137-30-4	Zinc, bis(dimethylcarbamodithioato-S,S')-,
P121	557-21-1	Zinc cyanide
P121	557-21-1	Zinc cyanide $Zn(CN)_2$
P122	1314-84-7	Zinc phosphide Zn_3P_2, when present at concentrations greater than 10% (R,T)
P205	137-30-4	Ziram.

FOOTNOTE: [1]CAS Number given for parent compound only.

6. The commercial chemical products, manufacturing chemical intermediates, or off-specification commercial chemical products referred to in parts 1 through 4 of this subparagraph, are identified as toxic wastes (T), unless otherwise designated and are subject to the small quantity generator exclusion defined in parts (1)(e) 1 and 7 of this rule.

(Comment: For the convenience of the regulated community, the primary hazardous properties of these materials have been indicated by the letters T (Toxicity), R (Reactivity), I (Ignitability) and C (Corrosivity). Absence of a letter indicates that the compound is only listed for toxicity.)

These wastes and their corresponding Hazardous Waste Codes are:

Hazardous Waste No.	Chemical Abstracts No.	Substance
U394	30558-43-1	A2213.
U001	75-07-0	Acetaldehyde (I)
U034	75-87-6	Acetaldehyde, trichloro-

U187	62-44-2	Acetamide, N-(4-ethoxyphenyl)-
U005	53-96-3	Acetamide, N-9H-fluoren-2-yl-
U240	194-75-7	Acetic acid, (2,4-dichlorophenoxy)-, salts & esters
U112	141-78-6	Acetic acid, ethyl ester (I)
U144	301-04-2	Acetic acid, lead(2+) salt
U214	563-68-8	Acetic acid, thallium(1+) salt
see F027	93-76-5	Acetic acid, (2,4,5-trichlorophenoxy)-
U002	67-64-1	Acetone (I)
U003	75-05-8	Acetonitrile (I,T)
U004	98-86-2	Acetophenone
U005	53-96-3	2-Acetylaminofluorene
U006	75-36-5	Acetyl chloride (C,R,T)
U007	79-06-1	Acrylamide
U008	79-10-7	Acrylic acid (I)
U009	107-13-1	Acrylonitrile
U011	61-82-5	Amitrole
U012	62-53-3	Aniline (I,T)
U136	75-60-5	Arsinic acid, dimethyl-
U014	492-80-8	Auramine
U015	115-02-6	Azaserine
U010	50-07-7	Azirino[2',3':3,4]pyrrolo[1,2-a]indole-4,7-dione, 6-amino-8-[[(aminocarbonyl)oxy]methyl]-1,1a,2,8,8a,8b-hexahydro-8a-methoxy-5-methyl-, [1aS-(1aalpha, 8beta,8aalpha,8balpha)]-
U280	101-27-9	Barban.
U278	22781-23-3	Bendiocarb.
U364	22961-82-6	Bendiocarb phenol.
U271	17804-35-2	Benomyl.
U157	56-49-5	Benz[j]aceanthrylene, 1,2-dihydro-3-methyl-
U016	225-51-4	Benz[c]acridine
U017	98-87-3	Benzal chloride
U192	23950-58-5	Benzamide, 3,5-dichloro-N-(1,1-dimethyl-2-propynyl)-
U018	56-55-3	Benz[a]anthracene
U094	57-97-6	Benz[a]anthracene, 7,12-dimethyl-
U012	62-53-3	Benzenamine (I,T)
U014	492-80-8	Benzenamine, 4,4'-carbonimidoylbis[N,N-dimethyl-
U049	3165-93-3	Benzenamine, 4-chloro-2-methyl-, hydrochloride
U093	60-11-7	Benzenamine, N,N-dimethyl-4-(phenylazo)-

U328	95-53-4	Benzenamine, 2-methyl-
U353	106-49-0	Benzenamine, 4-methyl-
U158	101-14-4	Benzenamine, 4,4'-methylenebis[2-chloro-
U222	636-21-5	Benzenamine, 2-methyl-, hydrochloride
U181	99-55-8	Benzenamine, 2-methyl-5-nitro-
U019	71-43-2	Benzene (I,T)
U038	510-15-6	Benzeneacetic acid, 4-chloro-alpha-(4-chlorophenyl)-alpha-hydroxy-, ethyl ester
U030	101-55-3	Benzene, 1-bromo-4-phenoxy-
U035	305-03-3	Benzenebutanoic acid, 4-[bis(2-chloroethyl)amino]-
U037	108-90-7	Benzene, chloro-
U221	25376-45-8	Benzenediamine, ar-methyl-
U028	117-81-7	1,2-Benzenedicarboxylic acid, bis(2-ethylhexyl) ester
U069	84-74-2	1,2-Benzenedicarboxylic acid, dibutyl ester
U088	84-66-2	1,2-Benzenedicarboxylic acid, diethyl ester
U102	131-11-3	1,2-Benzenedicarboxylic acid, dimethyl ester
U107	117-84-0	1,2-Benzenedicarboxylic acid, dioctyl ester
U070	95-50-1	Benzene, 1,2-dichloro-
U071	541-73-1	Benzene, 1,3-dichloro-
U072	106-46-7	Benzene, 1,4-dichloro-
U060	72-54-8	Benzene, 1,1'-(2,2-dichloroethylidene)bis[4-chloro-
U017	98-87-3	Benzene, (dichloromethyl)-
U223	26471-62-5	Benzene, 1,3-diisocyanatomethyl- (R,T)
U239	1330-20-7	Benzene, dimethyl- (I)
U201	108-46-3	1,3-Benzenediol
U127	118-74-1	Benzene, hexachloro-
U056	110-82-7	Benzene, hexahydro- (I)
U220	108-88-3	Benzene, methyl-
U105	121-14-2	Benzene, 1-methyl-2,4-dinitro-
U106	606-20-2	Benzene, 2-methyl-1,3-dinitro-
U055	98-82-8	Benzene, (1-methylethyl)- (I)
U169	98-95-3	Benzene, nitro-
U183	608-93-5	Benzene, pentachloro-
U185	82-68-8	Benzene, pentachloronitro-
U020	98-09-9	Benzenesulfonic acid chloride (C,R)
U020	98-09-9	Benzenesulfonyl chloride (C,R)
U207	95-94-3	Benzene, 1,2,4,5-tetrachloro-

U061	50-29-3	Benzene, 1,1'-(2,2,2-trichloroethylidene)bis[4-chloro-
U247	72-43-5	Benzene, 1,1'-(2,2,2-trichloroethylidene)bis[4- methoxy-
U023	98-07-7	Benzene, (trichloromethyl)-
U234	99-35-4	Benzene, 1,3,5-trinitro-
U021	92-87-5	Benzidine
U202	181-07-2	1,2-Benzisothiazol-3(2H)-one, 1,1-dioxide, & salts
U278	22781-23-3	1,3-Benzodioxol-4-ol, 2,2-dimethyl-, methyl carbamate.
U364	22961-82-6	1,3-Benzodioxol-4-ol, 2,2-dimethyl-,
U203	94-59-7	1,3-Benzodioxole, 5-(2-propenyl)-
U141	120-58-1	1,3-Benzodioxole, 5-(1-propenyl)-
U090	94-58-6	1,3-Benzodioxole, 5-propyl-
U367	1563-38-8	7-Benzofuranol, 2,3-dihydro-2,2-dimethyl-
U064	189-55-9	Benzo[rst]pentaphene
U248	181-81-2	2H-1-Benzopyran-2-one, 4-hydroxy-3-(3-oxo-1-phenylbutyl)-, & salts, when present at concentrations of 0.3% or less
U022	50-32-8	Benzo[a]pyrene
U197	106-51-4	p-Benzoquinone
U023	98-07-7	Benzotrichloride (C,R,T)
U085	1464-53-5	2,2'-Bioxirane
U021	92-87-5	[1,1'-Biphenyl]-4,4'-diamine
U073	91-94-1	[1,1'-Biphenyl]-4,4'-diamine, 3,3'-dichloro-
U091	119-90-4	[1,1'-Biphenyl]-4,4'-diamine, 3,3'-dimethoxy-
U095	119-93-7	[1,1'-Biphenyl]-4,4'-diamine, 3,3'-dimethyl-
U225	75-25-2	Bromoform
U030	101-55-3	4-Bromophenyl phenyl ether
U128	87-68-3	1,3-Butadiene, 1,1,2,3,4,4-hexachloro-
U172	924-16-3	1-Butanamine, N-butyl-N-nitroso-
U031	71-36-3	1-Butanol (I)
U159	78-93-3	2-Butanone (I,T)
U160	1338-23-4	2-Butanone peroxide (R,T)
U053	4170-30-3	2-Butenal
U074	764-41-0	2-Butene, 1,4-dichloro- (I,T)
U143	303-34-4	2-Butenoic acid, 2-methyl-, 7-[[2,3-dihydroxy- 2-(1-methoxyethyl)-3-methyl-1-oxobutoxy]methyl]- 2,3,5,7a-tetrahydro-1H-pyrrolizin-1-yl ester, [1S-[1alpha(Z),7(2S*,3R*),7aalpha]]-
U031	71-36-3	n-Butyl alcohol (I)
U136	75-60-5	Cacodylic acid

U032	13765-19-0	Calcium chromate
U372	10605-21-7	Carbamic acid, 1H-benzimidazol-2-yl, methyl ester.
U271	17804-35-2	Carbamic acid, [1-[(butylamino)carbonyl]-1H-benzimidazol-2- yl]-, methyl ester.
U280	101-27-9	Carbamic acid, (3-chlorophenyl)-, 4-chloro-2-butynyl ester.
U238	51-79-6	Carbamic acid, ethyl ester
U178	615-53-2	Carbamic acid, methylnitroso-, ethyl ester
U373	122-42-9	Carbamic acid, phenyl-, 1-methylethyl ester.
U409	23564-05-8	Carbamic acid, [1,2-phenylenebis (iminocarbonothioyl)]bis-, dimethyl ester.
U097	79-44-7	Carbamic chloride, dimethyl-
U114	[1]111-54-6	Carbamodithioic acid, 1,2-ethanediylbis-, salts & esters
U062	2303-16-4	Carbamothioic acid, bis(1-methylethyl)-, S-(2,3-dichloro-2-propenyl) ester
U389	2303-17-5	Carbamothioic acid, bis(1-methylethyl)-, S-(2,3,3-trichloro-2-propenyl) ester.
U387	52888-80-9	Carbamothioic acid, dipropyl-, S-(phenylmethyl) ester.
U279	63-25-2	Carbaryl.
U372	10605-21-7	Carbendazim.
U367	1563-38-8	Carbofuran phenol.
U215	6533-73-9	Carbonic acid, dithallium(1+) salt
U033	353-50-4	Carbonic difluoride
U156	79-22-1	Carbonochloridic acid, methyl ester (I,T)
U033	353-50-4	Carbon oxyfluoride (R,T)
U211	56-23-5	Carbon tetrachloride
U034	75-87-6	Chloral
U035	305-03-3	Chlorambucil
U036	57-74-9	Chlordane, alpha & gamma isomers
U026	494-03-1	Chlornaphazin
U037	108-90-7	Chlorobenzene
U038	510-15-6	Chlorobenzilate
U039	59-50-7	p-Chloro-m-cresol
U042	110-75-8	2-Chloroethyl vinyl ether
U044	67-66-3	Chloroform
U046	107-30-2	Chloromethyl methyl ether
U047	91-58-7	beta-Chloronaphthalene
U048	95-57-8	o-Chlorophenol
U049	3165-93-3	4-Chloro-o-toluidine, hydrochloride
U032	13765-19-0	Chromic acid H_2CrO_4, calcium salt
U050	218-01-9	Chrysene

U051		Creosote
U052	1319-77-3	Cresol (Cresylic acid)
U053	4170-30-3	Crotonaldehyde
U055	98-82-8	Cumene (I)
U246	506-68-3	Cyanogen bromide (CN)Br
U197	106-51-4	2,5-Cyclohexadiene-1,4-dione
U056	110-82-7	Cyclohexane (I)
U129	58-89-9	Cyclohexane, 1,2,3,4,5,6-hexachloro-, (1alpha,2alpha,3beta,4alpha,5alpha,6beta)-
U057	108-94-1	Cyclohexanone (I)
U130	77-47-4	1,3-Cyclopentadiene, 1,2,3,4,5,5-hexachloro-
U058	50-18-0	Cyclophosphamide
U240	194-75-7	2,4-D, salts & esters
U059	20830-81-3	Daunomycin
U060	72-54-8	DDD
U061	50-29-3	DDT
U062	2303-16-4	Diallate
U063	53-70-3	Dibenz[a,h]anthracene
U064	189-55-9	Dibenzo[a,i]pyrene
U066	96-12-8	1,2-Dibromo-3-chloropropane
U069	84-74-2	Dibutyl phthalate
U070	95-50-1	o-Dichlorobenzene
U071	541-73-1	m-Dichlorobenzene
U072	106-46-7	p-Dichlorobenzene
U073	91-94-1	3,3'-Dichlorobenzidine
U074	764-41-0	1,4-Dichloro-2-butene (I,T)
U075	75-71-8	Dichlorodifluoromethane
U078	75-35-4	1,1-Dichloroethylene
U079	156-60-5	1,2-Dichloroethylene
U025	111-44-4	Dichloroethyl ether
U027	108-60-1	Dichloroisopropyl ether
U024	111-91-1	Dichloromethoxy ethane
U081	120-83-2	2,4-Dichlorophenol
U082	87-65-0	2,6-Dichlorophenol
U084	542-75-6	1,3-Dichloropropene
U085	1464-53-5	1,2:3,4-Diepoxybutane (I,T)
U395	5952-26-1	Diethylene glycol, dicarbamate.

U108	123-91-1	1,4-Diethyleneoxide
U028	117-81-7	Diethylhexyl phthalate
U086	1615-80-1	N,N'-Diethylhydrazine
U087	3288-58-2	O,O-Diethyl S-methyl dithiophosphate
U088	84-66-2	Diethyl phthalate
U089	56-53-1	Diethylstilbesterol
U090	94-58-6	Dihydrosafrole
U091	119-90-4	3,3'-Dimethoxybenzidine
U092	124-40-3	Dimethylamine (I)
U093	60-11-7	p-Dimethylaminoazobenzene
U094	57-97-6	7,12-Dimethylbenz[a]anthracene
U095	119-93-7	3,3'-Dimethylbenzidine
U096	80-15-9	alpha,alpha-Dimethylbenzylhydroperoxide (R)
U097	79-44-7	Dimethylcarbamoyl chloride
U098	57-14-7	1,1-Dimethylhydrazine
U099	540-73-8	1,2-Dimethylhydrazine
U101	105-67-9	2,4-Dimethylphenol
U102	131-11-3	Dimethyl phthalate
U103	77-78-1	Dimethyl sulfate
U105	121-14-2	2,4-Dinitrotoluene
U106	606-20-2	2,6-Dinitrotoluene
U107	117-84-0	Di-n-octyl phthalate
U108	123-91-1	1,4-Dioxane
U109	122-66-7	1,2-Diphenylhydrazine
U110	142-84-7	Dipropylamine (I)
U111	621-64-7	Di-n-propylnitrosamine
U041	106-89-8	Epichlorohydrin
U001	75-07-0	Ethanal (I)
U174	55-18-5	Ethanamine, N-ethyl-N-nitroso-
U404	121-44-8	Ethanamine, N,N-diethyl-
U155	91-80-5	1,2-Ethanediamine, N,N-dimethyl-N'-2-pyridinyl-N'-(2-thienylmethyl)-
U067	106-93-4	Ethane, 1,2-dibromo-
U076	75-34-3	Ethane, 1,1-dichloro-
U077	107-06-2	Ethane, 1,2-dichloro-
U131	67-72-1	Ethane, hexachloro-
U024	111-91-1	Ethane, 1,1'-[methylenebis(oxy)]bis[2-chloro-

U117	60-29-7	Ethane, 1,1'-oxybis-(I)
U025	111-44-4	Ethane, 1,1'-oxybis[2-chloro-
U184	76-01-7	Ethane, pentachloro-
U208	630-20-6	Ethane, 1,1,1,2-tetrachloro-
U209	79-34-5	Ethane, 1,1,2,2-tetrachloro-
U218	62-55-5	Ethanethioamide
U226	71-55-6	Ethane, 1,1,1-trichloro-
U227	79-00-5	Ethane, 1,1,2-trichloro-
U410	59669-26-0	Ethanimidothioic acid, N,N'- [thiobis[(methylimino)carbonyloxy]]bis-, dimethyl ester
U394	30558-43-1	Ethanimidothioic acid, 2-(dimethylamino)-N-hydroxy-2-oxo-, methyl ester.
U359	110-80-5	Ethanol, 2-ethoxy-
U173	1116-54-7	Ethanol, 2,2'-(nitrosoimino)bis-
U395	5952-26-1	Ethanol, 2,2'-oxybis-, dicarbamate.
U004	98-86-2	Ethanone, 1-phenyl-
U043	75-01-4	Ethene, chloro-
U042	110-75-8	Ethene, (2-chloroethoxy)-
U078	75-35-4	Ethene, 1,1-dichloro-
U079	156-60-5	Ethene, 1,2-dichloro-, (E)-
U210	127-18-4	Ethene, tetrachloro-
U228	79-01-6	Ethene, trichloro-
U112	141-78-6	Ethyl acetate (I)
U113	140-88-5	Ethyl acrylate (I)
U238	51-79-6	Ethyl carbamate (urethane)
U117	60-29-7	Ethyl ether (I)
U114	[1]111-54-6	Ethylenebisdithiocarbamic acid, salts & esters
U067	106-93-4	Ethylene dibromide
U077	107-06-2	Ethylene dichloride
U359	110-80-5	Ethylene glycol monoethyl ether
U115	75-21-8	Ethylene oxide (I,T)
U116	96-45-7	Ethylenethiourea
U076	75-34-3	Ethylidene dichloride
U118	97-63-2	Ethyl methacrylate
U119	62-50-0	Ethyl methanesulfonate
U120	206-44-0	Fluoranthene
U122	50-00-0	Formaldehyde
U123	64-18-6	Formic acid (C,T)

U124	110-00-9	Furan (I)
U125	98-01-1	2-Furancarboxaldehyde (I)
U147	108-31-6	2,5-Furandione
U213	109-99-9	Furan, tetrahydro-(I)
U125	98-01-1	Furfural (I)
U124	110-00-9	Furfuran (I)
U206	18883-66-4	Glucopyranose, 2-deoxy-2-(3-methyl-3-nitrosoureido)-, D-
U206	18883-66-4	D-Glucose, 2-deoxy-2-[[(methylnitrosoamino)- carbonyl]amino]-
U126	765-34-4	Glycidylaldehyde
U163	70-25-7	Guanidine, N-methyl-N'-nitro-N-nitroso-
U127	118-74-1	Hexachlorobenzene
U128	87-68-3	Hexachlorobutadiene
U130	77-47-4	Hexachlorocyclopentadiene
U131	67-72-1	Hexachloroethane
U132	70-30-4	Hexachlorophene
U243	1888-71-7	Hexachloropropene
U133	302-01-2	Hydrazine (R,T)
U086	1615-80-1	Hydrazine, 1,2-diethyl-
U098	57-14-7	Hydrazine, 1,1-dimethyl-
U099	540-73-8	Hydrazine, 1,2-dimethyl-
U109	122-66-7	Hydrazine, 1,2-diphenyl-
U134	7664-39-3	Hydrofluoric acid (C,T)
U134	7664-39-3	Hydrogen fluoride (C,T)
U135	7783-06-4	Hydrogen sulfide
U135	7783-06-4	Hydrogen sulfide H_2S
U096	80-15-9	Hydroperoxide, 1-methyl-1-phenylethyl- (R)
U116	96-45-7	2-Imidazolidinethione
U137	193-39-5	Indeno[1,2,3-cd]pyrene
U190	85-44-9	1,3-Isobenzofurandione
U140	78-83-1	Isobutyl alcohol (I,T)
U141	120-58-1	Isosafrole
U142	143-50-0	Kepone
U143	303-34-4	Lasiocarpine
U144	301-04-2	Lead acetate
U146	1335-32-6	Lead, bis(acetato-O)tetrahydroxytri-
U145	7446-27-7	Lead phosphate

U146	1335-32-6	Lead subacetate
U129	58-89-9	Lindane
U163	70-25-7	MNNG
U147	108-31-6	Maleic anhydride
U148	123-33-1	Maleic hydrazide
U149	109-77-3	Malononitrile
U150	148-82-3	Melphalan
U151	7439-97-6	Mercury
U152	126-98-7	Methacrylonitrile (I, T)
U092	124-40-3	Methanamine, N-methyl- (I)
U029	74-83-9	Methane, bromo-
U045	74-87-3	Methane, chloro- (I, T)
U046	107-30-2	Methane, chloromethoxy-
U068	74-95-3	Methane, dibromo-
U080	75-09-2	Methane, dichloro-
U075	75-71-8	Methane, dichlorodifluoro-
U138	74-88-4	Methane, iodo-
U119	62-50-0	Methanesulfonic acid, ethyl ester
U211	56-23-5	Methane, tetrachloro-
U153	74-93-1	Methanethiol (I, T)
U225	75-25-2	Methane, tribromo-
U044	67-66-3	Methane, trichloro-
U121	75-69-4	Methane, trichlorofluoro-
U036	57-74-9	4,7-Methano-1H-indene, 1,2,4,5,6,7,8,8-octachloro-2,3,3a,4,7,7a-hexahydro-
U154	67-56-1	Methanol (I)
U155	91-80-5	Methapyrilene
U142	143-50-0	1,3,4-Metheno-2H-cyclobuta[cd]pentalen-2-one, 1,1a,3,3a,4,5,5,5a,5b,6-decachlorooctahydro-
U247	72-43-5	Methoxychlor
U154	67-56-1	Methyl alcohol (I)
U029	74-83-9	Methyl bromide
U186	504-60-9	1-Methylbutadiene (I)
U045	74-87-3	Methyl chloride (I,T)
U156	79-22-1	Methyl chlorocarbonate (I,T)
U226	71-55-6	Methyl chloroform
U157	56-49-5	3-Methylcholanthrene

U158	101-14-4	4,4'-Methylenebis(2-chloroaniline)
U068	74-95-3	Methylene bromide
U080	75-09-2	Methylene chloride
U159	78-93-3	Methyl ethyl ketone (MEK) (I,T)
U160	1338-23-4	Methyl ethyl ketone peroxide (R,T)
U138	74-88-4	Methyl iodide
U161	108-10-1	Methyl isobutyl ketone (I)
U162	80-62-6	Methyl methacrylate (I,T)
U161	108-10-1	4-Methyl-2-pentanone (I)
U164	56-04-2	Methylthiouracil
U010	50-07-7	Mitomycin C
U059	20830-81-3	5,12-Naphthacenedione, 8-acetyl-10-[(3-amino-2,3,6-trideoxy)-alpha-L-lyxo-hexopyranosyl)oxy]-7,8,9,10-tetrahydro-6,8,11-trihydroxy-1-methoxy-, (8S-cis)-
U167	134-32-7	1-Naphthalenamine
U168	91-59-8	2-Naphthalenamine
U026	494-03-1	Naphthalenamine, N,N'-bis(2-chloroethyl)-
U165	91-20-3	Naphthalene
U047	91-58-7	Naphthalene, 2-chloro-
U166	130-15-4	1,4-Naphthalenedione
U236	72-57-1	2,7-Naphthalenedisulfonic acid, 3,3'-[(3,3'- dimethyl[1,1'-biphenyl]-4,4'-diyl)bis(azo)bis[5-amino-4-hydroxy]-, tetrasodium salt
U279	63-25-2	1-Naphthalenol, methylcarbamate.
U166	130-15-4	1,4-Naphthoquinone
U167	134-32-7	alpha-Naphthylamine
U168	91-59-8	beta-Naphthylamine
U217	10102-45-1	Nitric acid, thallium(1+) salt
U169	98-95-3	Nitrobenzene (I,T)
U170	100-02-7	p-Nitrophenol
U171	79-46-9	2-Nitropropane (I,T)
U172	924-16-3	N-Nitrosodi-n-butylamine
U173	1116-54-7	N-Nitrosodiethanolamine
U174	55-18-5	N-Nitrosodiethylamine
U176	759-73-9	N-Nitroso-N-ethylurea
U177	684-93-5	N-Nitroso-N-methylurea
U178	615-53-2	N-Nitroso-N-methylurethane
U179	100-75-4	N-Nitrosopiperidine
U180	930-55-2	N-Nitrosopyrrolidine

U181	99-55-8	5-Nitro-o-toluidine
U193	1120-71-4	1,2-Oxathiolane, 2,2-dioxide
U058	50-18-0	2H-1,3,2-Oxazaphosphorin-2-amine, N,N-bis(2-chloroethyl)tetrahydro-, 2-oxide
U115	75-21-8	Oxirane (I,T)
U126	765-34-4	Oxiranecarboxyaldehyde
U041	106-89-8	Oxirane, (chloromethyl)-
U182	123-63-7	Paraldehyde
U183	608-93-5	Pentachlorobenzene
U184	76-01-7	Pentachloroethane
U185	82-68-8	Pentachloronitrobenzene (PCNB)
See F027	87-86-5	Pentachlorophenol
U161	108-10-1	Pentanol, 4-methyl-
U186	504-60-9	1,3-Pentadiene (I)
U187	62-44-2	Phenacetin
U188	108-95-2	Phenol
U048	95-57-8	Phenol, 2-chloro-
U039	59-50-7	Phenol, 4-chloro-3-methyl-
U081	120-83-2	Phenol, 2,4-dichloro-
U082	87-65-0	Phenol, 2,6-dichloro-
U089	56-53-1	Phenol, 4,4'-(1,2-diethyl-1,2-ethenediyl)bis-, (E)-
U101	105-67-9	Phenol, 2,4-dimethyl-
U052	1319-77-3	Phenol, methyl-
U132	70-30-4	Phenol, 2,2'-methylenebis[3,4,6-trichloro-
U411	114-26-1	Phenol, 2-(1-methylethoxy)-, methylcarbamate.
U170	100-02-7	Phenol, 4-nitro-
See F027	87-86-5	Phenol, pentachloro-
See F027	58-90-2	Phenol, 2,3,4,6-tetrachloro-
See F027	95-95-4	Phenol, 2,4,5-trichloro-
See F027	88-06-2	Phenol, 2,4,6-trichloro-
U150	148-82-3	L-Phenylalanine, 4-[bis(2-chloroethyl)amino]-
U145	7446-27-7	Phosphoric acid, lead(2+) salt (2:3)
U087	3288-58-2	Phosphorodithioic acid, O,O-diethyl S-methyl ester
U189	1314-80-3	Phosphorus sulfide (R)
U190	85-44-9	Phthalic anhydride
U191	109-06-8	2-Picoline
U179	100-75-4	Piperidine, 1-nitroso-

U192	23950-58-5	Pronamide
U194	107-10-8	1-Propanamine (I,T)
U111	621-64-7	1-Propanamine, N-nitroso-N-propyl-
U110	142-84-7	1-Propanamine, N-propyl- (I)
U066	96-12-8	Propane, 1,2-dibromo-3-chloro-
U083	78-87-5	Propane, 1,2-dichloro-
U149	109-77-3	Propanedinitrile
U171	79-46-9	Propane, 2-nitro- (I,T)
U027	108-60-1	Propane, 2,2'-oxybis[2-chloro-
U193	1120-71-4	1,3-Propane sultone
See F027	93-72-1	Propanoic acid, 2-(2,4,5-trichlorophenoxy)-
U235	126-72-7	1-Propanol, 2,3-dibromo-, phosphate (3:1)
U140	78-83-1	1-Propanol, 2-methyl- (I,T)
U002	67-64-1	2-Propanone (I)
U007	79-06-1	2-Propenamide
U084	542-75-6	1-Propene, 1,3-dichloro-
U243	1888-71-7	1-Propene, 1,1,2,3,3,3-hexachloro-
U009	107-13-1	2-Propenenitrile
U152	126-98-7	2-Propenenitrile, 2-methyl- (I,T)
U008	79-10-7	2-Propenoic acid (I)
U113	140-88-5	2-Propenoic acid, ethyl ester (I)
U118	97-63-2	2-Propenoic acid, 2-methyl-, ethyl ester
U162	80-62-6	2-Propenoic acid, 2-methyl-, methyl ester (I,T)
U373	122-42-9	Propham.
U411	114-26-1	Propoxur.
U194	107-10-8	n-Propylamine (I,T)
U083	78-87-5	Propylene dichloride
U387	52888-80-9	Prosulfocarb.
U148	123-33-1	3,6-Pyridazinedione, 1,2-dihydro-
U196	110-86-1	Pyridine
U191	109-06-8	Pyridine, 2-methyl-
U237	66-75-1	2,4-(1H,3H)-Pyrimidinedione, 5-[bis(2- chloroethyl)amino]-
U164	56-04-2	4(1H)-Pyrimidinone, 2,3-dihydro-6-methyl-2-thioxo-
U180	930-55-2	Pyrrolidine, 1-nitroso-
U200	50-55-5	Reserpine
U201	108-46-3	Resorcinol

U202	181-07-2	Saccharin, & salts
U203	94-59-7	Safrole
U204	7783-00-8	Selenious acid
U204	7783-00-8	Selenium dioxide
U205	7488-56-4	Selenium sulfide
U205	7488-56-4	Selenium sulfide SeS_2 (R,T)
U015	115-02-6	L-Serine, diazoacetate (ester)
See F027	93-72-1	Silvex (2,4,5-TP)
U206	18883-66-4	Streptozotocin
U103	77-78-1	Sulfuric acid, dimethyl ester
U189	1314-80-3	Sulfur phosphide (R)
See F027	93-76-5	2,4,5-T
U207	95-94-3	1,2,4,5-Tetrachlorobenzene
U208	630-20-6	1,1,1,2-Tetrachloroethane
U209	79-34-5	1,1,2,2-Tetrachloroethane
U210	127-18-4	Tetrachloroethylene
See F027	58-90-2	2,3,4,6-Tetrachlorophenol
U213	109-99-9	Tetrahydrofuran (I)
U214	563-68-8	Thallium(I) acetate
U215	6533-73-9	Thallium(I) carbonate
U216	7791-12-0	Thallium(I) chloride
U216	7791-12-0	Thallium chloride TlCl
U217	10102-45-1	Thallium(I) nitrate
U218	62-55-5	Thioacetamide
U410	59669-26-0	Thiodicarb.
U153	74-93-1	Thiomethanol (I,T)
U244	137-26-8	Thioperoxydicarbonic diamide $[(H_2N)C(S)]_2S_2$, tetramethyl-
U409	23564-05-8	Thiophanate-methyl.
U219	62-56-6	Thiourea
U244	137-26-8	Thiram
U220	108-88-3	Toluene
U221	25376-45-8	Toluenediamine
U223	26471-62-5	Toluene diisocyanate (R,T)
U328	95-53-4	o-Toluidine
U353	106-49-0	p-Toluidine
U222	636-21-5	o-Toluidine hydrochloride

U389	2303-17-5	Triallate.
U011	61-82-5	1H-1,2,4-Triazol-3-amine
U227	79-00-5	1,1,2-Trichloroethane
U228	79-01-6	Trichloroethylene
U121	75-69-4	Trichloromonofluoromethane
See F027	95-95-4	2,4,5-Trichlorophenol
See F027	88-06-2	2,4,6-Trichlorophenol
U404	121-44-8	Triethylamine.
U234	99-35-4	1,3,5-Trinitrobenzene (R,T)
U182	123-63-7	1,3,5-Trioxane, 2,4,6-trimethyl-
U235	126-72-7	Tris(2,3-dibromopropyl) phosphate
U236	72-57-1	Trypan blue
U237	66-75-1	Uracil mustard
U176	759-73-9	Urea, N-ethyl-N-nitroso-
U177	684-93-5	Urea, N-methyl-N-nitroso-
U043	75-01-4	Vinyl chloride
U248	[1]81-81-2	Warfarin, & salts, when present at concentrations of 0.3% or less
U239	1330-20-7	Xylene (I)
U200	50-55-5	Yohimban-16-carboxylic acid, 11,17-dimethoxy-18-[(3,4,5-trimethoxybenzoyl)oxy]-, methyl ester, (3beta,16beta,17alpha,18beta,20alpha)-
U249	1314-84-7	Zinc phosphide Zn_3P_2, when present at concentrations of 10% or less

FOOTNOTE: [1]CAS Number given for parent compound only.

(e) (RESERVED) [40 CFR 261.34]

(f) Deletion of Certain Hazardous Waste Codes Following Equipment Cleaning and Replacement [40 CFR 261.35]

1. Wastes from wood preserving processes at plants that do not resume or initiate use of chlorophenolic preservatives will not meet the listing definition of F032 once the generator has met all of the requirements of parts 2 and 3 of this subparagraph. These wastes may, however, continue to meet another hazardous waste listing description or may exhibit one or more of the hazardous waste characteristics.

2. Generators must either clean or replace all process equipment that may have come into contact with chlorophenolic formulations or constituents thereof, including, but not limited to, treatment cylinders, sumps, tanks, piping systems, drip pads, fork lifts, and trams, in a manner that minimizes or eliminates the escape of hazardous waste or constituents, leachate, contaminated drippage, or hazardous waste decomposition products to the ground water, surface water, or atmosphere.

(i) Generators shall do one of the following:

(I) Prepare and follow an equipment cleaning plan and clean equipment in accordance with this part;

(II) Prepare and follow an equipment replacement plan and replace equipment in accordance with this part; or

(III) Document cleaning and replacement in accordance with this part, carried out after termination of use of chlorophenolic preservations.

(ii) Cleaning Requirements:

(I) Prepare and sign a written equipment cleaning plan that describes:

I. The equipment to be cleaned;

II. How the equipment will be cleaned;

III. The solvent to be used in cleaning;

IV. How solvent rinses will be tested; and

V. How cleaning residues will be disposed.

(II) Equipment must be cleaned as follows:

I. Remove all visible residues from process equipment;

II. Rinse process equipment with an appropriate solvent until dioxins and dibenzofurans are not detected in the final solvent rinse.

(III) Analytical requirements:

I. Rinses must be tested by using an appropriate method;

II. "Not detected" means at or below the following lower method calibration limits (MCLs): The 2, 3, 7, 8-TCDD-based MCL- - 0.01 parts per trillion (ppt), sample weight of 1000 g, IS spiking level of 1 ppt, final extraction volume of 10-50 µL. For other congeners- -multiply the values by 1 for TCDF/PeCDD/PeCDF, by 2.5 for HxCDD/HxCDF/HpCDD/HpCDF, and by 5 for OCDD/OCDF.

(IV) The generator must manage all residues from the cleaning process as F032 waste.

(iii) Replacement requirements:

(I) Prepare and sign a written equipment replacement plan that describes:

I. The equipment to be replaced;

II. How the equipment will be replaced; and

III. How the equipment will be disposed.

(II) The generator must manage the discarded equipment as F032 waste.

(iv) Documentation requirements:

(l) Document that previous equipment cleaning and/or replacement was performed in accordance with this part and occurred after cessation of use of chlorophenolic preservatives.

3. The generator must maintain the following records documenting the cleaning and replacement as part of the facility's operating record:

(i) The name and address of the facility;

(ii) Formulations previously used and the date on which their use ceased in each process at the plant;

(iii) Formulations currently used in each process at the plant;

(iv) The equipment cleaning or replacement plan;

(v) The name and address of any persons who conducted the cleaning and replacement;

(vi) The dates on which cleaning and replacement were accomplished;

(vii) The dates of sampling and testing;

(viii) A description of the sample handling and preparation techniques, including techniques used for extraction, containerization, preservation, and chain-of-custody of the samples;

(ix) A description of the tests performed, the date the tests were performed, and the results of the tests;

(x) The name and model numbers of the instrument(s) used in performing the tests;

(xi) QA/QC documentation; and

(xii) The following statement signed by the generator or his authorized representative:

"I certify under penalty of law that all process equipment required to be cleaned or replaced under Rule 0400-12-01-.02(4)(f) was cleaned or replaced as represented in the equipment cleaning and replacement plan and accompanying documentation. I am aware that there are significant penalties for providing false information, including the possibility of fine or imprisonment."

(g) (RESERVED) [40 CFR 261.36]

(h) (RESERVED) [40 CFR 261.37]

(5) Appendices to Rule 0400-12-01-.02 [Appendices to 40 CFR 261]

Appendix I -- Representative Sampling Methods

The methods and equipment used for sampling waste materials will vary with the form and consistency of the waste materials to be sampled. Samples collected using the sampling protocols listed below, for sampling waste with properties similar to the indicated materials, will be considered by the Department to be representative of the waste.

Extremely viscous liquid -- ASTM Standard D140-70 Crushed or powdered material -- ASTM Standard D346-75 Soil or rock-like material -- ASTM Standard D420-69 Soil-like material -- ASTM Standard D1452-65

Fly Ash-like material -- ASTM Standard D2234-76 (ASTM Standards are available from ASTM, 1916 Race St., Philadelphia, PA 19103)

Containerized liquid waste -- "COLIWASA"

Liquid waste in pits, ponds, lagoons, and similar reservoirs -- "Pond Sampler"

SW-846 also contains additional information on the application of these protocols.

Appendix II – (RESERVED)

Appendix III – (RESERVED)

Appendix IV -- (RESERVED) - Radioactive Waste Test Methods

Appendix V -- (RESERVED) - Infectious Waste Treatment Specifications

Appendix VI -- (RESERVED) - Etiologic Agents

Appendix VII -- Basis for Listing Hazardous Waste

Hazardous Waste Code	Hazardous Constituents for Which Listed
F001	Tetrachloroethylene, methylene chloride trichloroethylene, 1,1,1-trichloroethane, carbon tetrachloride, chlorinated fluorocarbons.
F002	Tetrachloroethylene, methylene chloride, trichloroethylene, 1,1,1-trichloroethane, 1,1,2-trichloroethane, chlorobenzene, 1,1,2-trichloro-1,2,2-trifluoroethane, ortho-dichlorobenzene, trichlorofluoromethane.
F003	N.A.
F004	Cresols and cresylic acid, nitrobenzene.
F005	Toluene, methyl ethyl ketone, carbon disulfide, isobutanol, pyridine, 2-ethoxyethanol, benzene, 2-nitropropane.
F006	Cadmium, hexavalent chromium, nickel, cyanide (complexed).
F007	Cyanide (salts).
F008	Cyanide (salts).
F009	Cyanide (salts).
F010	Cyanide (salts).
F011	Cyanide (salts).
F012	Cyanide (complexed).
F019	Hexavalent chromium, cyanide (complexed).
F020	Tetra- and pentachlorodibenzo-p-dioxins; tetra and pentachlorodi-benzofurans; tri- and tetrachlorophenols and their chlorophenoxy derivative acids, esters, ethers, amine and other salts.
F021	Penta- and hexachlorodibenzo-p-dioxins; penta- and hexachlorodibenzofurans; pentachlorophenol and its derivatives.
F022	Tetra-, penta-, and hexachlorodibenzo-p-dioxins; tetra-, penta-, and hexachlorodibenzofurans.

F023	Tetra-, and pentachlorodibenzo-p-dioxins; tetra- and pentachlorodibenzofurans; tri- and tetrachlorophenols and their chlorophenoxy derivative acids, esters, ethers, amine and other salts.
F024	Chloromethane, dichloromethane, trichloromethane, carbon tetrachloride, chloroethylene, 1,1-dichloroethane, 1,2-dichloroethane, trans-1-2-dichloroethylene, 1,1-dichloroethylene, 1,1,1-trichloroethane, 1,1,2-trichloroethane, trichloroethylene, 1,1,1,2-tetra-chloroethane, 1,1,2,2-tetrachloroethane, tetrachloroethylene, pentachloroethane, hexachloroethane, allyl chloride (3-chloropropene), dichloropropane, dichloropropene, 2-chloro-1,3-butadiene, hexachloro-1,3-butadiene, hexachlorocyclopentadiene, hexachlorocyclohexane, benzene, chlorbenzene, dichlorobenzenes, 1,2,4-trichlorobenzene, tetrachlorobenzene, pentachlorobenzene, hexachlorobenzene, toluene, naphthalene.
F025	Chloromethane; Dichloromethane; Trichloromethane; Carbon tetrachloride; Chloroethylene; 1,1-Dichloroethane; 1,2-Dichloroethane; trans-1,2-Dichloroethylene; 1,1-Dichloroethylene; 1,1,1-Trichloroethane; 1,1,2-Trichloroethane; Trichloroethylene; 1,1,1,2-Tetrachloroethane; 1,1,2,2-Tetrachloroethane; Tetrachloroethylene; Pentachloroethane; Hexachloroethane; Allyl chloride (3-Chloropropene); Dichloropropane; Dichloropropene; 2-Chloro-1,3-butadiene; Hexachloro-1,3-butadiene; Hexachlorocyclopentadiene; Benzene; Chlorobenzene; Dichlorobenzene; 1,2,4-Trichlorobenzene; Tetrachlorobenzene; Pentachlorobenzene; Hexachlorobenzene; Toluene; Naphthalene.
F026	Tetra-, penta-, and hexachlorodibenzo-p-dioxins; tetra-, penta-, and hexachlorodibenzofurans.
F027	Tetra-, penta-, and hexachlorodibenzo-p-dioxins; tetra-, penta-, and hexachlorodibenzofurans; tri-, tetra-, and pentachlorophenols and their chlorophenoxy derivative acids, esters, ethers, amine and other salts.
F028	Tetra-, penta-, and hexachlorodibenzo-p-dioxins; tetra-, penta-, and hexachlorodibenzofurans; tri-, tetra-, and pentachlorophenols and their chlorophenoxy derivative acids, esters, ethers, amine and other salts.
F032	Benz(a)anthracene, benzo(a)pyrene, dibenz(a,h)-anthracene,indeno(1,2,3-cd)pyrene, pentachlorophenol, arsenic, chromium, tetra-, penta-, hexa-, heptachlorodibenzo-p-dioxins, tetra-, penta-, hexa-, heptachlorodibenzofurans.
F034	Benz(a)anthracene, benzo(k)fluoranthene, benzo(a)pyrene, dibenz(a,h)anthracene, indeno(1,2,3-cd)pyrene, naphthalene, arsenic, chromium.
F035	Arsenic, chromium, lead.
F037	Benzene, benzo(a)pyrene, chrysene, lead, chromium.
F038	Benzene, benzo(a)pyrene, chrysene, lead, chromium.
F039	All constituents for which treatment standards are specified for multi-source leachate (wastewaters and nonwastewaters) under 40 CFR 268.43, Table CCW.
K001	Pentachlorophenol, phenol, 2-chlorophenol, p-chloro-m-cresol, 2,4-dimethylphenyl, 2,4-dinitrophenol, trichlorophenols, tetrachlorophenols, 2,4-dinitrophenol, creosote, chrysene, naphthalene, fluoranthene, benzo(b)fluoranthene, benzo(a)pyrene, indeno(1,2,3-cd)pyrene, benz(a)anthracene, dibenz(a)anthracene, acenaphthalene.
K002	Hexavalent chromium, lead
K003	Hexavalent chromium, lead.
K004	Hexavalent chromium.
K005	Hexavalent chromium, lead.
K006	Hexavalent chromium.

K007	Cyanide (complexed), hexavalent chromium.
K008	Hexavalent chromium.
K009	Chloroform, formaldehyde, methylene chloride, methyl chloride, paraldehyde, formic acid.
K010	Chloroform, formaldehyde, methylene chloride, methyl chloride, paraldehyde, formic acid, chloroacetaldehyde.
K011	Acrylonitrile, acetonitrile, hydrocyanic acid.
K013	Hydrocyanic acid, acrylonitrile, acetonitrile.
K014	Acetonitrile, acrylamide.
K015	Benzyl chloride, chlorobenzene, toluene, benzotrichloride.
K016	Hexachlorobenzene, hexachlorobutadiene, carbon tetrachloride, hexachloroethane, perchloroethylene.
K017	Epichlorohydrin, chloroethers [bis(chloromethyl) ether and bis (2-chloroethyl) ethers], trichloropropane, dichloropropanols.
K018	1,2-dichloroethane, trichloroethylene, hexachlorobutadiene, hexachlorobenzene.
K019	Ethylene dichloride, 1,1,1-trichloroethane, 1,1,2-trichloroethane, tetrachloroethanes (1,1,2,2-tetrachloroethane and 1,1,1,2-tetrachloroethane), trichloroethylene, tetrachloroethylene, carbon tetrachloride, chloroform, vinyl chloride, vinylidene chloride.
K020	Ethylene dichloride, 1,1,1-trichloroethane, 1,1,2-trichloroethane, tetrachloroethanes (1,1,2,2-tetrachloroethane and 1,1,1,2-tetrachloroethane), trichloroethylene, tetrachloroethylene, carbon tetrachloride, chloroform, vinyl chloride, vinylidene chloride.
K021	Antimony, carbon tetrachloride, chloroform.
K022	Phenol, tars (polycyclic aromatic hydrocarbons).
K023	Phthalic anhydride, maleic anhydride.
K024	Phthalic anhydride, 1,4-naphthoquinone.
K025	Meta-dinitrobenzene, 2,4-dinitrotoluene.
K026	Paraldehyde, pyridines, 2-picoline.
K027	Toluene diisocyanate, toluene-2, 4-diamine.
K028	1,1,1-trichloroethane, vinyl chloride.
K029	1,2-dichloroethane, 1,1,1-trichloroethane, vinyl chloride, vinylidene chloride, chloroform.
K030	Hexachlorobenzene, hexachlorobutadiene, hexachloroethane, 1,1,1,2-tetrachloroethane, 1,1,2,2-tetrachloroethane, ethylene dichloride.
K031	Arsenic.
K032	Hexachlorocyclopentadiene.
K033	Hexachlorocyclopentadiene.
K034	Hexachlorocyclopentadiene.

K035	Creosote, chrysene, naphthalene, fluoranthene benzo(b) fluoranthene, benzo(a)pyrene, indeno(1,2,3-cd) pyrene, benzo(a)anthracene, dibenzo(a)anthracene, acenaphthalene.
K036	Toluene, phosphorodithioic and phosphorothioic acid esters.
K037	Toluene, phosphorodithioic and phosphorothioic acid esters.
K038	Phorate, formaldehyde, phosphorodithioic and phosphorothioic acid esters.
K039	Phosphorodithioic and phosphorothioic acid esters.
K040	Phorate, formaldehyde, phosphorodithioic and phosphorothioic acid esters.
K041	Toxaphene.
K042	Hexachlorobenzene, ortho-dichlorobenzene.
K043	2,4-dichlorophenol, 2,6-dichlorophenol, 2,4,6-trichlorophenol.
K044	N.A.
K045	N.A.
K046	Lead.
K047	N.A.
K048	Hexavalent chromium, lead.
K049	Hexavalent chromium, lead.
K050	Hexavalent chromium.
K051	Hexavalent chromium, lead.
K052	Lead.
K060	Cyanide, napthalene, phenolic compounds, arsenic.
K061	Hexavalent chromium, lead, cadmium.
K062	Hexavalent chromium, lead.
K069	Hexavalent chromium, lead, cadmium.
K071	Mercury.
K073	Chloroform, carbon tetrachloride, hexachloroethane, trichloroethane, tetrachloroethylene, dichloroethylene, 1,1,2,2-tetrachloroethane.
K083	Aniline, diphenylamine, nitrobenzene, phenylenediamine.
K084	Arsenic.
K085	Benzene, dichlorobenzenes, trichlorobenzenes, tetrachlorobenzenes, pentachlorobenzene, hexachlorobenzene, benzyl chloride.
K086	Lead, hexavalent chromium.
K087	Phenol, naphthalene.
K088	Cyanide (complexes).
K093	Phthalic anhydride, maleic anhydride.
K094	Phthalic anhydride.
K095	1,1,2-trichloroethane, 1,1,1,2-tetrachloroethane, 1,1,2,2-tetrachloroethane.
K096	1,2-dichloroethane, 1,1,1-trichloroethane, 1,1,2-trichloroethane.

K097	Chlordane, heptachlor.
K098	Toxaphene.
K099	2,4-dichlorophenol, 2,4,6-trichlorophenol.
K100	Hexavalent chromium, lead, cadmium.
K101	Arsenic.
K102	Arsenic.
K103	Aniline, nitrobenzene, phenylenediamine.
K104	Aniline, benzene, diphenylamine, nitrobenzene, phenylenediamine.
K105	Benzene, monochlorobenzene, dichlorobenzenes, 2,4,6-trichlorophenol.
K106	Mercury.
K107	1,1-Dimethylhydrazine (UDMH).
K108	1,1-Dimethylhydrazine (UDMH).
K109	1,1-Dimethylhydrazine (UDMH).
K110	1,1-Dimethylhydrazine (UDMH).
K111	2,4-Dinitrotoluene.
K112	2,4-Toluenediamine, o-toluidine, p-toluidine, aniline.
K113	2,4-Toluenediamine, o-toluidine, p-toluidine, aniline.
K114	2,4-Toluenediamine, o-toluidine, p-toluidine.
K115	2,4-Toluenediamine.
K116	Carbon tetrachloride, tetrachloroethylene, chloroform, phosgene.
K117	Ethylene dibromide.
K118	Ethylene dibromide.
K123	Ethylene thiourea.
K124	Ethylene thiourea.
K125	Ethylene thiourea.
K126	Ethylene thiourea.
K131	Dimethyl sulfate, methyl bromide.
K132	Methyl bromide.
K136	Ethylene dibromide.
K141	Benzene, benz(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, dibenz(a,h)anthracene, indeno(1,2,3-cd)pyrene.
K142	Benzene, benz(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, dibenz(a,h)anthracene, indeno(1,2,3-cd)pyrene.
K143	Benzene, benz(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene.
K144	Benzene, benz(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, dibenz(a,h)anthracene.
K145	Benzene, benz(a)anthracene, benzo(a)pyrene, dibenz(a,h)anthracene, naphthalene.

K147	Benzene, benz(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, dibenz(a,h)anthracene, indeno(1,2,3-cd)pyrene.
K148	Benz(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, dibenz(a,h)anthracene, indeno(1,2,3-cd)pyrene.
K149	Benzotrichloride, benzyl chloride, chloroform, chloromethane, chlorobenzene, 1,4-dichlorobenzene, hexachlorobenzene, pentachlorobenzene, 1,2,4,5-tetrachlorobenzene, toluene.
K150	Carbon tetrachloride, chloroform, chloromethane, 1,4-dichlorobenzene, hexachlorobenzene, pentachlorobenzene, 1,2,4,5-tetrachlorobenzene, 1,1,2,2-tetrachloroethane, tetrachloroethylene, 1,2,4-trichlorobenzene.
K151	Benzene, carbon tetrachloride, chloroform, hexachlorobenzene, pentachlorobenzene, toluene, 1,2,4,5-tetrachlorobenzene, tetrachloroethylene.
K156	Benomyl, carbaryl, carbendazim, carbofuran, carbosulfan, formaldehyde, methylene chloride, triethylamine.
K157	Carbon tetrachloride, formaldehyde, methyl chloride, methylene chloride, pyridine, triethylamine.
K158	Benomyl, carbendazim, carbofuran, carbosulfan, chloroform, methylene chloride.
K159	Benzene, butylate, eptc, molinate, pebulate, vernolate.
K161	Antimony, arsenic, metam-sodium, ziram.
K169	Benzene.
K170	Benzo(a)pyrene, dibenz(a,h)anthracene, benzo (a) anthracene, benzo (b)fluoranthene, benzo(k)fluoranthene, 3-methylcholanthrene, 7, 12-dimethylbenz(a)anthracene.
K171	Benzene, arsenic.
K172	Benzene, arsenic.
K174	1, 2, 3, 4, 6, 7, 8-Heptachlorodibenzo-p-dioxin (1, 2, 3, 4, 6, 7, 8-HpCDD), 1, 2, 3, 4, 6, 7, 8-Heptachlorodibenzofuran (1, 2, 3, 4, 6, 7, 8-HpCDF), 1, 2, 3, 4, 7, 8, 9-Heptachlorodibenzofuran (1, 2, 3, 6, 7, 8, 9-HpCDF), HxCDDs (All Hexachlorodibenzo-p-dioxins), HxCDFs (All Hexachlorodibenzofurans), PeCDDs (All Pentachlorodibenzo-p-dioxins), OCDD (1, 2, 3, 4, 6, 7, 8, 9-Octachlorodibenzo-p-dioxin, OCDF (1, 2, 3, 4, 6, 7, 8, 9-Octachlorodibenzofuran), PeCDFs (All Pentachlorodibenzofurans), TCDDs (All tetrachlorodi-benzo-p-dioxins), TCDFs (All tetrachlorodibenxofurans).
K175	Mercury
K176	Arsenic, Lead
K177	Antimony
K178	Thallium
K181	Aniline, o-anisidine, 4-chloroaniline, p-cresidine, 2, 4-dimethylaniline, 1, 2-phenylenediamine, 1, 3-phenylenediamine.

FOOTNOTE: N.A. -- Waste is hazardous because it fails the test for the characteristic of ignitability, corrosivity, or reactivity.

Appendix VIII -- Hazardous Constituents

Common Name	Chemical Abstracts Name	Chemical	Hazardous

		Abstracts No.	Waste Code
A2213	Ethanimidothioic acid, 2- (dimethylamino) -N-hydroxy-2-oxo-, methyl ester	30558-43-1	U394
Acetonitrile	Same	75-05-8	U003
Acetophenone	Ethanone, 1-phenyl-	98-86-2	U004
2-Acetylaminefluarone	Acetamide, N-9H-fluoren-2-yl-	53-96-3	U005
Acetyl chloride	Same	75-36-5	U006
1-Acetyl-2-thiourea	Acetamide, N-(aminothioxomethyl)-	591-08-2	P002
Acrolein	2-Propenal	107-02-8	P003
Acrylamide	2-Propenamide	79-06-1	U007
Acrylonitrile	2-Propenenitrile	107-13-1	U009
Aflatoxins	Same	1402-68-2	
Aldicarb	Propanal, 2-methyl-2-(methylthio)-, O-[(methylamino)carbonyl]oxime	116-06-3	P070
Aldicarb sulfone	Propanal, 2-methyl-2- (methylsulfonyl) -, O-[(methylamino) carbonyl] oxime	1646-88-4	P203
Aldrin	1,4,5,8-Dimethanonaphthalene, 1,2,3,4,10,10-10-hexachloro-1,4,4a,5,8,8a-hexahydro-, (1alpha,4alpha,4abeta,5alpha,8alpha, 8abeta)-	309-00-2	P004
Allyl alcohol	2-Propen-1-ol	107-18-6	P005
Allyl chloride	1-Propane, 3-chloro	107-05-1	
Aluminum phosphide	Same	20859-73-8	P006
4-Aminobiphenyl	[1,1'-Biphenyl]-4-amine	92-67-1	
5-(Aminomethyl)-3-isoxazolol	3(2H)-Isoxazolone, 5-(aminomethyl)-	2763-96-4	P007
4-Aminopyridine	4-Pyridinamine	504-24-5	P008
Amitrole	1H-1,2,4-Triazol-3-amine	61-82-5	U011
Ammonium vanadate	Vanadic acid, ammonium salt	7803-55-6	P119
Aniline	Benzenamine	62-53-3	U012
o-Anisidine (2-methoxyaniline)	Benzenamine, 2-Methoxy-	90-04-0	
Antimony	Benzenamine	7440-36-0	
Antimony compounds, N.O.S.[1]			
Aramite	Sulfurous acid, 2-chloroethyl 2-[4-(1,1-dimethylethyl)phenoxy]-1-methylethyl ester	140-57-8	
Arsenic	Same	7440-38-2	
Arsenic compounds, N.O.S.[1]			
Arsenic acid	Arsenic acid H_3AsO_4	7778-39-4	P010
Arsenic pentoxide	Arsenic oxide As_2O_5	1303-28-2	P011
Arsenic trioxide	Arsenic oxide As_2O_3	1327-53-3	P012

Auramine	Benzenamine, 4,4'-carbonimidoylbis[N,N-dimethyl	492-80-8	U014
Azaserine	L-Serine, diazoacetate (ester)	115-02-6	U015
Barban	Carbamic acid, (3-chlorophenyl) -, 4-chloro-2-butynyl ester	101-27-9	U280
Barium	Same	7440-39-3	
Barium compounds, N.O.S.[1]			
Barium cyanide	Same	542-62-1	P013
Bendiocarb	1,3-Benzodioxol-4-ol, 2,2-dimethyl-, methyl carbamate	22781-23-3	U278
Bendiocarb phenol	1,3-Benzodioxol-4-ol, 2,2-dimethyl-,	22961-82-6	U364
Benomyl	Carbamic acid, [1- [(butylamino) carbonyl]-1H-benzimidazol-2-yl] -, methyl ester	17804-35-2	U271
Benz[c]acridine	Same	225-51-4	U016
Benz[a]anthracene	Same	56-55-3	U018
Benzal chloride	Benzene, (dichloromethyl)-	98-87-3	U017
Benzene	Same	71-43-2	U019
Benzenearsonic acid	Arsonic acid, phenyl-	98-05-5	
Benzidine	[1,1'-Biphenyl]-4,4'-diamine	92-87-5	U021
Benzo[b]fluoranthene	Benz[e]acephenanthrylene	205-99-2	
Benzo[j]fluoranthene	Same	205-82-3	
Benzo(k)fluoranthene	Same	207-08-9	
Benzo[a]pyrene	Same	50-32-8	U022
p-Benzoquinone	2,5-Cyclohexadiene-1,4-dione	106-51-4	U197
Benzotrichloride	Benzene, (trichloromethyl)-	98-07-7	U023
Benzyl chloride	Benzene, (chloromethyl)-	100-44-7	P028
Beryllium powder	Same	7440-41-7	P015
Beryllium compounds, N.O.S.[1]			
Bis(pentamethylene)-thiuram tetrasulfide	Piperidine, 1,1'-(tetrathiodicarbonothioyl)-bis-	120-54-7	
Bromoacetone	2-Propanone, 1-bromo-	598-31-2	P017
Bromoform	Methane, tribromo-	75-25-2	U225
4-Bromophenyl phenyl ether	Benzene, 1-bromo-4-phenoxy-	101-55-3	U030
Brucine	Strychnidin-10-one, 2,3-dimethoxy-	357-57-3	P018
Butylate	Carbamothioic acid, bis(2-methylpropyl)-, S-ethyl ester	2008-41-5	
Butyl benzyl phthalate	1,2-Benzenedicarboxylic acid, butyl phenylmethyl ester	85-68-7	
Cacodylic acid	Arsinic acid, dimethyl-	75-60-5	U136
Cadmium	Same	7440-43-9	
Cadmium compounds, N.O.S.[1]			

Calcium chromate	Chromic acid H_2CrO_4, calcium salt	13765-19-0	U032
Calcium cyanide	Calcium cyanide $Ca(CN)_2$	592-01-8	P021
Carbaryl	1-Naphthalenol, methylcarbamate	63-25-2	U279
Carbendazim	Carbamic acid, 1H-benzimidazol-2-yl, methyl ester	10605-21-7	U372
Carbofuran	7-Benzofuranol, 2,3-dihydro-2,2-dimethyl-, methylcarbamate	1563-66-2	P127
Carbofuran phenol	7-Benzofuranol, 2,3-dihydro-2,2-dimethyl-	1563-38-8	U367
Carbon disulfide	Same	75-15-0	P022
Carbon oxyfluoride	Carbonic difluoride	353-50-4	U033
Carbon tetrachloride	Methane, tetrachloro-	56-23-5	U211
Carbosulfan	Carbamic acid, [(dibutylamino) thio] methyl-, 2,3-dihydro-2,2-dimethyl-7-benzofuranyl ester	55285-14-8	P189
Chloral	Acetaldehyde, trichloro-	75-87-6	U034
Chlorambucil	Benzenebutanoic acid, 4-[bis(2-chloroethyl)amino]-	305-03-3	U035
Chlordane	4,7-Methano-1H-indene, 1,2,4,5,6,7,8,8-octachloro-2,3,3a,4,7,7a-hexahydro-	57-74-9	U036
Chlordane (alpha and gamma isomers)			U036
Chlorinated benzenes, N.O.S.[1]			
Chlorinated ethane, N.O.S.[1]			
Chlorinated fluorocarbons, N.O.S.[1]			
Chlorinated naphthalene, N.O.S.[1]			
Chlorinated phenol, N.O.S.[1]			
Chlornaphazin	Naphthalenamine, N,N'-bis(2-chloroethyl)-	494-03-1	U026
Chloroacetaldehyde	Acetaldehyde, chloro-	107-20-0	P023
Chloroalkyl ethers, N.O.S.[1]			
p-Chloroaniline	Benzenamine, 4-chloro-	106-47-8	P024
Chlorobenzene	Benzene, chloro-	108-90-7	U037
Chlorobenzilate	Benzeneacetic acid, 4-chloro-alpha-(4-chlorophenyl)-alpha-hydroxy-, ethyl ester	510-15-6	U038
p-Chloro-m-cresol	Phenol, 4-chloro-3-methyl-	59-50-7	U039
2-Chloroethyl vinyl ether	Ethene, (2-chloroethoxy)-	110-75-8	U042
Chloroform	Methane, trichloro-	67-66-3	U044
Chloromethyl methyl ether	Methane, chloromethoxy-	107-30-2	U046
beta-Chloronaphthalene	Naphthalene, 2-chloro-	91-58-7	U047
o-Chlorophenol	Phenol, 2-chloro-	95-57-8	U048
1-(o-Chlorophenyl)thiourea	Thiourea, (2-chlorophenyl)-	5344-82-1	P026

Chloroprene	1,3-Butadiene, 2-chloro-	126-99-8	
3-Chloropropionitrile	Propanenitrile, 3-chloro-	542-76-7	P027
Chromium	Same	7440-47-3	
Chromium compounds, N.O.S.[1]			
Chrysene	Same	218-01-9	U050
Citrus red No. 2	2-Naphthalenol, 1-[(2,5-dimethoxyphenyl)azo]-	6358-53-8	
Coal tar creosote	Same	8007-45-2	
Copper cyanide	Copper cyanide CuCN	544-92-3	P029
Copper dimethyldithiocarbamate	Copper, bis(dimethylcarbamodithioato-S,S')-,	137-29-1	
Creosote	Same		U051
p-Cresidine	2-Methoxy-5-methylbenzenamine	120-71-8	
Cresol (Cresylic acid)	Phenol, methyl-	1319-77-3	U052
Crotonaldehyde	2-Butenal	4170-30-3	U053
m-Cumenyl methylcarbamate	Phenol, 3-(methylethyl)-, methyl carbamate	64-00-6	P202
Cyanides (soluble salts and complexes) N.O.S.[1]			P030
Cyanogen	Ethanedinitrile	460-19-5	P031
Cyanogen bromide	Cyanogen bromide (CN)Br	506-68-3	U246
Cyanogen chloride	Cyanogen chloride (CN)Cl	506-77-4	P033
Cycasin	beta-D-Glucopyranoside, (methyl-ONN-azoxy)methyl	14901-08-7	
Cycolate	Carbamothioic acid, cyclohexylethyl-, S-ethyl ester	1134-23-2	
2-Cyclohexyl-4,6-dinitrophenol	Phenol, 2-cyclohexyl-4,6-dinitro-	131-89-5	P034
Cyclophosphamide	2H-1,3,2-Oxazaphosphorin-2-amine, N,N-bis(2-chloroethyl)tetrahydro-, 2-oxide	50-18-0	U058
2,4-D	Acetic acid, (2,4-dichlorophenoxy)-	94-75-7	U240
2,4-D, salts, esters			U240
Daunomycin	5,12-Naphthacenedione, 8-acetyl-10-[(3-amino-2,3,6-trideoxy-alpha-L-lyxo-hexopyranosyl)oxy]-7,8,9,10-tetrahydro-6,8,11-trihydroxy-1-methoxy-, (8S-cis)-	20830-81-3	U059
Dazomet	2H-1,3,5-thiadiazine-2-thione, tetrahydro-3,5-dimethyl	533-74-4	
DDD	Benzene, 1,1'-(2,2-dichloroethylidene)bis[4-chloro-	72-54-8	U060
DDE	Benzene, 1,1'-(dichloroethenylidene)bis[4-chloro-	72-55-9	
DDT	Benzene, 1,1'-(2,2,2-trichloroethylidene)bis[4-chloro-	50-29-3	U061
Diallate	Carbamothioic acid, bis(1-methylethyl)-, S-(2,3-dichloro-2-propenyl) ester	2303-16-4	U062
Dibenz[a,h]acridine	Same	226-36-8	
Dibenz[a,j]acridine	Same	224-42-0	

Dibenz[a,h]anthracene	Same	53-70-3	U063
7H-Dibenzo[c,g]carbazole	Same	194-59-2	
Dibenzo[a,e]pyrene	Naphtho[1,2,3,4-def]chrysene	192-65-4	
Dibenzo[a,h]pyrene	Dibenzo[b,def]chrysene	189-64-0	
Dibenzo[a,i]pyrene	Benzo[rst]pentaphene	189-55-9	U064
1,2-Dibromo-3-chloropropane	Propane, 1,2-dibromo-3-chloro-	96-12-8	U066
Dibutyl phthalate	1,2-Benzenedicarboxylic acid, dibutyl ester	84-74-2	U069
o-Dichlorobenzene	Benzene, 1,2-dichloro-	95-50-1	U070
m-Dichlorobenzene	Benzene, 1,3-dichloro-	541-73-1	U071
p-Dichlorobenzene	Benzene, 1,4-dichloro-	106-46-7	U072
Dichlorobenzene, N.O.S.[1]	Benzene, dichloro-	25321-22-6	
3,3'-Dichlorobenzidine	[1,1'-Biphenyl]-4,4'-diamine, 3,3'-dichloro-	91-94-1	U073
1,4-Dichloro-2-butene	2-Butene, 1,4-dichloro-	764-41-0	U074
Dichlorodifluoromethane	Methane, dichlorodifluoro-	75-71-8	U075
Dichloroethylene, N.O.S.[1]	Dichloroethylene	25323-30-2	
1,1-Dichloroethylene	Ethene, 1,1-dichloro-	75-35-4	U078
1,2-Dichloroethylene	Ethene, 1,2-dichloro-, (E)-	156-60-5	U079
Dichloroethyl ether	Ethane, 1,1'oxybis[2-chloro-	111-44-4	U025
Dichloroisopropyl ether	Propane, 2,2'-oxybis[2-chloro-	108-60-1	U027
Dichloromethoxy ethane	Ethane, 1,1'-[methylenebis(oxy)]bis[2-chloro-	111-91-1	U024
Dichloromethyl ether	Methane, oxybis[chloro-	542-88-1	P016
2,4-Dichlorophenol	Phenol, 2,4-dichloro-	120-83-2	U081
2,6-Dichlorophenol	Phenol, 2,6-dichloro-	87-65-0	U082
Dichlorophenylarsine	Arsonous dichloride, phenyl-	696-28-6	P036
Dichloropropane, N.O.S.[1]	Propane, dichloro-	26638-19-7	
Dichloropropanol, N.O.S.[1]	Propanol, dichloro-	26545-73-3	
Dichloropropene, N.O.S.[1]	1-Propene, dichloro-	26952-23-8	
1,3-Dichloropropene	1-Propene, 1,3-dichloro-	542-75-6	U084
Dieldrin	2,7:3,6-Dimethanonaphth[2,3-b]oxirene, 3,4,5,6,9,9-hexachloro-1a,2,2a,3,6,6a,7,7a-octahydro-, (1aalpha,2beta,2aalpha,3beta,6beta, 6aalpha,7beta,7aalpha)-	60-57-1	P037
1,2:3,4-Diepoxybutane	2,2'-Bioxirane	1464-53-5	U085
Diethylarsine	Arsine, diethyl-	692-42-2	P038
Diethylene glycol, dicarbamate	Ethanol, 2,2'-oxybis-, dicarbamate	5952-26-1	U395
1,4-Diethyleneoxide	1,4-Dioxane	123-91-1	U108
Diethylhexyl phthalate	1,2-Benzenedicarboxylic acid, bis(2-ethylhexyl) ester	117-81-7	U028

N,N'-Diethylhydrazine	Hydrazine, 1,2-diethyl-	1615-80-1	U086
O,O-Diethyl S-methyl dithiophosphate	Phosphorodithioic acid, O,O-diethyl S-methyl ester	3288-58-2	U087
Diethyl-p-nitrophenyl phosphate	Phosphoric acid, diethyl 4-nitrophenyl ester	311-45-5	P041
Diethyl phthalate	1,2-Benzenedicarboxylic acid, diethyl ester	84-66-2	U088
O,O-Diethyl O-pyrazinyl phosphorothioate	Phosphorothioic acid, O,O-diethyl O-pyrazinyl ester	297-97-2	P040
Diethylstilbesterol	Phenol, 4,4'-(1,2-diethyl-1,2-ethenediyl)bis-, (E)-	56-53-1	U089
Dihydrosafrole	1,3-Benzodioxole, 5-propyl-	94-58-6	U090
Diisopropylfluorophosphate (DFP)	Phosphorofluoridic acid, bis(1-methylethyl) ester	55-91-4	P043
Dimethoate	Phosphorodithioic acid, O,O-dimethyl S-[2-(methylamino)-2-oxoethyl] ester	60-51-5	P044
3,3'-Dimethoxybenzidine	[1,1'-Biphenyl]-4,4'-diamine, 3,3'-dimethoxy-	119-90-4	U091
p-Dimethylaminoazobenzene	Benzenamine, N,N-dimethyl-4-(phenylazo)-	60-11-7	U093
2, 4-Dimethylaniline (2, 4-xylidine)	Benzenamine, 2, 4-dimethyl-	95-68-1	
7,12-Dimethylbenz[a]anthracene	Benz[a]anthracene, 7,12-dimethyl-	57-97-6	U094
3,3'-Dimethylbenzidine	[1,1'-Biphenyl]-4,4'-diamine, 3,3'-dimethyl-	119-93-7	U095
Dimethylcarbamoyl chloride	Carbamic chloride, dimethyl-	79-44-7	U097
1,1-Dimethylhydrazine	Hydrazine, 1,1-dimethyl-	57-14-7	U098
1,2-Dimethylhydrazine	Hydrazine, 1,2-dimethyl-	540-73-8	U099
alpha,alpha-Dimethylphenethylamine	Benzeneethanamine, alpha,alpha-dimethyl-	122-09-8	P046
2,4-Dimethylphenol	Phenol, 2,4-dimethyl-	105-67-9	U101
Dimethyl phthalate	1,2-Benzenedicarboxylic acid, dimethyl ester	131-11-3	U102
Dimethyl sulfate	Sulfuric acid, dimethyl ester	77-78-1	U103
Dimetilan	Carbamic acid, dimethyl-, 1- [(dimethylamino) carbonyl]-5-methyl-1H-pyrazol-3-yl ester	644-64-4	P191
Dinitrobenzene, N.O.S.[1]	Benzene, dinitro-	25154-54-5	
4,6-Dinitro-o-cresol	Phenol, 2-methyl-4,6-dinitro-	534-52-1	P047
4,6-Dinitro-o-cresol salts			P047
2,4-Dinitrophenol	Phenol, 2,4-dinitro-	51-28-5	P048
2,4-Dinitrotoluene	Benzene, 1-methyl-2,4-dinitro-	121-14-2	U105
2,6-Dinitrotoluene	Benzene, 2-methyl-1,3-dinitro-	606-20-2	U106
Dinoseb	Phenol, 2-(1-methylpropyl)-4,6-dinitro-	88-85-7	P020
Di-n-octylphthalate	1,2-Benzenedicarboxylic acid, dioctyl ester	117-84-0	U017
Diphenylamine	Benzenamine, N-phenyl-	122-39-4	

1,2-Diphenylhydrazine	Hydrazine, 1,2-diphenyl-	122-66-7	U109
Di-n-propylnitrosamine	1-Propanamine, N-nitroso-N-propyl-	621-64-7	U111
Disulfiram	Thioperoxydicarbonic diamide, tetraethyl	97-77-8	
Disulfoton	Phosphorodithioic acid, O,O-diethyl S-[2-(ethylthio)ethyl] ester	298-04-4	P039
Dithiobiuret	Thioimidodicarbonic diamide [$(H_2N)C(S)]_2NH$	541-53-7	P049
Endosulfan	6,9-Methano-2,4,3-benzodioxathiepin, 6,7,8,9,10,10-hexachloro-1,5,5a,6,9,9a- hexahydro-, 3-oxide	115-29-7	P050
Endothall	7-Oxabicyclo[2.2.1]heptane-2,3-dicarboxylic acid	145-73-3	P088
Endrin	2,7:3,6-Dimethanonaphth[2,3-b]oxirene, 3,4,5,6,9,9-hexachloro-1a,2,2a,3,6,6a,7,7a-octahydro-,(1aalpha,2beta,2abeta,3alpha,6alpha, 6abeta,7beta,7aalpha)-	72-20-8	P051
Endrin metabolites			P051
Epichlorohydrin	Oxirane, (chloromethyl)-	106-89-8	U041
Epinephrine	1,2-Benzenediol, 4-[1-hydroxy-2-(methylamino)ethyl]-, (R)-	51-43-4	P042
EPTC	Carbamothioic acid, dipropyl-, S-ethyl ester	759-94-4	
Ethyl carbamate (urethane)	Carbamic acid, ethyl ester	51-79-6	U238
Ethyl cyanide	Propanenitrile	107-12-0	P101
Ethylenebisdithiocarbamic acid	Carbamodithioic acid, 1,2-ethanediylbis-	111-54-6	U114
Ethylenebisdithiocarbamic acid, salts and esters			U114
Ethylene dibromide	Ethane, 1,2-dibromo-	106-93-4	U067
Ethylene dichloride	Ethane, 1,2-dichloro-	107-06-2	U077
Ethylene glycol monoethyl ether	Ethanol, 2-ethoxy-	110-80-5	U359
Ethyleneimine	Aziridine	151-56-4	P054
Ethylene oxide	Oxirane	75-21-8	U115
Ethylenethiourea	2-Imidazolidinethione	96-45-7	U116
Ethylidene dichloride	Ethane, 1,1-dichloro-	75-34-3	U076
Ethyl methacrylate	2-Propenoic acid, 2-methyl-, ethyl ester	97-63-2	U118
Ethyl methanesulfonate	Methanesulfonic acid, ethyl ester	62-50-0	U119
Ethyl Ziram	Zinc, bis(diethylcarbamodithioato-S,S')-	14324-55-1	
Famphur	Phosphorothioic acid, O-[4-[(dimethylamino)sulfonyl]phenyl] O,O-dimethyl ester	52-85-7	P097
Ferbam	Iron, tris(dimethylcarbamodithioato-S,S')-	14484-64-1	
Fluoranthene	Same	206-44-0	U120
Fluorine	Same	7782-41-4	P056
Fluoroacetamide	Acetamide, 2-fluoro-	640-19-7	P057

Fluoroacetic acid, sodium salt	Acetic acid, fluoro-, sodium salt	62-74-8	P058
Formaldehyde	Same	50-00-0	U122
Formetanate hydrochloride	Methanimidamide, N,N-dimethyl-N'-[3-[[(methylamino) carbonyl]oxy]phenyl]-, monohydrochloride	23422-53-9	P198
Formic acid	Same	64-18-6	U123
Formparanate	Methanimidamide, N,N-dimethyl-N'-[2-methyl-4-[[(methylamino) carbonyl]oxy]phenyl]-.	17702-57-7	P197
Glycidylaldehyde	Oxiranecarboxyaldehyde	765-34-4	U126
Halomethanes, N.O.S.[1]			
Heptachlor	4,7-Methano-1H-indene, 1,4,5,6,7,8,8-heptachloro-3a,4,7,7a-tetrahydro-	76-44-8	P059
Heptachlor epoxide	2,5-Methano-2H-indeno[1,2-b]oxirene, 2,3,4,5,6,7,7-heptachloro-1a,1b,5,5a,6,6a-hexa- hydro-, (1aalpha,1bbeta,2alpha,5alpha, 5abeta,6beta,6aalpha)-	1024-57-3	
Heptachlor epoxide (alpha, beta, and gamma isomers)			
Heptachlorodibenzofurans.			
Heptachlorodibenzo-p-dioxins			
Hexachlorobenzene	Benzene, hexachloro-	118-74-1	U127
Hexachlorobutadiene	1,3-Butadiene, 1,1,2,3,4,4-hexachloro-	87-68-3	U128
Hexachlorocyclopentadiene	1,3-Cyclopentadiene, 1,2,3,4,5,5-hexachloro-	77-47-4	U130
Hexachlorodibenzo-p-dioxins			
Hexachlorodibenzofurans			
Hexachloroethane	Ethane, hexachloro-	67-72-1	U131
Hexachlorophene	Phenol, 2,2'-methylenebis[3,4,6-trichloro-	70-30-4	U132
Hexachloropropene	1-Propene, 1,1,2,3,3,3-hexachloro-	1888-71-7	U243
Hexaethyl tetraphosphate	Tetraphosphoric acid, hexaethyl ester	757-58-4	P062
Hydrazine	Same	302-01-2	U133
Hydrogen cyanide	Hydrocyanic acid	74-90-8	P063
Hydrogen fluoride	Hydrofluoric acid	7664-39-3	U134
Hydrogen sulfide	Hydrogen sulfide H_2S	7783-06-4	U135
Indeno[1,2,3-cd]pyrene	Same	193-39-5	U137
3-Iodo-2-propynyl n-butylcarbamate	Carbamic acid, butyl-, 3-iodo-2-propynyl ester	55406-53-6	
Isobutyl alcohol	1-Propanol, 2-methyl-	78-83-1	U140
Isodrin	1,4,5,8-Dimethanonaphthalene, 1,2,3,4,10,10-hexachloro-1,4,4a,5,8,8a-hexahydro-,(1alpha,4alpha,4abeta,5beta,8beta,-8abeta) -	465-73-6	P060

Isolan	Carbamic acid, dimethyl-, 3-methyl-1-(1-methylethyl)-1H-pyrazol-5-yl ester	119-38-0	P192
Isosafrole	1,3-Benzodioxole, 5-(1-propenyl)-	120-58-1	U141
Kepone	1,3,4-Metheno-2H-cyclobuta[cd]pentalen-2-one, 1,1a,3,3a,4,5,5,5a,5b,6-decachlorooctahydro-	143-50-0	U142
Lasiocarpine	2-Butenoic acid, 2-methyl-,7-[[2,3-dihydroxy-2-(1-methoxyethyl)-3-methyl-1 - oxobutoxy]methyl]-2,3,5,7a-tetrahydro-1H-pyrrolizin-1-yl ester, [1S-[1alpha(Z),7(2S*,3R*),7aalpha]]-	303-34-4	U143
Lead	Same	7439-92-1	
Lead compounds, N.O.S.[1]			
Lead acetate	Acetic acid, lead(2+) salt	301-04-2	U144
Lead phosphate	Phosphoric acid, lead(2+) salt (2:3)	7446-27-7	U145
Lead subacetate	Lead, bis(acetato-O)tetrahydroxytri-	1335-32-6	U146
Lindane	Cyclohexane, 1,2,3,4,5,6-hexachloro-, (1alpha,2alpha,3beta,4alpha,5alpha,6beta)-	58-89-9	U129
Maleic anhydride	2,5-Furandione	108-31-6	U147
Maleic hydrazide	3,6-Pyridazinedione, 1,2-dihydro-	123-33-1	U148
Malononitrile	Propanedinitrile	109-77-3	U149
Manganese dimethyldithiocarbamate	Manganese, bis(dimethylcarbamodithioato-S,S')-,	15339-36-3	P196
Melphalan	L-Phenylalanine, 4-[bis(2-chloroethyl)aminol]-	148-82-3	U150
Mercury	Same	7439-97-6	U151
Mercury compounds, N.O.S.[1]			
Mercury fulminate	Fulminic acid, mercury(2+) salt	628-86-4	P065
Metam Sodium	Carbamodithioic acid, methyl-, monosodium salt	137-42-8	
Methacrylonitrile	2-Propenenitrile, 2-methyl-	126-98-7	U152
Methapyrilene	1,2-Ethanediamine, N,N-dimethyl-N'-2-pyridinyl-N'-(2-thienylmethyl)-	91-80-5	U155
Methiocarb	Phenol, (3,5-dimethyl-4-(methylthio)-, methylcarbamate	2032-65-7	P199
Methomyl	Ethanimidothioic acid, N-[[(methylamino)carbonyl]oxy]-, methyl ester	16752-77-5	P066
Methoxychlor	Benzene, 1,1'-(2,2,2-trichloroethylidene)bis[4-methoxy-	72-43-5	U247
Methyl bromide	Methane, bromo-	74-83-9	U029
Methyl chloride	Methane, chloro-	74-87-3	U045
Methyl chlorocarbonate	Carbonochloridic acid, methyl ester	79-22-1	U156
Methyl chloroform	Ethane, 1,1,1-trichloro-	71-55-6	U226
3-Methylcholanthrene	Benz[j]aceanthrylene, 1,2-dihydro-3-methyl-	56-49-5	U157
4,4'-Methylenebis (2-chloroaniline)	Benzenamine, 4,4'-methylenebis[2-chloro-	101-14-4	U158

Methylene bromide	Methane, dibromo-	74-95-3	U068
Methylene chloride	Methane, dichloro-	75-09-2	U080
Methyl ethyl ketone (MEK)	2-Butanone	78-93-3	U159
Methyl ethyl ketone peroxide	2-Butanone, peroxide	1338-23-4	U160
Methyl hydrazine	Hydrazine, methyl-	60-34-4	P068
Methyl iodide	Methane, iodo-	74-88-4	U138
Methyl isocyanate	Methane, isocyanato-	624-83-9	P064
2-Methyllactonitrile	Propanenitrile, 2-hydroxy-2-methyl-	75-86-5	P069
Methyl methacrylate	2-Propenoic acid, 2-methyl-, methyl ester	80-62-6	U162
Methyl methanesulfonate	Methanesulfonic acid, methyl ester	66-27-3	
Methyl parathion	Phosphorothioic acid, O,O-dimethyl O-(4-nitrophenyl) ester	298-00-0	P071
Methylthiouracil	4(1H)-Pyrimidinone, 2,3-dihydro-6-methyl-2-thioxo-	56-04-2	U164
Metolcarb	Carbamic acid, methyl-, 3-methylphenyl ester	1129-41-5	P190
Mexacarbate	Phenol, 4-(dimethylamino)-3,5-dimethyl-, methylcarbamate (ester)	315-18-4	P128
Mitomycin C	Azirino[2',3':3,4]pyrrolo[1,2-a]indole-4,7-dione, 6-amino-8-[[(aminocarbonyl)oxy]methyl]-1,1a,2,8,8a,8b-hexahydro-8a-methoxy-5- methyl-, [1aS-(1aalpha,8beta,8aalpha,8balpha)]-	50-07-7	U010
MNNG	Guanidine, N-methyl-N'-nitro-N-nitroso-	70-25-7	U163
Molinate	1H-Azepine-1-carbothioic acid, hexahydro-, S-ethyl ester	2212-67-1	
Mustard gas	Ethane, 1,1'-thiobis[2-chloro-	505-60-2	
Naphthalene	Same	91-20-3	U165
1,4-Naphthoquinone	1,4-Naphthalenedione	130-15-4	U166
alpha-Naphthylamine	1-Naphthalenamine	134-32-7	U167
beta-Naphthylamine	2-Naphthalenamine	91-59-8	U168
alpha-Naphthylthiourea	Thiourea, 1-naphthalenyl-	86-88-4	P072
Nickel	Same	7440-02-0	
Nickel compounds, N.O.S.[1]			
Nickel carbonyl	Nickel carbonyl $Ni(CO)_4$, (T-4)-	13463-39-3	P073
Nickel cyanide	Nickel cyanide $Ni(CN)_2$	557-19-7	P074
Nicotine	Pyridine, 3-(1-methyl-2-pyrrolidinyl)-, (S)-	54-11-5	P075
Nicotine salts			P075
Nitric oxide	Nitrogen oxide NO	10102-43-9	P076
p-Nitroaniline	Benzenamine, 4-nitro-	100-01-6	P077
Nitrobenzene	Benzene, nitro-	98-95-3	U169
Nitrogen dioxide	Nitrogen oxide NO_2	10102-44-0	P078

Nitrogen mustard	Ethanamine, 2-chloro-N-(2-chloroethyl)-N-methyl-	51-75-2	
Nitrogen mustard, hydrochloride salt			
Nitrogen mustard N-oxide	Ethanamine, 2-chloro-N-(2-chloroethyl)-N-methyl-, N-oxide	126-85-2	
Nitrogen mustard, N-oxide, hydrochloride salt			
Nitroglycerin	1,2,3-Propanetriol, trinitrate	55-63-0	P081
p-Nitrophenol	Phenol, 4-nitro-	100-02-7	U170
2-Nitropropane	Propane, 2-nitro-	79-46-9	U171
Nitrosamines, N.O.S.[1]		35576-91-1	
N-Nitrosodi-n-butylamine	1-Butanamine, N-butyl-N-nitroso-	924-16-3	U172
N-Nitrosodiethanolamine	Ethanol, 2,2'-(nitrosoimino)bis-	1116-54-7	U173
N-Nitrosodiethylamine	Ethanamine, N-ethyl-N-nitroso-	55-18-5	U174
N-Nitrosodimethylamine	Methanamine, N-methyl-N-nitroso-	62-75-9	P082
N-Nitroso-N-ethylurea	Urea, N-ethyl-N-nitroso-	759-73-9	U176
N-Nitrosomethylethylamine	Ethanamine, N-methyl-N-nitroso-	10595-95-6	
N-Nitroso-N-methylurea	Urea, N-methyl-N-nitroso-	684-93-5	U177
N-Nitroso-N-methylurethane	Carbamic acid, methylnitroso-, ethyl ester	615-53-2	U178
N-Nitrosomethylvinylamine	Vinylamine, N-methyl-N-nitroso-	4549-40-0	P084
N-Nitrosomorpholine	Morpholine, 4-nitroso-	59-89-2	
N-Nitrosonornicotine	Pyridine, 3-(1-nitroso-2-pyrrolidinyl)-, (S)-	16543-55-8	
N-Nitrosopiperidine	Piperidine, 1-nitroso-	100-75-4	U179
N-Nitrosopyrrolidine	Pyrrolidine, 1-nitroso-	930-55-2	U180
N-Nitrososarcosine	Glycine, N-methyl-N-nitroso-	13256-22-9	
5-Nitro-o-toluidine	Benzenamine, 2-methyl-5-nitro-	99-55-8	U181
Octachlorodibenzo-p-dioxin (OCDD)	1, 2, 3, 4, 6, 7, 8, 9-Octachlorodibenzo-p-dioxin	3268-87-9	
Octachlorodibenzofuran (OCDF)	1, 2, 3, 4, 6, 7, 8, 9-Octachlorodibenofuran	39001-02-0	
Octamethylpyrophosphoramide	Diphosphoramide, octamethyl-	152-16-9	P085
Osmium tetroxide	Osmium oxide OsO_4, (T-4)-	20816-12-0	P087
Oxamyl	Ethanimidothioc acid, 2-(dimethylamino)-N-[[(methylamino)carbonyl]-oxy]-2-oxo-, methyl ester	23135-22-0	P194
Paraldehyde	1,3,5-Trioxane, 2,4,6-trimethyl-	123-63-7	U182
Parathion	Phosphorothioic acid, O,O-diethyl O-(4-nitrophenyl) ester	56-38-2	P089
Pebulate	Carbamothioic acid, butylethyl-, S-propyl ester	1114-71-2	

Pentachlorobenzene	Benzene, pentachloro-	608-93-5	U183
Pentachlorodibenzo-p-dioxins			
Pentachlorodibenzofurans			
Pentachloroethane	Ethane, pentachloro-	76-01-7	U184
Pentachloronitrobenzene (PCNB)	Benzene, pentachloronitro-	82-68-8	U185
Pentachlorophenol	Phenol, pentachloro-	87-86-5	See F027
Phenacetin	Acetamide, N-(4-ethoxyphenyl)-	62-44-2	U187
Phenol	Same	108-95-2	U188
Phenylenediamine	Benzenediamine	25265-76-3	
1, 2-Phenylenediamine	1, 2-Benzenediamine	95-54-5	
1, 3-Phenylenediamine	1, 3-Benzenediamine	108-45-2	
Phenylmercury acetate	Mercury, (acetato-O)phenyl-	62-38-4	P092
Phenylthiourea	Thiourea, phenyl-	103-85-5	P093
Phosgene	Carbonic dichloride	75-44-5	P095
Phosphine	Same	7803-51-2	P096
Phorate	Phosphorodithioic acid, O,O-diethyl S-[(ethylthio)methyl] ester	298-02-2	P094
Phthalic acid esters, N.O.S.[1]			
Phthalic anhydride	1,3-Isobenzofurandione	85-44-9	U190
Physostigmine	Pyrrolo[2,3-b]indol-5-01, 1,2,3,3a,8,8a-hexahydro-1,3a,8-trimethyl-, methylcarbamate (ester), (3aS-cis)-	57-47-6	P204
Physostigmine salicylate	Benzoic acid, 2-hydroxy-, compd. with (3aS-cis) - -1,2,3,3a,8,8a-hexahydro-1,3a,8-trimethylpyrrolo [2,3-b]indol-5-yl methylcarbamate ester (1:1)	57-64-7	P188
2-Picoline	Pyridine, 2-methyl-	109-06-8	U191
Polychlorinated biphenyls, N.O.S.[1]			
Potassium cyanide	Potassium cyanide K(CN)	151-50-8	P098
Potassium dimethyldithiocarbamate	Carbamodithioic acid, dimethyl, potassium salt	128-03-0	
Potassium n-hydroxymethyl-n-methyl-dithiocarbamate	Carbamodithioic acid, (hydroxymethyl)methyl-, monopotassium salt	51026-28-9	
Potassium n-methyldithiocarbamate	Carbamodithioic acid, methyl-monopotassium salt	137-41-7	
Potassium pentachlorophenate	Pentachlorophenol, potassium salt	7778736	None
Potassium silver cyanide	Argentate(1-), bis(cyano-C)-, potassium	506-61-6	P099
Promecarb	Phenol, 3-methyl-5-(1-methylethyl)-, methyl carbamate	2631-37-0	P201

Pronamide	Benzamide, 3,5-dichloro-N-(1,1-dimethyl-2-propynyl)-	23950-58-5	U192
1,3-Propane sultone	1,2-Oxathiolane, 2,2-dioxide	1120-71-4	U193
Propham	Carbamic acid, phenyl-, 1-methylethyl ester	122-42-9	U373
Propoxur	Phenol, 2-(1-methylethoxy)-, methylcarbamate	114-26-1	U411
n-Propylamine	1-Propanamine	107-10-8	U194
Propargyl alcohol	2-Propyn-1-ol	107-19-7	P102
Propylene dichloride	Propane, 1,2-dichloro-	78-87-5	U083
1,2-Propylenimine	Aziridine, 2-methyl-	75-55-8	P067
Propylthiouracil	4(1H)-Pyrimidinone, 2,3-dihydro-6-propyl-2-thioxo-	51-52-5	
Prosulfocarb	Carbamothioic acid, dipropyl-, S-(phenylmethyl) ester	52888-80-9	U387
Pyridine	Same	110-86-1	U196
Reserpine	Yohimban-16-carboxylic acid, 11,17-dimethoxy-18-[(3,4,5-trimethoxybenzoyl)oxy]-smethyl ester, (3beta,16beta,17alpha,18beta,20alpha)-	50-55-5	U200
Resorcinol	1,3-Benzenediol	108-46-3	U201
Saccharin	1,2-Benzisothiazol-3(2H)-one, 1,1-dioxide	81-07-2	U202
Saccharin salts			U202
Safrole	1,3-Benzodioxole, 5-(2-propenyl)-	94-59-7	U203
Selenium	Same	7782-49-2	
Selenium compounds, N.O.S.[1]			
Selenium dioxide	Selenious acid	7783-00-8	U204
Selenium sulfide	Selenium sulfide SeS_2	7488-56-4	U205
Selenium, tetrakis(dimethyl-dithiocarbamate)	Carbamodithioic acid, dimethyl-, tetraanhydrosulfide with orthothioselenious acid	144-34-3	
Selenourea	Same	630-10-4	P103
Silver	Same	7440-22-4	
Silver compounds, N.O.S.[1]			
Silver cyanide	Silver cyanide Ag(CN)	506-64-9	P104
Silvex (2,4,5-TP)	Propanoic acid, 2-(2,4,5-trichlorophenoxy)-	93-72-1	See F027
Sodium cyanide	Sodium cyanide Na(CN)	143-33-9	P106
Sodium dibutyldithiocarbamate	Carbamodithioic acid, dibutyl, sodium salt	136-30-1	
Sodium diethyldithiocarbamate	Carbamodithioic acid, diethyl-, sodium salt	148-18-5	
Sodium dimethyldithiocarbamate	Carbamodithioic acid, dimethyl-, sodium salt	128-04-1	
Sodium pentachlorophenate	Pentachlorophenol, sodium salt	131522	None
Streptozotocin	D-Glucose, 2-deoxy-2-[[(methylnitrosoamino)carbonyl]amino]-	18883-66-4	U206
Strychnine	Strychnidin-10-one	57-24-9	P108

Strychnine salts			P108
Sulfallate	Carbamodithioic acid, diethyl-, 2-chloro-2-propenyl ester	95-06-7	
TCDD	Dibenzo[b,e][1,4]dioxin, 2,3,7,8-tetrachloro-	1746-01-6	
Tetrabutylthiuram disulfide	Thioperoxydicarbonic diamide, tetrabutyl	1634-02-2	
1,2,4,5-Tetrachlorobenzene	Benzene, 1,2,4,5-tetrachloro-	95-94-3	U207
Tetrachlorodibenzo-p-dioxins			
Tetrachlorodibenzofurans			
Tetrachloroethane, N.O.S.[1]	Ethane, tetrachloro-, N.O.S.	25322-20-7	
1,1,1,2-Tetrachloroethane	Ethane, 1,1,1,2-tetrachloro-	630-20-6	U208
1,1,2,2-Tetrachloroethane	Ethane, 1,1,2,2-tetrachloro-	79-34-5	U209
Tetrachloroethylene	Ethene, tetrachloro-	127-18-4	U210
2,3,4,6-Tetrachlorophenol	Phenol, 2,3,4,6-tetrachloro-	58-90-2	See F027
***2,3,4,6-tetrachlorophenol, potassium salt	same	53535276	None
2,3,4,6-tetrachlorophenol, sodium salt	same	25567559	None
Tetraethyldithiopyrophosphate	Thiodiphosphoric acid, tetraethyl ester	3689-24-5	P109
Tetraethyl lead	Plumbane, tetraethyl-	78-00-2	P110
Tetraethyl pyrophosphate	Diphosphoric acid, tetraethyl ester	107-49-3	P111
Tetramethylthiuram monosulfide	Bis(dimethylthiocarbamoyl) sulfide	97-74-5	
Tetranitromethane	Methane, tetranitro-	509-14-8	P112
Thallium	Same	7440-28-0	
Thallium compounds, N.O.S.[1]			
Thallic oxide	Thallium oxide Tl_2O_3	1314-32-5	P113
Thallium(I) acetate	Acetic acid, thallium(1+) salt	563-68-8	U214
Thallium(I) carbonate	Carbonic acid, dithallium(1+) salt	6533-73-9	U215
Thallium(I) chloride	Thallium chloride TlCl	7791-12-0	U216
Thallium(I) nitrate	Nitric acid, thallium(1+) salt	10102-45-1	U217
Thallium selenite	Selenious acid, dithallium(1+) salt	12039-52-0	P114
Thallium(I) sulfate	Sulfuric acid, dithallium(1+) salt	7446-18-6	P115
Thioacetamide	Ethanethioamide	62-55-5	U218
Thiodicarb	Ethanimidothioic acid, N,N'-[thiobis [(methylimino) carbonyloxy]] bis-, dimethyl ester.	59669-26-0	U410
Thiofanox	2-Butanone, 3,3-dimethyl-1-(methylthio)-, 0-[(methylamino)carbonyl] oxime	39196-18-4	P045
Thiomethanol	Methanethiol	74-93-1	U153

Thiophanate-methyl	Carbamic acid, [1,2-phyenylenebis (iminocarbonothioyl)] bis-, dimethyl ester	23564-05-8	U409
Thiophenol	Benzenethiol	108-98-5	P014
Thiosemicarbazide	Hydrazinecarbothioamide	79-19-6	P116
Thiourea	Same	62-56-6	U219
Thiram	Thioperoxydicarbonic diamide $[(H_2N)C(S)]_2S_2$, tetramethyl-	137-26-8	U244
Tirpate	1,3-Dithiolane-2-carboxaldehyde, 2,4-dimethyl-, O-[(methylamino) carbonyl] oxime	26419-73-8	P185
Toluene	Benzene, methyl-	108-88-3	U220
Toluenediamine	Benzenediamine, ar-methyl-	25376-45-8	U221
Toluene-2,4-diamine	1,3-Benzenediamine, 4-methyl-	95-80-7	
Toluene-2,6-diamine	1,3-Benzenediamine, 2-methyl-	823-40-5	
Toluene-3,4-diamine	1,2-Benzenediamine, 4-methyl-	496-72-0	
Toluene diisocyanate	Benzene, 1,3-diisocyanatomethyl-	26471-62-5	U223
o-Toluidine	Benzenamine, 2-methyl-	95-53-4	U328
o-Toluidine hydrochloride	Benzenamine, 2-methyl-, hydrochloride	636-21-5	U222
p-Toluidine	Benzenamine, 4-methyl-	106-49-0	U353
Toxaphene	Same	8001-35-2	P123
Triallate	Carbamothioic acid, bis(1-methylethyl)-, S-(2,3,3-trichloro-2-propenyl) ester	2303-17-5	U389
1,2,4-Trichlorobenzene	Benzene, 1,2,4-trichloro-	120-82-1	
1,1,2-Trichloroethane	Ethane, 1,1,2-trichloro-	79-00-5	U227
Trichloroethylene	Ethene, trichloro-	79-01-6	U228
Trichloromethanethiol	Methanethiol, trichloro-	75-70-7	P118
Trichloromonofluoro methane	Methane, trichlorofluoro-	75-69-4	U121
2,4,5-Trichlorophenol	Phenol, 2,4,5-trichloro-	95-95-4	See F027
2,4,6-Trichlorophenol	Phenol, 2,4,6-trichloro-	88-06-2	See F027
2,4,5-T	Acetic acid, (2,4,5-trichlorophenoxy)-	93-76-5	See F027
Trichloropropane, N.O.S.[1]		25735-29-9	
1,2,3-Trichloropropane	Propane, 1,2,3-trichloro-	96-18-4	
Triethylamine	Ethanamine, N,N-diethyl-	121-44-8	U404
O,O,O-Triethyl phosphorothioate	Phosphorothioic acid, O,O,O-triethyl ester	126-68-1	
1,3,5-Trinitrobenzene	Benzene, 1,3,5-trinitro-	99-35-4	U234
Tris(1-aziridinyl)phosphine sulfide	Aziridine, 1,1',1"-phosphinothioylidynetris-	52-24-4	

Tris(2,3-dibromopropyl) phosphate	1-Propanol, 2,3-dibromo-, phosphate (3:1)	126-72-7	U235
Trypan blue	2,7-Naphthalenedisulfonic acid, 3,3'-[(3,3'-dimethyl[1,1'-biphenyl]-4,4'-diyl)bis(azo)]- bis[5-amino-4-hydroxy-, tetrasodium salt	72-57-1	U236
Uracil mustard	2,4-(1H,3H)-Pyrimidinedione, 5-[bis(2-chloroethyl)amino]-	66-75-1	U237
Vanadium pentoxide	Vanadium oxide V_2O_5	1314-62-1	P120
Vernolate	Carbamothioic acid, dipropyl-,S-propyl ester	1929-77-7	
Vinyl chloride	Ethene, chloro-	75-01-4	U043
Warfarin	2H-1-Benzopyran-2-one, 4-hydroxy-3-(3-oxo-1-phenylbutyl)-, when present at concentrations less than 0.3%	81-81-2	U248
Warfarin	2H-1-Benzopyran-2-one, 4-hydroxy-3-(3-oxo-1-phenylbutyl)-, when present at concentrations greater than 0.3%	81-81-2	P001
Warfarin salts, when present at concentrations less than 0.3%			U248
Warfarin salts, when present at concentrations greater than 0.3%			P001
Zinc cyanide	Zinc cyanide $Zn(CN)_2$	557-21-1	P121
Zinc phosphide	Zinc phosphide Zn_3P_2, when present at concentrations greater than 10%	1314-84-7	P122
Zinc phosphide	Zinc phosphide Zn_3P_2, when present at concentrations of 10% or less	1314-84-7	U249
Ziram	Zinc, bis(dimethylcarbamodithioato-S,S')-, (T-4)-	137-30-4	P205

FOOTNOTE: [1]The abbreviation N.O.S. (not otherwise specified) signifies those members of the general class not specifically listed by name in this appendix.

Appendix IX - (Reserved) [40 CFR 261 Appendix IX]
(Note: EPA maintains the listing in Appendix IX.)

(6) Exclusion/Exemptions [40 CFR 261.38 Subpart E]

(a) Comparable/Syngas Fuel Exclusion [40 CFR 261.38]

Wastes that meet the following comparable/syngas fuel requirements are not solid wastes:

1. Comparable fuel specifications

(i) Physical specifications

(I) Heating value. The heating value must exceed 5,000 BTU/lbs. (11,500 J/g).

(II) Viscosity. The viscosity must not exceed: 50 cs, as-fired.

(ii) Constituent specifications

For compounds listed in table 1 to this subparagraph the specification levels and, where non-detect is the specification, minimum required detection limits are: (see Table 1).

Table 1: Detection and Detection Limit Values for Comparable Fuel Specification

Chemical Name	CAS No.	Composite value (mg/kg)	Heating value (BTU/lb)	Concentration limit (mg/kg at 10,000 BTU/lb)	Minimum required detection limit (mg/kg)
Total Nitrogen as N	NA	9000	18400	4900	
Total Halogens as Cl	NA	1000	18400	540	
Total Organic Halogens as Cl	NA			(1)	
Polychlorinated biphenyls total [Arocolors, total]	1336-36-3	ND		ND	1.4
Cyanide, total	57-12-5	ND		ND	1.0
Metals:					
Antimony, total	7440-36-0	ND		12	
Arsenic, total	7440-38-2	ND		0.23	
Barium, total	7440-39-3	ND		23	
Beryllium, total	7440-41-7	ND		1.2	
Cadmium, total	7440-43-9		ND		1.2
Chromium, total	7440-47-3	ND		2.3	
Cobalt	7440-48-4	ND		4.6	
Lead, total	7439-92-1	57	18100	31	
Manganese	7439-96-5	ND		1.2	
Mercury, total	7439-97-6	ND		0.25	
Nickel, total	7440-02-0	106	18400	58	
Selenium, total	7782-49-2	ND		0.23	
Silver, total	7440-22-4	ND		2.3	
Thallium, total	7440-28-0	ND		23	
Hydrocarbons:					
Benzo[a]anthracene	56-55-3	ND		2400	
Benzene	71-43-2	8000	19600	4100	
Benzo[b]fluoranthene	205-99-2	ND		2400	
Benzo[k]fluoranthene	207-08-9	ND		2400	
Benzo[a]pyrene	50-32-8	ND		2400	
Chrysene	218-01-9	ND		2400	
Dibenzo[a, h]anthracene	53-70-3	ND		2400	
7, 12-Dimethylbenz[a]anthracene	57-97-6	ND		2400	
Fluoranthene	206-44-0	ND		2400	
Indeno(1, 2, 3-cd)pyrene	193-39-5	ND		2400	
3-Methylcholanthrene	56-49-5	ND		2400	
Naphthalene	91-20-3	6200	19400	3200	
Toluene	108-88-3	69000	19400	36000	
Oxygenates:					
Acetophenone	98-86-2	ND		2400	
Acrolein	107-02-8	ND		39	
Allyl alcohol	107-18-6	ND		30	
Bis(2-ethylhexl) phthalate [Di-2-ethylhexyl phthalate]	117-81-7	ND		2400	
Butyl benzyl phthalate	85-68-7	ND		2400	
o-Cresol [2-Methyl phenol]	95-48-7	ND		2400	
m-Cresol [3-Methyl phenol]	108-39-4	ND		2400	
p-Cresol [4-Methyl phenol]	106-44-5	ND		2400	

Di-n-butyl phthalate	84-74-2	ND	2400	
Diethyl phthalate	84-66-2	ND	2400	
2, 4-Dimethylphenol	105-67-9	ND	2400	
Dimethyl phthalate	131-11-3	ND	2400	
Di-n-octyl phthalate	117-84-0	ND	2400	
Endothall	145-73-3	ND	100	
Ethyl methacrylate	97-63-2	ND	39	
2-Ethoxyethanol [Ethylene glycol monoethyl ether]	110-80-5	ND	100	
Isobutyl alcohol	78-83-1	ND	39	
Isosafrole	120-58-1	ND	2400	
Methyl ethyl ketone [2-Butanone]	78-93-3	ND	39	
Methyl methacrylate	80-62-6	ND	39	
1, 4-Naphthoquinone	130-15-4	ND	2400	
Phenol	108-95-2	ND	2400	
Propargyl alcohol [2-Propyn-1-ol]	107-19-7	ND	30	
Safrole	94-59-7	ND	2400	
Sulfonated Organics:				
Carbon disulfide	75-15-0	ND	ND	39
Disulfoton	298-04-4	ND	ND	2400
Ethyl methanesulfonate	62-50-0	ND	ND	2400
Methyl methanesulfonate	66-27-3	ND	ND	2400
Phorate	298-02-2	ND	ND	2400
1, 3-Propane sultone	1120-71-4	ND	ND	100
Tetraethyldithiopyrophosphate [Sulfotepp]	3689-24-5	ND	ND	2400
Thiophenol [Benzenethiol]	108-98-5	ND	ND	30
O, O, O-Triethyl phosphorothioate	126-68-1	ND	ND	2400
Nitrogenated Organics:				
Acetonitrile [Methyl cyanide]	75-05-8	ND	ND	39
2-Acetylaminofluorene [2-AAF]	53-96-3	ND	ND	2400
Acrylonitrile	107-13-1	ND	ND	39
4-Aminobiphenyl	92-67-1	ND	ND	2400
4-Aminopyridine	504-24-5	ND	ND	100
Aniline	62-53-3	ND	ND	2400
Benzidine	92-87-5	ND	ND	2400
Dibenz[a, j]acridine	224-42-0	ND	ND	2400
O, O-Diethyl O-pyrazinyl Phosphorothioate [Thionazin]	297-97-2	ND	ND	2400
Dimethoate	60-51-5	ND	ND	2400
p-(Dimethylamino) azobenzene [4-dimethyl- aminoazobenzene]	60-11-7	ND	ND	2400
3,3'-Dimethylbenzidine	119-93-7	ND	ND	2400
α, α-Dimethylphenethylamine	122-09-8	ND	ND	2400
3, 3'-Dimethoxybenzidine	119-90-4	ND	ND	100
1, 3-Dinitrobenzene [m-Dinitrobenzene]	99-65-0	ND	ND	2400
4, 6-Dinitro-o-cresol	534-52-1	ND	ND	2400
2, 4-Dinitrophenol	51-28-5	ND	ND	2400
2, 4-Dinitrotoluene	121-14-2	ND	ND	2400
2, 6-Dinitrotoluene	606-20-2	ND	ND	2400
Dinoseb [2-sec-Butyl-4, 6-dinitrophenol]	88-85-7	ND	ND	2400
Diphenylamine	122-39-4	ND	ND	2400
Ethyl carbamate [Urethane]	51-79-6	ND	ND	100
Ethylenethiourea (2-Imidazolidinethione)	96-45-7	ND	ND	110
Famphur	52-85-7	ND	ND	2400
Methacrylonitrile	126-98-7	ND	ND	39
Methapyrilene	91-80-5	ND	ND	2400
Methomyl	16752-77-5	ND	ND	57

2-Methyllactonitrile, [Acetone cyanohydrin]	75-86-5	ND	ND	100
Methyl parathion	298-00-0	ND	ND	2400
MNNG (N-Metyl-N-nitroso-N'-nitroguanidine)	70-25-7	ND	ND	110
1-Naphthylamine, [α-Naphthylamine]	134-32-7	ND	ND	2400
2-Naphthylamine, [β-Naphthylamine]	91-59-8	ND	ND	2400
Nicotine	54-11-5	ND	ND	100
4-Nitroaniline, [p-Nitroaniline]	100-01-6	ND	ND	2400
Nitrobenzene	98-95-3	ND	ND	2400
p-Nitrophenol, [p-Nitrophenol]	100-02-7	ND	ND	2400
5-Nitro-o-toluidine	99-55-8	ND	ND	2400
N-Nitrosodi-n-butylamine	924-16-3	ND	ND	2400
N-Nitrosodiethylamine	55-18-5	ND	ND	2400
N-Nitrosodiphenylamine, [Diphenylnitrosamine]	86-30-6	ND	ND	2400
N-Nitroso-N-methylethylamine	10595-95-6	ND	ND	2400
N-Nitrosomorpholine	59-89-2	ND	ND	2400
N-Nitrosophiperidine	100-75-4	ND	ND	2400
N-Nitrosopyrrolidine	930-55-2	ND	ND	2400
2-Nitropropane	79-46-9	ND	ND	30
Parathion	56-38-2	ND	ND	2400
Phenacetin	62-44-2	ND	ND	2400
1, 4-Phenylne diamine, [p-Phenylenediamine]	106-50-3	ND	ND	2400
N-Phenylthiourea	103-85-5	ND	ND	57
2-Picoline [alpha-Picoline]	109-06-8	ND	ND	2400
Propylthioracil, [6-Propyl-2-thiouracil]	51-52-5	ND	ND	100
Pyridine	110-86-1	ND	ND	2400
Strychnine	57-24-9	ND	ND	100
Thioacetamide	62-55-5	ND	ND	57
Thiofanox	39196-18-4	ND	ND	100
Thiourea	62-56-6	ND	ND	57
Toluene-2,4-diamine [2,4-Diaminotoluene]	95-80-7	ND	ND	57
Toluene-2, 6-diamine [2, 6-Diaminotoluene]	823-40-5	ND	ND	57
o-Toluidine	95-53-4	ND	ND	2400
p-Toluidine	106-49-0	ND	ND	100
1, 3, 5-Trinitrobenzene, [sym-Trinitobenzene]	99-35-4	ND	ND	2400
Halogenated Organics:				
Allyl chloride	107-05-1	ND	ND	39
Aramite	140-57-8	ND	ND	2400
Benzal chloride [Dichloromethyl benzene]	98-87-3	ND	ND	100
Benzyl chloride	100-44-77	ND	ND	100
bis(2-Chloroethyl)ether [Dichoroethyl ether]	111-44-4	ND	ND	2400
Bromoform [Tribromomethane]	75-25-2	ND	ND	39
Bromomethane [Methyl bromide]	74-83-9	ND	ND	39
4-Bromophenyl phenyl ether [p-Bromo diphenyl ether]	101-55-3	ND	ND	2400
Carbon tetrachloride	56-23-5	ND	ND	39
Chlordane	57-74-9	ND	ND	14
p-Chloroaniline	106-47-8	ND	ND	2400
Chlorobenzene	108-90-7	ND	ND	39
Chlorobenzilate	510-15-6	ND	ND	2400
p-Chloro-m-cresol	59-50-7	ND	ND	2400
2-Chloroethyl vinyl ether	110-75-8	ND	ND	39

Chloroform	67-66-3	ND	ND	39
Chloromethane [Methyl chloride]	74-87-3	ND	ND	39
2-Chloronaphthalene [beta-Chloronaphthalene]	91-58-7	ND	ND	2400
2-Chlorophenol [o-Chlorophenol]	95-57-8	ND	ND	2400
Chloroprene [2-Chloro-1, 3-butadiene]	1126-99-8	ND	ND	39
2, 4-D [2, 4-Dichlorophenoxyacetic acid]	94-75-7	ND	ND	7.0
Diallate	2303-16-4	ND	ND	2400
1, 2-Dibromo-3-chloropropane	96-12-8	ND	ND	39
1, 2-Dichlorobenzene [o-Dichlorobenzene]	95-50-1	ND	ND	2400
1, 3-Dichlorobenzene [m-Dichlorobenzene]	541-73-1	ND	ND	2400
1, 4-Dichlorobenzene [p-Dichlorobenzene]	106-46-7	ND	ND	2400
3, 3'-Dichlorobenzidine	91-94-1	ND	ND	2400
Dichlorodifluoromethane [CFC-12]	75-71-8	ND	ND	39
1, 2-Dichloroethane [Ethylene dichloride]	107-06-2	ND	ND	39
1, 1-Dichloroethylene [Vinylidene chloride]	75-35-4	ND	ND	39
Dichloromethoxy ethane [Bis(2-chloro-ethoxy)methane]	111-91-1	ND	ND	2400
2,4-Dichlorophenol	120-83-2	ND	ND	2400
2, 6-Dichlorophenol	87-65-0	ND	ND	2400
1, 2-Dichloropropane [Propylene dichloride]	78-87-5	ND	ND	39
cis-1, 3-Dichloropropylene	10061-01-5	ND	ND	39
trans-1, 3-Dichloropropylene	10061-02-6	ND	ND	39
1,3-Dichloro-2propanol	96-23-1	ND	ND	30
Endosulfan I	959-98-8	ND	ND	1.4
Endosulfan II	33213-65-9	ND	ND	1.4
Endrin	72-20-8	ND	ND	1.4
Endrin aldehyde	7421-93-4	ND	ND	1.4
Endrin Ketone	53494-70-5	ND	ND	1.4
Epichlorohydrin [1-Chloro-2, 3-epoxy propane]	106-89-8	ND	ND	30
Ethylidene dichloride [1, 1-Dichloroethane]	75-34-3	ND	ND	39
2-Fluoroacetamide	640-19-7	ND	ND	100
Heptachlor	76-44-8	ND	ND	1.4
Heptachlor epoxide	1024-57-3	ND	ND	2.8
Hexachlorobenzene	118-74-1	ND	ND	2400
Hexachloro-1, 3-butadiene [Hexachlorobutadiene]	87-68-3	ND	ND	2400
Hexachlorocyclopentadiene	77-47-4	ND	ND	2400
Hexachloroethane	67-72-1	ND	ND	2400
Hexachlorophene	70-30-4	ND	ND	59000
Hexachloropropene [Hexachloropropylene]	1888-71-7	ND	ND	2400
Isodrin	465-73-6	ND	ND	2400
Kepone [Chlordecone]	143-50-0	ND	ND	4700
Lindane [gamma-BHC] [gamma-Hexachloro-cyclohexane]	58-89-9	ND	ND	1.4
Methylene chloride [Dichloromethane]	75-09-2	ND	ND	39
4, 4'-Methylene-bis(2-chloroaniline)	101-14-4	ND	ND	100
Methyl iodide [Iodomethane]	74-88-4	ND	ND	39
Pentachlorobenzene	608-93-5	ND	ND	2400
Pentachloroethane	76-01-7	ND	ND	39
Pentachloronitrobenzene [PCNB] [Quintobenzene] [Quintozene]	82-68-8	ND	ND	2400

Pentachlorophenol	87-86-5	ND		ND	2400
Pronamide	23950-58-5	ND		ND	2400
Silvex [2, 4, 5-Trichlorophenoxypropionic acid]	93-72-1	ND		ND	7.0
2, 3, 7, 8-Tetrachlorodibenzo-p-dioxin [2, 3, 7, 8-TCDD]	1746-01-6	ND		ND	30
1, 2, 4, 5-Tetrachlorobenzene	95-94-3	ND		ND	2400
1, 1, 2, 2-Tetrachloroethane	79-34-5	ND		ND	39
Tetrachloroethylene [Perchloroethylene]	127-18-4	ND		ND	39
2, 3, 4, 6-Tetrachlorophenol	58-90-2	ND		ND	2400
1, 2, 4-Trichlorobenzene	120-82-1	ND		ND	2400
1,1,1-Trichloroethane [Methyl chloroform]	71-55-6	ND		ND	39
1,1,2-Trichloroethane [Vinyl trichloride]	79-00-5	ND		ND	39
Trichloroethylene	79-01-6	ND		ND	39
Trichlorofluoromethane [Trichloromono-Fluoromethane]	75-69-4	ND		ND	39
2, 4, 5-Trichlorophenol	95-95-4	ND		ND	2400
2, 4, 6-Trichlorophenol	88-06-2	ND		ND	2400
1, 2, 3-Trichloropropane	96-18-4	ND		ND	39
Vinyl Chloride	75-01-4	ND		ND	39

Notes:

NA –Not Applicable.
ND –Nondetect.

[1]25 or individual halogenated organics listed below.

[a] Absence of PCBs can also be demonstrated by using appropriate screening methods, e.g., immunoassay kit for PCB in oils (Method 4020) or colorimetric analysis for PCBs in oil (Method 9079).
[b] Some minimum required detection limits are above the total halogen limit of 540 ppm. The detection limits reflect what was achieved during EPA testing and analysis and also analytical complexity associated with measuring all halogen compounds on Appendix VIII at low levels. EPA recognizes that in practice the presence of these compounds will be functionally limited by the molecular weight and the total halogen limit of 540 ppm.

2. Synthesis gas fuel specifications

Synthesis gas fuel (i.e., syngas fuel) that is generated from hazardous waste must:

(i) Have a minimum Btu value of 100 Btu/scf (British thermal unit per standard cubic foot);

(ii) Contain less than 1 ppmv of total halogen;

(iii) Contain less than 300 ppmv of total nitrogen other than diatomic nitrogen (N_2);

(iv) Contain less than 200 ppmv of hydrogen sulfide; and

(v) Contain less than 1 ppmv of each hazardous constituent in the target list of Appendix VIII constituents of this rule.

3. Implementation

Waste that meets the comparable or syngas fuel specifications provided by parts 1 or 2 of this subparagraph (these constituent levels must be achieved by the comparable fuel when generated, or as a result of treatment or blending, as provided in subparts 3(iii) or (iv) of this subparagraph) is excluded from the definition of solid waste provided that the following requirements are met:

(i) Notices

For purposes of this subparagraph, the person claiming and qualifying for the exclusion is called the comparable/syngas fuel generator and the person burning the comparable/syngas fuel is called the comparable/syngas burner. The person who generates the comparable fuel or syngas fuel must claim and certify to the exclusion.

(I) Commissioner, Department of Environment and Conservation (Director, Division of Solid Waste Management and Director of Division of Air Pollution Control).

I. The generator must submit a one-time notice to the Commissioner and Directors of Solid Waste Management and Air Pollution Control, in whose jurisdiction the exclusion is being claimed and where the comparable/syngas fuel will be burned, certifying compliance with the conditions of the exclusion and providing documentation as required by subitem 3(i)(I)III of this subparagraph;

II. If the generator is a company that generates comparable/syngas fuel at more than one facility, the generator shall specify at which sites the comparable/syngas fuel will be generated;

III. A comparable/syngas fuel generator's notification to the Commissioner must contain the following items:

A. The name, address, and Installation Identification number of the person/facility claiming the exclusion;

B. The applicable Hazardous Waste Codes for the hazardous waste;

C. Name and address of the units, meeting the requirements of subpart 3(ii) of this subparagraph, that will burn the comparable/syngas fuel; and

D. The following statement is signed and submitted by the person claiming the exclusion or his authorized representative:

"Under penalty of criminal and civil prosecution for making or submitting false statements, representations, or omissions, I certify that the requirements of Rule 0400-12-01-.02(6)(a) have been met for all waste identified in this notification. Copies of the records and information required at Rule 0400-12-01-.02(6)(a)3(x) are available at the comparable/syngas fuel generator's facility. Based on my inquiry of the individuals immediately responsible for obtaining the information, the information is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment."

(II) Public notice

Prior to burning an excluded comparable/syngas fuel, the burner must publish in a major newspaper of general circulation local to the site where the fuel will be burned, a notice entitled ``Notification of Burning a Comparable/Syngas Fuel Excluded Under the Resource Conservation and Recovery Act" containing the following information:

I. Name, address, and Installation Identification number of the generating facility;

II. Name and address of the unit(s) that will burn the comparable/syngas fuel;

III. A brief, general description of the manufacturing, treatment, or other process generating the comparable/syngas fuel;

IV. An estimate of the average and maximum monthly and annual quantity of the waste claimed to be excluded; and

V. Name and mailing address of the Commissioner to whom the claim was submitted.

(ii) Burning

The comparable/syngas fuel exclusion for fuels meeting the requirements of parts 1 or 2 of this subparagraph and subpart (i) of this part applies only if the fuel is burned in the following units that also shall be subject to Federal/State/local air emission requirements, including all applicable Clean Air Act, Maximum Achievable Control Technologies (CAA MACT) requirements:

(I) Industrial furnaces as defined in Rule 0400-12-01-.01(2)(a);

(II) Boilers, as defined in Rule 0400-12-01-.01(2)(a), that are further defined as follows:

I. Industrial boilers located on the site of a facility engaged in a manufacturing process where substances are transformed into new products, including the component parts of products, by mechanical or chemical processes; or

II. Utility boilers used to produce electric power, steam, heated or cooled air, or other gases or fluids for sale;

(III) Hazardous waste incinerators subject to regulation under Rule 0400-12-01-.05(15) or Rule 0400-12-01-.06(15) or applicable CAA MACT standards.

(IV) Gas turbines used to produce electric power, steam, heated or cooled air, or other gases or fluids for sale.

(iii) Blending to meet the viscosity specification

A hazardous waste blended to meet the viscosity specification shall:

(I) As generated and prior to any blending, manipulation, or processing meet the constituent and heating value specifications of item 1(i)(I) and subpart 1(ii) of this subparagraph;

(II) Be blended at a facility that is subject to the applicable requirements of Rules 0400-12-01-.05 and .06, or Rule 0400-12-01-.03(4)(e); and

(III) Not violate the dilution prohibition of subpart 3(vi) of this subparagraph.

(iv) Treatment to meet the comparable fuel exclusion specifications

(I) A hazardous waste may be treated to meet the exclusion specifications of subparts 1(i) and (ii) of this subparagraph provided the treatment:

I. Destroys or removes the constituent listed in the specification or raises the heating value by removing or destroying hazardous constituents or materials;

II. Is performed at a facility that is subject to the applicable requirements of Rules 0400-12-01-.05 and .06, or Rule 0400-12-01-.03(4)(e); and

III. Does not violate the dilution prohibition of subpart 3(vi) of this subparagraph.

(II) Residuals resulting from the treatment of a hazardous waste listed in paragraph (4) of this rule to generate a comparable fuel remain a hazardous waste.

(v) Generation of a syngas fuel

(I) A syngas fuel can be generated from the processing of hazardous wastes to meet the exclusion specifications of part 2 of this subparagraph provided the processing:

I. Destroys or removes the constituent listed in the specification or raises the heating value by removing or destroying constituents or materials;

II. Is performed at a facility that is subject to the applicable requirements of Rules 0400-12-01-.05 and .06, or Rule 0400-12-01-.03(4)(e); or is an exempt recycling unit pursuant to part (1)(f)3 of this rule; and

III. Does not violate the dilution prohibition of subpart 3(vi) of this subparagraph.

(II) Residuals resulting from the treatment of a hazardous waste listed in paragraph (4) of this rule to generate a syngas fuel remain a hazardous waste.

(vi) Dilution prohibition for comparable and syngas fuels

No generator, transporter, handler, or owner or operator of a treatment, storage, or disposal facility shall in any way dilute a hazardous waste to meet the exclusion specifications of item 1(i)(I), subpart 1(ii) or part 2 of this subparagraph.

(vii) Waste analysis plans

The generator of a comparable/syngas fuel shall develop and follow a written waste analysis plan which describes the procedures for sampling and analysis of the hazardous waste to be excluded. The plan shall be followed and retained at the facility excluding the waste.

(I) At a minimum, the plan must specify

I. The parameters for which each hazardous waste will be analyzed and the rationale for the selection of those parameters;

II. The test methods which will be used to test for these parameters;

III. The sampling method which will be used to obtain a representative sample of the waste to be analyzed;

IV. The frequency with which the initial analysis of the waste will be reviewed or repeated to ensure that the analysis is accurate and up to date; and

V. If process knowledge is used in the waste determination, any information prepared by the generator in making such determination.

(II) The waste analysis plan shall also contain records of the following:

I. The dates and times waste samples were obtained, and the dates the samples were analyzed;

II. The names and qualifications of the person(s) who obtained the samples;

III. A description of the temporal and spatial locations of the samples;

IV. The name and address of the laboratory facility at which analyses of the samples were performed;

V. A description of the analytical methods used, including any clean-up and sample preparation methods;

VI. All quantitation limits achieved and all other quality control results for the analysis (including method blanks, duplicate analyses, matrix spikes, etc.), laboratory quality assurance data, and description of any deviations from analytical methods written in the plan or from any other activity written in the plan which occurred;

VII. All laboratory results demonstrating that the exclusion specifications have been met for the waste; and

VIII. All laboratory documentation that support the analytical results, unless a contract between the claimant and the laboratory provides for the documentation to be maintained by the laboratory for the period specified in subpart 3(xi) of this subparagraph and also provides for the availability of the documentation to the claimant upon request.

(III) Syngas fuel generators shall submit for approval, prior to performing sampling, analysis, or any management of a syngas fuel as an excluded waste, a waste analysis plan containing the elements of item 3(vii)(I) of this subparagraph to the appropriate regulatory authority. The approval of waste analysis plans must be stated in writing and received by the facility prior to sampling and analysis to demonstrate the exclusion of a

syngas. The approval of the waste analysis plan may contain such provisions and conditions as the regulatory authority deems appropriate.

(viii) Comparable fuel sampling and analysis

(I) General

For each waste for which an exclusion is claimed, the generator of the hazardous waste must test for all the constituents on appendix VIII to this rule, except those that the generator determines, based on testing or knowledge, should not be present in the waste. The generator is required to document the basis of each determination that a constituent should not be present. The generator may not determine that any of the following categories of constituents should not be present:

I. A constituent that triggered the toxicity characteristic for the waste constituents that were the basis of the listing of the waste stream, or constituents for which there is a treatment standard for the waste code in Rule 0400-12-01-.10(3)(a);

II. A constituent detected in previous analysis of the waste;

III. Constituents introduced into the process that generates the waste; or

IV. Constituents that are byproducts or side reactions to the process that generates the waste.

(Note to subpart 3(viii): Any claim under this subparagraph must be valid and accurate for all hazardous constituents; a determination not to test for a hazardous constituent will not shield a generator from liability should that constituent later be found in the waste above the exclusion specifications.)

(II) For each waste for which the exclusion is claimed where the generator of the comparable/syngas fuel is not the original generator of the hazardous waste, the generator of the comparable/syngas fuel may not use process knowledge pursuant to item 3(viii)(I) of this subparagraph and must test to determine that all of the constituent specifications of subpart 1(ii) and part 2 of this subparagraph have been met.

(III) The comparable/syngas fuel generator may use any reliable analytical method to demonstrate that no constituent of concern is present at concentrations above the specification levels. It is the responsibility of the generator to ensure that the sampling and analysis are unbiased, precise, and representative of the waste. For the waste to be eligible for exclusion, a generator must demonstrate that:

I. Each constituent of concern is not present in the waste above the specification level at the 95% upper confidence limit around the mean; and

II. The analysis could have detected the presence of the constituent at or below the specification level at the 95% upper confidence limit around the mean.

(IV) Nothing in this item preempts, overrides or otherwise negates the provision in Rule 0400-12-01-.03(1)(b), which requires any person who generates a solid waste to determine if that waste is a hazardous waste.

(V) In an enforcement action, the burden of proof to establish conformance with the exclusion specification shall be on the generator claiming the exclusion.

(VI) The generator must conduct sampling and analysis in accordance with their waste analysis plan developed under subpart 3(vii) of this subparagraph.

(VII) Syngas fuel and comparable fuel that has not been blended in order to meet the kinematic viscosity specifications shall be analyzed as generated.

(VIII) If a comparable fuel is blended in order to meet the kinematic viscosity specifications, the generator shall:

I. Analyze the fuel as generated to ensure that it meets the constituent and heating value specifications; and

II. After blending, analyze the fuel again to ensure that the blended fuel continues to meet all comparable/syngas fuel specifications.

(IX) Excluded comparable/syngas fuel must be re-tested, at a minimum, annually and must be retested after a process change that could change the chemical or physical properties of the waste.

(ix) Speculative accumulation

Any persons handling a comparable/syngas fuel are subject to the speculative accumulation test under subpart (1)(b)3(iv) of this rule.

(x) Records

The generator must maintain records of the following information on-site:

(I) All information required to be submitted to the implementing authority as part of the notification of the claim:

I. The owner/operator name, address, and facility Installation ID number of the person claiming the exclusion;

II. The applicable Hazardous Waste Codes for each hazardous waste excluded as a fuel; and

III. The certification signed by the person claiming the exclusion or his authorized representative.

(II) A brief description of the process that generated the hazardous waste and process that generated the excluded fuel, if not the same;

(III) An estimate of the average and maximum monthly and annual quantities of each waste claimed to be excluded;

(IV) Documentation for any claim that a constituent is not present in the hazardous waste as required under item 3(viii)(I) of this subparagraph;

(V) The results of all analyses and all detection limits achieved as required under subpart 3(viii) of this subparagraph;

(VI) If the excluded waste was generated through treatment or blending, documentation as required under subpart 3(iii) or (iv) of this subparagraph;

(VII) If the waste is to be shipped off-site, a certification from the burner as required under subpart 3(xii) of this subparagraph;

(VIII) A waste analysis plan and the results of the sampling and analysis that includes the following:

I. The dates and times waste samples were obtained, and the dates the samples were analyzed;

II. The names and qualifications of the person(s) who obtained the samples;

III. A description of the temporal and spatial locations of the samples;

IV. The name and address of the laboratory facility at which analyses of the samples were performed;

V. A description of the analytical methods used, including any clean-up and sample preparation methods;

VI. All quantitation limits achieved and all other quality control results for the analysis (including method blanks, duplicate analyses, matrix spikes, etc.), laboratory quality assurance data, and description of any deviations from analytical methods written in the plan or from any other activity written in the plan which occurred;

VII. All laboratory analytical results demonstrating that the exclusion specifications have been met for the waste; and

VIII. All laboratory documentation that support the analytical results, unless a contract between the claimant and the laboratory provides for the documentation to be maintained by the laboratory for the period specified in subpart 3(xi) of this subparagraph and also provides for the availability of the documentation to the claimant upon request; and

(IX) If the generator ships comparable/syngas fuel off-site for burning, the generator must retain for each shipment the following information on-site:

I. The name and address of the facility receiving the comparable/syngas fuel for burning;

II. The quantity of comparable/syngas fuel shipped and delivered;

II. The date of shipment or delivery;

IV. A cross-reference to the record of comparable/syngas fuel analysis or other information used to make the determination that the comparable/syngas fuel meets the specifications as required under subpart 3(viii) of this subparagraph; and

V. A one-time certification by the burner as required under subpart 3(xii) of this subparagraph.

(xi) Records retention

Records must be maintained for the period of three years. A generator must maintain a current waste analysis plan during that three year period.

(xii) Burner certification

Prior to submitting a notification to the Commissioner, a comparable/syngas fuel generator who intends to ship their fuel off-site for burning must obtain a one-time written, signed statement from the burner:

(I) Certifying that the comparable/syngas fuel will only be burned in an industrial furnace or boiler, utility boiler, or hazardous waste incinerator, as required under subpart 3(ii) of this subparagraph;

(II) Identifying the name and address of the units that will burn the comparable/syngas fuel; and

(III) Certifying that the state in which the burner is located is authorized to exclude wastes as comparable/syngas fuel under the provisions of this subparagraph.

(xiii) Ineligible waste codes

Wastes that are listed because of presence of dioxins or furans, as set out in Appendix VII of this rule, are not eligible for this exclusion, and any fuel produced from or otherwise containing these wastes remains a hazardous waste subject to full hazardous waste management requirements.

(b) Conditional Exclusion for Used, Broken Cathode Ray Tubes (CRTs) and Processed CRT Glass Undergoing Recycling [40 CFR 261.39]

Used, broken CRTs are not solid wastes if they meet the following conditions:

1. Prior to processing:

These materials are not solid wastes if they are destined for recycling and if they meet the following requirements:

(i) Storage

The broken CRTs must be either:

(I) Stored in a building with a roof, floor, and walls, or

(II) Placed in a container (i.e., a package or a vehicle) that is constructed, filled, and closed to minimize releases to the environment of CRT glass (including fine solid materials).

(ii) Labeling

Each container in which the used, broken CRT is contained must be labeled or marked clearly with one of the following phrases: ``Used cathode ray tube(s)-contains leaded glass " or ``Leaded glass from televisions or computers." It must also be labeled: ``Do not mix with other glass materials."

(iii) Transportation

The used, broken CRTs must be transported in a container meeting the requirements (i)(II) and subpart (ii) of this part.

(iv) Speculative accumulation and use constituting disposal

The used, broken CRTs are subject to the limitations on speculative accumulation as defined in subpart (1)(a)3(viii) of this rule. If they are used in a manner constituting disposal, they must comply with the applicable requirements of Rule 0400-12-01-.09(3) instead of the requirements of this subparagraph.

(v) Exports

[Note: The implementation of this subpart (Rule 0400-12-01-.02(6)(b)1(v) Exports) remains the responsibility of EPA.]

In addition to the applicable conditions specified in subparts (i) through (iv) of this part, exporters of used, broken CRTs must comply with the following requirements:

(I) Notify EPA of an intended export before the CRTs are scheduled to leave the United States. A complete notification should be submitted sixty (60) days before the initial shipment is intended to be shipped off-site. This notification may cover export activities extending over a twelve (12) month or lesser period. The notification must be in writing, signed by the exporter, and include the following information:

I. Name, mailing address, telephone number and EPA ID number (if applicable) of the exporter of the CRTs.

II. The estimated frequency or rate at which the CRTs are to be exported and the period of time over which they are to be exported.

III. The estimated total quantity of CRTs specified in kilograms.

IV. All points of entry to and departure from each foreign country through which the CRTs will pass.

V. A description of the means by which each shipment of the CRTs will be transported (e.g., mode of transportation vehicle (air, highway, rail, water, etc.), type(s) of container (drums, boxes, tanks, etc.)).

VI. The name and address of the recycler and any alternate recycler.

VII. A description of the manner in which the CRTs will be recycled in the foreign country that will be receiving the CRTs.

VIII. The name of any transit country through which the CRTs will be sent and a description of the approximate length of time the CRTs will remain in such country and the nature of their handling while there.

(II) Notifications submitted by mail should be sent to the following mailing address: Office of Enforcement and Compliance Assurance, Office of Federal Activities, International Compliance Assurance Division, (Mail Code 2254A), Environmental Protection Agency, 1200 Pennsylvania Ave., NW., Washington, DC 20460. Hand-delivered notifications should

be sent to: Office of Enforcement and Compliance Assurance, Office of Federal Activities, International Compliance Assurance Division, (Mail Code 2254A), Environmental Protection Agency, Ariel Rios Bldg., Room 6144, 1200 Pennsylvania Ave., NW., Washington, DC. In both cases, the following shall be prominently displayed on the front of the envelope: "Attention: Notification of Intent to Export CRTs."

(III) Upon request by EPA, the exporter shall furnish to EPA any additional information which a receiving country requests in order to respond to a notification.

(IV) EPA will provide a complete notification to the receiving country and any transit countries. A notification is complete when EPA receives a notification which EPA determines satisfies the requirements of item (I) of this subpart. Where a claim of confidentiality is asserted with respect to any notification information required by item (I) of this subpart, EPA may find the notification not complete until any such claim is resolved in accordance with 40 CFR 260.2.

(V) The export of CRTs is prohibited unless the receiving country consents to the intended export. When the receiving country consents in writing to the receipt of the CRTs, EPA will forward an Acknowledgment of Consent to Export CRTs to the exporter. Where the receiving country objects to receipt of the CRTs or withdraws a prior consent, EPA will notify the exporter in writing. EPA will also notify the exporter of any responses from transit countries.

(VI) When the conditions specified on the original notification change, the exporter must provide EPA with a written renotification of the change, except for changes to the telephone number in subitem 1(v)(I)I of this subparagraph and decreases in the quantity indicated pursuant to 1(v)(I)III of this subparagraph. The shipment cannot take place until consent of the receiving country to the changes has been obtained (except for changes to information about points of entry and departure and transit countries pursuant to subitem 1(v)(I)IV and subitem 1(v)(I)VIII of this subparagraph and the exporter of CRTs receives from EPA a copy of the Acknowledgment of Consent to Export CRTs reflecting the receiving country's consent to the changes.

(VII) A copy of the Acknowledgment of Consent to Export CRTs must accompany the shipment of CRTs. The shipment must conform to the terms of the Acknowledgment.

(VIII) If a shipment of CRTs cannot be delivered for any reason to the recycler or the alternate recycler, the exporter of CRTs must renotify EPA of a change in the conditions of the original notification to allow shipment to a new recycler in accordance with item 1(v)(VI) of this subparagraph and obtain another Acknowledgment of Consent to Export CRTs.

(IX) Exporters must keep copies of notifications and Acknowledgments of Consent to Export CRTs for a period of three years following receipt of the Acknowledgment.

2. Requirements for used CRT processing

Used, broken CRTs undergoing CRT processing as defined in Rule 0400-12-01-.01(2)(a) are not solid wastes if they meet the following requirements:

(i) Storage

Used, broken CRTs undergoing processing are subject to the requirement of subpart 1(iv) of this subparagraph.

(ii) Processing

(I) All activities specified in paragraphs (2) and (3) of the definition of ``CRT processing'' in Rule 0400-12-01-.01(2)(a) must be performed within a building with a roof, floor, and walls; and

(II) No activities may be performed that use temperatures high enough to volatilize lead from CRTs.

3. Processed CRT glass sent to CRT glass making or lead smelting

Glass from used CRTs that is destined for recycling at a CRT glass manufacturer or a lead smelter after processing is not a solid waste unless it is speculatively accumulated as defined in subpart (1)(a)3(viii) of this rule.

4. Use constituting disposal

Glass from used CRTs that is used in a manner constituting disposal must comply with the requirements of Rule 0400-12-01-.09(3) instead of the requirements of this subparagraph.

(c) Conditional Exclusion for Used, Intact Cathode Ray Tubes (CRTs) Exported for Recycling [40 CFR 261.40]

[Note: The implementation of this subparagraph remains the responsibility of EPA.]

Used, intact CRTs exported for recycling are not solid wastes if they meet the notice and consent conditions of subpart (b)1(v) of this paragraph, and if they are not speculatively accumulated as defined in subpart (1)(a)3(viii) of this rule.

(d) Notification and Recordkeeping for Used, Intact Cathode Ray Tubes (CRTs) Exported for Reuse [40 CFR 261.41]

[Note: The implementation of this subparagraph remains the responsibility of EPA.]

1. Persons who export used, intact CRTs for reuse must send a one-time notification to the Regional Administrator. The notification must include a statement that the notifier plans to export used, intact CRTs for reuse, the notifier's name, address, and EPA ID number (if applicable) and the name and phone number of a contact person.

2. Persons who export used, intact CRTs for reuse must keep copies of normal business records, such as contracts, demonstrating that each shipment of exported CRTs will be reused. This documentation must be retained for a period of at least three years from the date the CRTs were exported.

Authority: T.C.A. §§68-212-101 et seq. and 4-5-201 et seq.

0400-12-01-.03 Notification Requirements and Standards Applicable to Generators of Hazardous Wastes.

(1) General [40 CFR 262 Subpart A]

(a) Purpose, Scope, and Applicability [40 CFR 262.10 and 262.70]

1. These regulations establish standards for generators of hazardous waste in Tennessee.

2. Rule 0400-12-01-.02(1)(e)3 and 4 must be used to determine the applicability of provisions of this rule that are dependent on calculations of the quantity of hazardous waste generated per month.

3. A generator who treats, stores, or disposes of hazardous waste on-site must only comply with the following portions of this rule with respect to that waste: subparagraph (b) of this paragraph for determining whether or not he has a hazardous waste, paragraph (2) for notifying and subparagraph (c) of this paragraph for obtaining an installation identification number, subparagraph (4)(e) for accumulation of hazardous waste, parts (5)(a)3 and 4 for recordkeeping, subparagraph (5)(b) for annual reporting, and subparagraph (5)(e) for additional reporting; and if applicable, Rule 0400-12-01-.02(1)(d)2(ii)(II) for farmers.

(Note: A generator who treats, stores, or disposes of hazardous waste on-site must comply with the applicable standards and permit requirements set forth in Rules 0400-12-01-.05, .06, .07, .09 and .10.)

4. Any person who exports or imports wastes that are considered hazardous under U.S. national procedures to or from the countries listed in subparagraph (7)(i) of this rule for recovery must comply with 40 CFR Part 262, Subpart H. A waste is considered hazardous under U.S. national procedures if the waste meets the Federal definition of hazardous waste in 40 CFR 261.3 and is subject to either the Federal RCRA manifesting requirements at 40 CFR Part 262, Subpart B, the universal waste management standards of 40 CFR Part 273 or Rule 0400-12-01-.12, or the export requirements in the spent lead-acid battery management standards of 40 CFR Part 266, Subpart G, or part (7)(a)1 of Rule 0400-12-01-.09.

5. Any person who imports hazardous waste into the state from a foreign country must comply with the standards applicable to generators established in this rule.

6. A farmer who generates waste pesticides which are hazardous wastes and who complies with all of the requirements of Rule 0400-12-01-.02(1)(d)2(ii)(II) is not required to comply with other standards in this rule or Rules 0400-12-01-.05, .06, .07 or .10 with respect to such pesticides.

7. A person who generates a hazardous waste as defined by Rule 0400-12-01-.02 is subject to the compliance requirements and penalties prescribed in T.C.A. §§ 68-212-111 through 68-212-115 of the Act if he does not comply with the requirements of this rule.

8. An owner or operator who initiates a shipment of hazardous waste from a treatment, storage, or disposal facility must comply with the generator standards established in this rule.

(Note: The provisions of subparagraph (4)(e) are applicable to the on-site accumulation of hazardous waste by generators. Therefore, the provisions of subparagraph (4)(e) only apply to owners or operators who are shipping hazardous waste which they generated at that facility.)

9. A generator who is a conditionally - exempt small quantity generator as defined in Rule 0400-12-01-.02(1)(e) is subject to the requirements of paragraphs (2) through (6) of this rule only to the extent set forth in Rule 0400-12-01-.02(1)(e).

10. Persons responding to an explosives or munitions emergency in accordance with Rule 0400-12-01-.05(1)(b)2(vii)(I)IV or (IV) or Rule 0400-12-01-.06(1)(b)2(vii)(I)IV or (IV) and Rule 0400-12-01-.07(1)(b)5(i)(IV) or (iii) are not required to comply with the standards of this rule.

11. The laboratories owned by an eligible academic entity that chooses to be subject to the requirements of paragraph (12) of this rule are not subject to (for purposes of this part, the terms "laboratory" and "eligible academic entity" shall have the meaning as defined in paragraph (12) of this rule):

(i) The requirements of subparagraph (b) of this paragraph and part (4)(e)5 of this rule, for large quantity generators and small quantity generators, except as provided in paragraph (12) of this rule; and

(ii) The conditions of Rule 0400-12-01-.02(1)(e)2, for conditionally exempt small quantity generators, except as provided in paragraph (12) of this rule.

Note 1: The provisions of subparagraph (4)(e) of this rule are applicable to the on-site accumulation of hazardous waste by generators. Therefore, the provisions of subparagraph (4)(e) of this rule only apply to owners or operators who are shipping hazardous waste which they generated at that facility.

Note 2: A generator who treats, stores, or disposes of hazardous waste on-site must comply with the applicable standards and permit requirements set forth in Rules 0400-12-01-.05, .06, .07, .09 and .10.)

(b) Hazardous Waste Determination [40 CFR 262.11]

A person who generates a solid waste, as defined in Rule 0400-12-01-.02(1)(b), must determine if that waste is a hazardous waste using the following method:

1. He should first determine if the waste is excluded from regulation under Rule 0400-12-01-.02(1)(d).

2. He must then determine if the waste is listed as a hazardous waste in Rule 0400-12-01-.02(4).

(Note: Even if the waste is listed, the generator still has an opportunity under 40 CFR 260.22 to demonstrate to the EPA Regional Administrator that the waste from his particular facility or operation is not a hazardous waste.)

3. For purposes of compliance with Rule 0400-12-01-.10, or if the waste is not listed in Rule 0400-12-01-.02(4), the generator must then determine whether the waste is identified in Rule 0400-12-01-.02(3) by either:

(i) Testing the waste according to the methods set forth in Rule 0400-12-01-.02, or according to an equivalent method approved by the Commissioner under Rule 0400-12-01-.01(3)(b); or

(ii) Applying knowledge of the hazard characteristic of the waste in light of the materials or the processes used.

4. If the waste is determined to be hazardous, the generator must refer to Rules 0400-12-01-.02, .05, .06, .09, .10 and .12 for possible exclusions or restrictions pertaining to management of the specific waste.

5. This subparagraph does not apply to individual wastewaters streams as described in part (2)(a)2 of this rule in cases where the generator makes a hazardous waste determination on the conglomerate flow. A proper determination of the conglomerate flow must include

both an evaluation of the hazardous waste characteristics of the conglomerate flow as defined in Rule 0400-12-01-.02(3) as well as an evaluation of the facility's wastewater generating processes to confirm the presence or absence of listed hazardous wastewaters as defined in Rule 0400-12-01-.02(4) in the wastewater.

(Comment: This provision does not supercede any applicable exclusion from recordkeeping, notification, or reporting requirements for hazardous waste otherwise specified in this rule.)

(c) Installation Identification Numbers [40 CFR 262.12]

1. A generator must not treat, store, dispose of, transport, or offer for transportation, hazardous waste without having received an installation identification number from the Commissioner.

2. A generator who has not received an installation identification number may obtain one by notifying the Department pursuant to paragraph (2) of this rule. Upon receipt of the notification, the Department will assign an installation identification number to the generator.

3. A generator must not offer his hazardous waste to transporters who do not have a valid hazardous waste permit from the Department to transport hazardous waste in Tennessee (see Rule 0400-12-01-.04(2)), or to treatment, storage, or disposal facilities that have not received an installation identification number.

(2) Notification

(a) Applicability

1. Each person who generates a hazardous waste as defined in Rule 0400-12-01-.02(1)(c) must notify the Department, describing his wastes and his activities regarding them, according to subparagraphs (b) through (e) of this paragraph, except as parts 2, 3, and 4 of this subparagraph and Rules 0400-12-01-.02(1)(d)1, 2, 4, 5, and 7, (e) and (g) provide otherwise.

2. A person shall not be required to notify with regard to each individual hazardous waste stream generated which is piped along with other wastes to an on-site wastewater treatment facility or piped to a publicly owned treatment works (POTW) for treatment. However, if the conglomerate waste stream delivered by the collection system to the on-site wastewater treatment facility or to the POTW is a hazardous waste as defined in Rule 0400-12-01-.02, then the generator must notify with regard to that waste stream and file an annual report in accordance with subparagraph (5)(b) of this rule.

3. A generator shall not be required to notify with regard to a hazardous waste if he has already notified the Department with regard to that waste under emergency rules promulgated earlier under the Act.

4. A generator shall not be required to notify with regard to those hazardous wastes generated by analytical laboratory operations which are properly (i.e., in accordance with safe disposal procedures and local sewer use ordinances) discharged to the collection sewer system of a publicly-owned treatment works.

(Comment: This exclusion from notification requirements is not intended to encourage the discharge of hazardous waste to a sewer nor does it exclude the laboratory from having to comply with federal, state, or local pretreatment or sewer use requirements.)

5. Small quantity generators who generate more than 100 kilograms (220 pounds) of hazardous wastes in a calendar month must notify according to this paragraph.

(b) Existing Generators

Except as subparagraph (a) of this paragraph provides otherwise, a person who is a generator of a waste on the effective date of the regulations established under Rule 0400-12-01-.02 which identify that waste as a hazardous waste subject to the requirements of this paragraph, must notify the Department within 90 days of that date. Such notification must be submitted on generator notification forms provided by the Department. The form must be completed according to the instructions accompanying it.

(c) New Generators

Except as subparagraphs (a) and (e) of this paragraph provide otherwise, a person who becomes a generator of a waste after the effective date of regulations established under Rule 0400-12-01-.02 which identify that waste as a hazardous waste subject to the requirements of this paragraph, must notify the Department within 90 days after the date of initial generation. Such notification must be submitted on generator notification forms provided by the Department. The form must be completed according to the instructions accompanying it.

(d) Changes in Generator Data

The generator shall be responsible for maintaining an up-to-date notification file by notifying the Department in writing of significant changes in the information submitted within 30 days after such changes. (The Department shall, upon request, grant up to 60 days additional time in cases where retesting of the waste is deemed necessary.) Such changes shall include, but not be limited to, changes in ownership or operation of the generating facility or operation, or other reported administrative data.

(e) Special Cases

Except as subparagraph (a) of this paragraph provides otherwise:

1. Persons who generate hazardous wastes at more than one location in Tennessee shall file notification for each such generating location.

2. A group of generating installations located at a single site under the ownership or operation of one person may file a single notification.

3. Generators who operate on a job-shop basis shall file notification on their current operations, indicating on the form that they are a job-shop type of operation and generally describing their capabilities and operations and the types of wastes they characteristically produce.

(3) The Manifest [40 CFR 262 Subpart B]

(a) General Requirements [40 CFR 262.20]

1. (i) A generator who transports, or offers for transport, a hazardous waste for offsite treatment, storage or disposal or a treatment, storage, and disposal facility who offers for transport a rejected hazardous waste load, must prepare a Manifest (OMB Control Number 2050-0039) on EPA Form 8700-22, and, if necessary, EPA Form 8700-22A, according to the instructions included in Appendix I in subparagraph (13)(a) of this rule.

(ii) The revised Manifest form and procedures in subparagraph (2)(a) of Rule 0400-12-01-.01, subparagraph (1)(g) of Rule 0400-12-01-.02, subparagraphs (3)(a), (3)(b), (3)(h), (4)(c), (4)(e), (6)(e), and (7)(a) and Appendix I of subparagraph (13)(a) of this rule, shall become effective September 5, 2006.

2. A generator must designate on the Manifest one facility which is permitted to handle the

waste described on the Manifest.

3. A generator may also designate on the Manifest one alternate facility which is permitted to handle his waste in the event an emergency prevents delivery of the waste to the primary designated facility.

4. If the transporter is unable to deliver the hazardous waste to the designated facility or the alternate facility, the generator must either designate another facility or instruct the transporter to return the waste.

5. The requirements of this paragraph do not apply to hazardous waste produced by generators of greater than 100 kg but less than 1000 kg in a calendar month where:

   (i) The waste is reclaimed under a contractual agreement pursuant to which:

      (I) The type of waste and frequency of shipments are specified in the agreement;

      (II) The vehicle used to transport the waste to the recycling facility and to deliver regenerated material back to the generator is owned and operated by the reclaimer of the waste; and

   (ii) The generator maintains a copy of the reclamation agreement in his files for a period of at least three years after termination or expiration of the agreement.

6. The requirements of this paragraph and part (4)(c)2 of this rule do not apply to the transport of hazardous wastes on a public or private right-of-way within or along the border of contiguous property under the control of the same person, even if such contiguous property is divided by a public or private right-of-way. Notwithstanding Rule 0400-12-01-.04(1)(a)1, the generator or transporter must comply with the requirements for transporters set forth in Rule 0400-12-01-.04(4)(a) and (b) in the event of a discharge of hazardous waste on a public or private right-of-way.

(b) Manifest Tracking Numbers, Manifest Printing, and Obtaining Manifests [40 CFR 262.21]

1. The Manifest to be used must be issued by EPA or approved by the EPA Director of the Office of Solid Waste as set forth in 40 CFR 262.21.

   (Note: 40 CFR 262.21 provides that:

   (a) (1) A registrant may not print, or have printed, the manifest for use or distribution unless it has received approval from the EPA Director of the Office of Solid Waste to do so under paragraphs (c) and (e) of this section.

      (2) The approved registrant is responsible for ensuring that the organizations identified in its application are in compliance with the procedures of its approved application and the requirements of this section. The registrant is responsible for assigning manifest tracking numbers to its manifests.

   (b) A registrant must submit an initial application to the EPA Director of the Office of Solid Waste that contains the following information:

      (1) Name and mailing address of registrant;

      (2) Name, telephone number and email address of contact person;

      (3) Brief description of registrant's government or business activity;

(4) EPA identification number of the registrant, if applicable;

(5) Description of the scope of the operations that the registrant plans to undertake in printing, distributing, and using its manifests, including:

(i) A description of the printing operation. The description should include an explanation of whether the registrant intends to print its manifests in-house (i.e., using its own printing establishments) or through a separate (i.e., unaffiliated) printing company. If the registrant intends to use a separate printing company to print the manifest on its behalf, the application must identify this printing company and discuss how the registrant will oversee the company. If this includes the use of intermediaries (e.g., prime and subcontractor relationships), the role of each must be discussed. The application must provide the name and mailing address of each company. It also must provide the name and telephone number of the contact person at each company.

(ii) A description of how the registrant will ensure that its organization and unaffiliated companies, if any, comply with the requirements of this section. The application must discuss how the registrant will ensure that a unique manifest tracking number will be pre-printed on each manifest. The application must describe the internal control procedures to be followed by the registrant and unaffiliated companies to ensure that numbers are tightly controlled and remain unique. In particular, the application must describe how the registrant will assign manifest tracking numbers to its manifests. If computer systems or other infrastructure will be used to maintain, track, or assign numbers, these should be indicated. The application must also indicate how the printer will pre-print a unique number on each form (e.g., crash or press numbering). The application also must explain the other quality procedures to be followed by each establishment and printing company to ensure that all required print specifications are consistently achieved and that printing violations are identified and corrected at the earliest practicable time.

(iii) An indication of whether the registrant intends to use the manifests for its own business operations or to distribute the manifests to a separate company or to the general public (e.g., for purchase).

(6) A brief description of the qualifications of the company that will print the manifest. The registrant may use readily available information to do so (e.g., corporate brochures, product samples, customer references, documentation of ISO certification), so long as such information pertains to the establishments or company being proposed to print the manifest.

(7) Proposed unique three-letter manifest tracking number suffix. If the registrant is approved to print the manifest, the registrant must use this suffix to pre-print a unique manifest tracking number on each manifest.

(8) A signed certification by a duly authorized employee of the registrant that the organizations and companies in its application will comply with the procedures of its approved application and the requirements of this Section and that it will notify the EPA Director of the Office of Solid Waste of any duplicated manifest tracking numbers on manifests that

have been used or distributed to other parties as soon as this becomes known.

(c) EPA will review the application submitted under paragraph (b) of this section and either approve it or request additional information or modification before approving it.

(d) (1) Upon EPA approval of the application under paragraph (c) of this section, EPA will provide the registrant an electronic file of the manifest, continuation sheet, and manifest instructions and ask the registrant to submit three fully assembled manifests and continuation sheet samples, except as noted in paragraph (d)(3) of this section. The registrant's samples must meet all of the specifications in paragraph (f) of this section and be printed by the company that will print the manifest as identified in the application approved under paragraph (c) of this section.

(2) The registrant must submit a description of the manifest samples as follows:

(i) Paper type (i.e., manufacturer and grade of the manifest paper);

(ii) Paper weight of each copy;

(iii) Ink color of the manifest's instructions. If screening of the ink was used, the registrant must indicate the extent of the screening; and

(iv) Method of binding the copies.

(3) The registrant need not submit samples of the continuation sheet if it will print its continuation sheet using the same paper type, paper weight of each copy, ink color of the instructions, and binding method as its manifest form samples.

(e) EPA will evaluate the forms and either approve the registrant to print them as proposed or request additional information or modification to them before approval. EPA will notify the registrant of its decision by mail. The registrant cannot use or distribute its forms until EPA approves them. An approved registrant must print the manifest and continuation sheet according to its application approved under paragraph (c) of this section and the manifest specifications in paragraph (f) of this section. It also must print the forms according to the paper type, paper weight, ink color of the manifest instructions and binding method of its approved forms.

(f) Paper manifests and continuation sheets must be printed according to the following specifications:

(1) The manifest and continuation sheet must be printed with the exact format and appearance as EPA Forms 8700–22 and 8700–22A, respectively. However, information required to complete the manifest may be pre-printed on the manifest form.

(2) A unique manifest tracking number assigned in accordance with a numbering system approved by EPA must be pre-printed in Item 4 of the manifest. The tracking number must consist of a unique three-letter suffix following nine digits.

(3) The manifest and continuation sheet must be printed on 8 1/2 x 11-inch white paper, excluding common stubs (e.g., top- or side-bound stubs).

The paper must be durable enough to withstand normal use.

(4) The manifest and continuation sheet must be printed in black ink that can be legibly photocopied, scanned, and faxed, except that the marginal words indicating copy distribution must be in red ink.

(5) The manifest and continuation sheet must be printed as six-copy forms. Copy-to-copy registration must be exact within 1/32nd of an inch. Handwritten and typed impressions on the form must be legible on all six copies. Copies must be bound together by one or more common stubs that reasonably ensure that they will not become detached inadvertently during normal use.

(6) Each copy of the manifest and continuation sheet must indicate how the copy must be distributed, as follows:

(i) Page 1 (top copy): "Designated facility to destination State (if required)".

(ii) Page 2: "Designated facility to generator State (if required)".

(iii) Page 3: "Designated facility to generator".

(iv) Page 4: "Designated facility's copy".

(v) Page 5: "Transporter's copy".

(vi) Page 6 (bottom copy): "Generator's initial copy".

(7) The instructions in the appendix to 40 CFR part 262 must appear legibly on the back of the copies of the manifest and continuation sheet as provided in this paragraph (f). The instructions must not be visible through the front of the copies when photocopied or faxed.

(i) Manifest Form 8700–22.

(A) The "Instructions for Generators" on Copy 6;

(B) The "Instructions for International Shipment Block" and "Instructions for Transporters" on Copy 5; and

(C) The "Instructions for Treatment, Storage, and Disposal Facilities" on Copy 4.

(ii) Manifest Form 8700–22A.

(A) The "Instructions for Generators" on Copy 6;

(B) The "Instructions for Transporters" on Copy 5; and

(C) The "Instructions for Treatment, Storage, and Disposal Facilities" on Copy 4.

(g) (1) A generator may use manifests printed by any source so long as the source of the printed form has received approval from EPA to print the manifest under paragraphs (c) and (e) of this section. A registered source may be a:

(i) State agency;

(ii) Commercial printer;

(iii) Hazardous waste generator, transporter or TSDF; or

(iv) Hazardous waste broker or other preparer who prepares or arranges shipments of hazardous waste for transportation.

(2) A generator must determine whether the generator state or the consignment state for a shipment regulates any additional wastes (beyond those regulated Federally) as hazardous wastes under these states' authorized programs. Generators also must determine whether the consignment state or generator state requires the generator to submit any copies of the manifest to these states. In cases where the generator must supply copies to either the generator's state or the consignment state, the generator is responsible for supplying legible photocopies of the manifest to these states.

(h) (1) If an approved registrant would like to update any of the information provided in its application approved under paragraph (c) of this section (e.g., to update a company phone number or name of contact person), the registrant must revise the application and submit it to the EPA Director of the Office of Solid Waste, along with an indication or explanation of the update, as soon as practicable after the change occurs. The Agency either will approve or deny the revision. If the Agency denies the revision, it will explain the reasons for the denial, and it will contact the registrant and request further modification before approval.

(2) If the registrant would like a new tracking number suffix, the registrant must submit a proposed suffix to the EPA Director of the Office of Solid Waste, along with the reason for requesting it. The Agency will either approve the suffix or deny the suffix and provide an explanation why it is not acceptable.

(3) If a registrant would like to change the paper type, paper weight, ink color of the manifest instructions, or binding method of its manifest or continuation sheet subsequent to approval under paragraph (e) of this section, then the registrant must submit three samples of the revised form for EPA review and approval. If the approved registrant would like to use a new printer, the registrant must submit three manifest samples printed by the new printer, along with a brief description of the printer's qualifications to print the manifest. EPA will evaluate the manifests and either approve the registrant to print the forms as proposed or request additional information or modification to them before approval. EPA will notify the registrant of its decision by mail. The registrant cannot use or distribute its revised forms until EPA approves them.

(i) If, subsequent to its approval under paragraph (e) of this section, a registrant typesets its manifest or continuation sheet instead of using the electronic file of the forms provided by EPA, it must submit three samples of the manifest or continuation sheet to the registry for approval. EPA will evaluate the manifests or continuation sheets and either approve the registrant to print them as proposed or request additional information or modification to them before approval. EPA will notify the registrant of its decision by mail. The registrant cannot use or distribute its typeset forms until EPA approves them.

(j) EPA may exempt a registrant from the requirement to submit form samples under paragraph (d) or (h)(3) of this section if the Agency is persuaded that a

separate review of the registrant's forms would serve little purpose in informing an approval decision (e.g., a registrant certifies that it will print the manifest using the same paper type, paper weight, ink color of the instructions and binding method of the form samples approved for some other registrant). A registrant may request an exemption from EPA by indicating why an exemption is warranted.

(k) An approved registrant must notify EPA by phone or email as soon as it becomes aware that it has duplicated tracking numbers on any manifests that have been used or distributed to other parties.

(l) If, subsequent to approval of a registrant under paragraph (e) of this section, EPA becomes aware that the approved paper type, paper weight, ink color of the instructions, or binding method of the registrant's form is unsatisfactory, EPA will contact the registrant and require modifications to the form.

(m) (1) EPA may suspend and, if necessary, revoke printing privileges if we find that the registrant:

(i) Has used or distributed forms that deviate from its approved form samples in regard to paper weight, paper type, ink color of the instructions, or binding method; or

(ii) Exhibits a continuing pattern of behavior in using or distributing manifests that contain duplicate Manifest Tracking Numbers.

(2) EPA will send a warning letter to the registrant that specifies the date by which it must come into compliance with the requirements. If the registrant does not come in compliance by the specified date, EPA will send a second letter notifying the registrant that EPA has suspended or revoked its printing privileges. An approved registrant must provide information on its printing activities to EPA if requested.)

(c) Number of Copies [40 CFR 262.22]

The manifest consists of at least the number of copies which will provide the generator, each transporter, and the owner or operator of the designated facility with one copy each for their records and another copy to be returned to the generator.

(d) Use of the Manifest [40 CFR 262.23]

1. The generator shall:

(i) Ensure, before signing the manifest that, in accordance with subparagraph (13)(a) of this rule, under the title Appendix I "Generators", the Transporter Company name (item 6) and the U.S. EPA Identification Number are the same as the transporter company name and the U.S. EPA Identification Number on the Tennessee Hazardous Waste Transporter Permit (copies are permitted) accompanying the motor vehicle transporter; and

(ii) Sign the manifest certification by hand; and

(iii) Obtain the handwritten signature of the initial transporter (Transporter 1) and date of acceptance on the manifest; and

(iv) Retain one copy, in accordance with part (5)(a)1 of this rule.

2. The generator must give the transporter the remaining copies of the manifest.

3. For shipments of hazardous waste within the United States solely by water (bulk shipments only), the generator must send three copies of the manifest dated and signed in accordance with this subparagraph to the owner or operator of the designated facility or the last water (bulk shipment) transporter to handle the waste in the United States if exported by water. Copies of the manifest are not required for each transporter.

4. For rail shipments of hazardous waste within the United States which originate at the site of generation, the generator must send at least three copies of the manifest dated and signed in accordance with this subparagraph to:

   (i) The next non-rail transporter, if any; or

   (ii) The designated facility if transported solely by rail; or

   (iii) The last rail transporter to handle the waste in the United States if exported by rail.

5. For shipments of hazardous waste to a designated facility in an authorized State which has not yet obtained authorization to regulate that particular waste as hazardous, the generator must assure that the designated facility agrees to sign and return the manifest to the generator, and that any out-of-state transporter signs and forwards the manifest to the designated facility.

6. For rejected shipments of hazardous waste or container residues contained in non-empty containers that are returned to the generator by the designated facility (following the procedures of Rule 0400-12-01-.05(5)(c)6 or Rule 0400-12-01-.06(5)(c)6), the generator must:

   (i) Sign either:

      (I) Item 20 of the new manifest if a new manifest is used for the returned shipment; or

      (II) Item 18c of the original manifest if the original manifest is used for the returned shipment;

   (ii) Provide the transporter a copy of the manifest;

   (iii) Within thirty (30) days of delivery of the rejected shipment or container residues contained in non-empty containers, send a copy of the manifest to the designated facility that returned the shipment to the generator; and

   (iv) Retain at the generator's site a copy of each manifest for at least five (5) years from the date of delivery.

(Note: See Rule 0400-12-01-.04(3)(a)5 and 6 for special provisions for rail or water (bulk shipment) transporters.)

(e) (RESERVED) [40 CFR 262.24]

(f) (RESERVED) [40 CFR 262.25]

(g) (RESERVED) [40 CFR 262.26]

(h) Waste Minimization Certification [40 CFR 262.27]

A generator who initiates a shipment of hazardous waste must certify to one of the following statements in Item 15 of the Uniform Hazardous Waste Manifest:

1. "I am a large quantity generator. I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment;" or

2. "I am a small quantity generator. I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford."

(4) Pre-transport Requirements [40 CFR 262 Subpart C]

(a) Packaging [40 CFR 262.30]

Before transporting hazardous waste or offering hazardous waste for transportation off-site, a generator must package the waste in accordance with the applicable DOT regulations on packaging under 49 CFR Parts 173, 178, and 179.

(b) Labeling [40 CFR 262.31]

Before transporting or offering hazardous waste for transportation off-site, a generator must label each package in accordance with the applicable DOT regulations on hazardous materials under 49 CFR Part 172.

(c) Marking

1. Before transporting or offering hazardous waste for transportation off-site, a generator must mark each package of hazardous waste in accordance with the applicable DOT regulations on hazardous materials under 49 CFR Part 172.

2. Before transporting hazardous waste or offering hazardous waste for transportation off-site, a generator must mark each container of 119 gallons or less used in such transportation with the following words and information in accordance with the requirements of 49 CFR 172.304:

HAZARDOUS WASTE—Federal Law Prohibits Improper Disposal. If found, contact the nearest police or public safety authority or the U. S. Environmental Protection Agency.

Generator's Name and Address _____

Generator's EPA Identification Number _____

Manifest Tracking Number _____

The generator shall add as indicated his name and address and the number assigned to the manifest accompanying this container. The marking required in this subparagraph must be (1) durable, in English, and printed on or affixed to the surface of a package or on a label, tag, or sign; (2) displayed on a background of sharply contrasting color; (3) unobscured by labels or attachments; and (4) located away from any other marking (such as advertising) that could substantially reduce its effectiveness.

(d) Placarding [40 CFR 262.33]

Before transporting hazardous waste or offering hazardous waste for transportation off-site, a generator must placard or offer the initial transporter the appropriate placards according to Department of Transportation regulations for hazardous materials under 49 CFR 172 Subpart F.

(e) Accumulation Time [40 CFR 262.34]

1. For purposes of this subparagraph, except as used in part 5, the term "accumulate" shall refer to both the storage and treatment of hazardous wastes generated on-site. For purposes of part 5 of this subparagraph, the term "accumulate" shall refer only to collecting or gathering together.

2. Except as provided in parts 6, 7 and 8 of this subparagraph, a generator may accumulate hazardous waste on-site for 90 days or less without a permit or without having interim status, provided that:

(i) The waste is placed:

(I) In containers and the generator complies with the applicable requirements of Rules 0400-12-01-.05(9), (27), (28), and (29), and/or

(II) In tanks and the generator complies with the applicable requirements of Rules 0400-12-01-.05(10), (27), (28), and (29), except part (10)(h)3 and subparagraph (10)(k) of Rule 0400-12-01-.05; and/or

(III) On drip pads and the generator complies with Rule 0400-12-01-.05(23) and maintains the following records at the facility:

I. A description of procedures that will be followed to ensure that all wastes are removed from the drip pad and associated collection system at least once every 90 days; and

II. Documentation of each waste removal, including the quantity of waste removed from the drip pad and the sump or collection system and the date and time of removal; and/or

(IV) In containment buildings and the generator complies with Rule 0400-12-01-.05(30), has placed its professional engineer certification that the building complies with the design standards specified in Rule 0400-12-01-.05(30)(b) in the facility's operating record no later than 60 days after the date of initial operation of the unit. After February 18, 1993, PE certification will be required prior to operation of the unit. The owner or operator shall maintain the following records at the facility:

I. A written description of procedures to ensure that each waste volume remains in the unit for no more than 90 days, a written description of the waste generation and management practices for the facility showing that they are consistent with respecting the 90 day limit, and documentation that the procedures are complied with; or

II. Documentation that the unit is emptied at least once every 90 days.

In addition, such a generator is exempt from all the requirements in paragraphs (7) and (8) of Rule 0400-12-01-.05, except for subparagraphs (b) and (e) of paragraph (7).

(ii) The date upon which each period of accumulation begins is clearly marked and visible for inspection on each container;

(iii) While being accumulated on-site, each container and tank is labeled or marked clearly with the words, "Hazardous Waste";

(iv) The generator complies with the requirements for owners or operators in parts (2)(f)1, 3, and 4, subparagraph (2)(g) and paragraphs (3) and (4) of Rule 0400-

12-01-.05 and with all applicable requirements under Rule 0400-12-01-.10; and

(v) Where tanks are used, the generator maintains adequate records to verify that accumulation time is less than 90 days.

3. A generator of 1000 kilograms or greater of hazardous waste in a calendar month, or greater than 1 kilogram of acute hazardous waste listed in subparagraph (4)(b) or part (4)(d)5 of Rule 0400-12-01-.02 in a calendar month, who accumulates hazardous waste or acute hazardous waste for more than 90 days is an operator of a storage facility and is subject to the requirements of Rule 0400-12-01-.05 and 0400-12-01-.06 and the permit requirements of Rule 0400-12-01-.07 unless he has been granted an extension to the 90-day period. Such extension may be granted by the Department if hazardous wastes must remain on-site for more than 90 days due to unforeseen, temporary, and uncontrollable circumstances. An extension of up to 30 days may be granted at the discretion of the Commissioner on a case-by-case basis.

4. A generator who removes hazardous waste from a product or new material storage tank, a product or raw material transport vehicle or vessel, a manufacturing process unit or an associated non-waste-treatment manufacturing unit directly into or onto a transport vehicle for immediate transportation to a treatment, storage, or disposal facility shall (for such process) not be considered to be "accumulating" such waste for purposes of this subparagraph.

5. (i) A generator may accumulate as much as 55 gallons of hazardous waste or one quart of acute hazardous waste listed in Rule 0400-12-01-.02(4)(b) or (4)(d)5, in containers at or near any point of generation where wastes initially accumulate, which is under the control of the operator of the process generating the waste, without a permit or interim status and without complying with part 2 of this subparagraph provided he:

(I) Complies with Rule 0400-12-01-.05(9)(b), (c), and (d)1; and

(II) Marks his containers either with the words "Hazardous Waste" or with other words that identify the contents of the containers.

(ii) A generator who accumulates either hazardous waste or acute hazardous waste listed in Rule 0400-12-01-.02(4)(b) or (4)(d)5 in excess of the amount established in subpart (i) of this part at or near any point of generation must, with respect to that amount of excess waste, comply within three days with part 2 of this subparagraph or other applicable provisions of this Chapter. During the three day period the generator must continue to comply with items (i)(I) and (II) of this part. The generator must mark the container holding the excess accumulation of hazardous waste with the date the excess amount began accumulating.

6. A small quantity generator who generates greater than 100 kilograms but less than 1000 kilograms of hazardous waste in a calendar month may accumulate hazardous waste on-site for 180 days or less without a permit or without having interim status provided that:

(i) The quantity of hazardous waste accumulated on-site never exceeds 6000 kilograms;

(ii) The generator complies with the requirements of Rule 0400-12-01-.05(9), except for Rules 0400-12-01-.05(9)(g) and .05(9)(i);

(iii) The generator complies with the requirements of Rule 0400-12-01-.05(10)(I);

(iv) (I) Where containers are used, the date upon which each period of accumulation begins is clearly marked and visible for inspection on each container; or

(II) Where tanks are used, the generator maintains adequate records to verify that accumulation time is less than the allowed period;

(v) While being accumulated on-site, each container and tank is labeled or marked clearly with the words "Hazardous Waste";

(vi) The generator complies with the requirements for owners or operators in parts (2)(f)1, 3, and 4, and paragraph (3) of Rule 0400-12-01-.05, and with all applicable requirements under Rule 0400-12-01-.10; and

(vii) The generator complies with the following requirements:

(I) At all times there must be at least one employee either on the premises or on call (i.e., available to respond to an emergency by reaching the facility within a short period of time) with the responsibility for coordinating all emergency response measures specified in item (IV) of this subpart. This employee is the emergency coordinator.

(II) The generator must post the following information next to the telephone:

I. The name and telephone number of the emergency coordinator;

II. The location of fire extinguishers and spill control material, and, if present, the fire alarm; and

III. The telephone number of the fire department, unless the facility has a direct alarm.

(III) The generator must ensure that all employees are thoroughly familiar with proper waste handling and emergency procedures, relevant to their responsibilities during normal facility operations and emergencies.

(IV) The emergency coordinator or his designee must respond to any emergencies that arise. The applicable responses are as follows:

I. In the event of a fire, call the fire department or attempt to extinguish it using a fire extinguisher;

II. In the event of a spill, contain the flow of hazardous waste to the extent possible, and as soon as is practicable, clean up the hazardous waste and any contaminated materials or soil; and

III. In the event of a fire, explosion, or other release which could threaten human health outside the facility, or when the generator has knowledge that a spill has reached surface water, the generator must immediately notify the Tennessee Emergency Management Agency (using their 24-hour toll-free number 800/262-3300) and/or the National Response Center (using their 24-hour toll-free number 800/424-8802). The report must include the following information:

A. Name, address, and installation identification number of the generator;

B. Date, time, and type of incident (e.g., spill or fire);

C. Quantity and type of hazardous waste involved in the incident;

D. Extent of injuries, if any; and

E. Estimated quantity and disposition of recovered materials, if any.

7. A generator who generates greater than 100 kilograms but less than 1000 kilograms of hazardous waste in a calendar month and who must transport his waste, or offer his waste for transportation, over a distance of 200 miles or more for off-site treatment, storage, or disposal may accumulate hazardous waste on-site for 270 days or less without a permit or without having interim status provided that he complies with the requirements of part 6 of this subparagraph.

8. A small quantity generator who generates greater than 100 kilograms but less than 1000 kilograms of hazardous waste in a calendar month and who accumulates hazardous waste in quantities exceeding 6000 kg or accumulates hazardous waste for more than 180 days (or for more than 270 days if he must transport his waste, or offer his waste for transportation, over a distance of 200 miles or more) is an operator of a storage facility and is subject to the requirements of Rule 0400-12-01-.05, 0400-12-01-.06, and 0400-12-01-.07 unless he has been granted an extension to the 180-day (or 270-day if applicable) period. Such extension may be granted by the Department if hazardous waste must remain on-site for longer than 180 days (or 270 days if applicable) due to unforeseen, temporary, and uncontrollable circumstances. An extension of up to 30 days may be granted at the discretion of the Commissioner on a case-by-case basis.

9. A generator who generates 1,000 kilograms or greater of hazardous waste per calendar month, who also generates wastewater treatment sludges from electroplating operations that meet the listing description for the Hazardous Waste Code F006, may accumulate F006 waste on-site for more than 90 days, but not more than 180 days, without a permit or without having interim status provided that:

(i) The generator has implemented pollution practices that reduce the amount of any hazardous substances, pollutants or contaminants entering F006 or otherwise released to the environment prior to its recycling;

(ii) The F006 waste is legitimately recycled through metals recovery;

(iii) No more than 20,000 kilograms of F006 waste is accumulated on-site at any one time; and

(iv) The F006 waste is managed in accordance with the following:

(I) The F006 waste is placed:

I. In containers and the generator complies with the applicable Requirements of paragraphs (9), (27), (28), and (29) of Rule 0400-12-01-.05; and/or

II. In tanks and the generator complies with the applicable requirements of paragraphs (10), (27), (28), and (29) of Rule 0400-12-01-.05, except part (10)(h)3 and subparagraph (10)(k) of Rule 0400-12-01-.05; and/or

III. In containment buildings and the generator complies with paragraph (30) of Rule 0400-12-01-.05, and has placed its professional engineer certification that the building complies with the design standards specified in subparagraph (30)(b) of Rule 0400-12-01-.05 in the facility's operating record prior to operation of the unit. The owner or operator must maintain the following

records at the facility:

A. A written description of procedures to ensure that the F006 waste remains in the unit for no more than 180 days, a written description of the waste generation and management practices for the facility showing than they are consistent with the 180-day limit, and documentation that the generator is complying with the procedures; or

B. Documentation that the unit is emptied at least once every 180 days.

(II) In addition, such a generator is exempt from all the requirements in paragraphs (7) and (8) of Rule 0400-12-01-.05, except for subparagraphs (7)(b) and (7)(e) of Rule 0400-12-01-.05.

(III) The date upon which each period of accumulation begins is clearly marked and visible for inspection of each container.

(IV) While being accumulated on-site, each container and tank is labeled or marked clearly with the words, "Hazardous Waste."

(V) The generator complies with the requirements for owners or operators in paragraphs (3) and (4) of Rule 0400-12-01-.05, with subparagraph (2)(g) of Rule 0400-12-01-.05, and with subpart (1)(g)1(v) of Rule 0400-12-01-.10.

10. A generator who generates 1,000 kilograms or greater of hazardous waste per calendar month who also generates wastewater treatment sludges from electroplating operations that meet the listing description for the Hazardous Waste Code F006, and who must transport this waste, or offer this waste for transportation, over a distance of 200 miles or more for off-site metals recovery, may accumulate F006 waste on-site for more than 90 days, but not more than 270 days, without a permit or without having interim status if the generator complies with the requirements of subparts (i) through (iv) of part 9 of this subparagraph.

11. A generator accumulating F006 in accordance with parts 9 and 10 of this subparagraph who accumulates F006 waste on-site for more than 180 days (or more than 270 days if the generator must transport this waste, or offer this waste for transportation, over a distance of 200 miles or more), or who accumulates more than 20,000 kilograms of F006 waste on-site is an operator of a storage facility and is subject to the requirements of Rules 0400-12-01-.05 and 0400-12-01-.06 and the permit requirements of Rule 0400-12-01-.07 unless the generator has been granted an extension to the 180-day (or 270-day if applicable) period or an exception to the 20,000 kilogram accumulation limit. Such extension and exceptions may be granted by the Division if F006 waste must remain on-site for longer than 180 days (or 270 days if applicable) or if more than 20,000 kilograms of F006 waste must remain on-site due to unforeseen, temporary, and uncontrollable circumstances. An extension of up to 30 days or an exception to the accumulation limit may be granted at the discretion of the Director of the Division of Solid Waste Management on a case-by-case basis.

12. Notwithstanding the provisions of parts 1, 4, 5, and 6 of this subparagraph, if a generator accumulates wastes in a unit that is otherwise fully subject to applicable requirements of Rules 0400-12-01-.05 and/or 0400-12-01-.06, then he must manage such accumulated wastes fully in accordance with those applicable requirements of Rules 0400-12-01-.05 and/or 0400-12-01-.06.

13. Reserved

14. Reserved

15. Reserved

16. A generator who sends a shipment of hazardous waste to a designated facility with the understanding that the designated facility can accept and manage the waste and later receives that shipment back as a rejected load or residue in accordance with the manifest discrepancy provisions of Rule 0400-12-01-.06(5)(c) or Rule 0400-12-01-.05(5)(c) may accumulate the returned waste on-site in accordance with parts 2 and 3 or 6, 7, and 8 of this subparagraph, depending on the amount of hazardous waste on-site in that calendar month. Upon receipt of the returned shipment, the generator must:

    (i) Sign Item 18c of the manifest, if the transporter returned the shipment using the original manifest; or

    (ii) Sign Item 20 of the manifest, if the transporter returned the shipment using a new manifest.

(5) Recordkeeping and Reporting

(a) Recordkeeping [40 CFR 262.40]

1. A generator must keep a copy of each manifest signed in accordance with part (3)(d)1 of this rule for three years or until he receives a signed copy from the designated facility which received the waste. This signed copy must be retained as a record for at least three years from the date the waste was accepted by the initial transporter.

2. A generator must keep a copy of each Annual Report and Exception Report for a period of at least three years from the due date of the report (March 1).

3. A generator must keep records as necessary to demonstrate compliance with subparagraph (1)(b) of this rule - to include any test results, waste analyses, or other determinations made in accordance with that subparagraph - for at least three years from the date that the waste was last sent to on-site or off-site hazardous or nonhazardous waste treatment, storage, or disposal facilities. Such records must document the basis for the hazardous waste determination, including those determinations based on the generator's knowledge of materials and processes utilized rather than on laboratory analyses. Pursuant to Rule 0400-12-01-.03(2)(a)2, this requirement does not apply to individual wastewater streams in cases where the hazardous waste determination is made on the conglomerate waste stream.

4. The periods of retention referred to in this subparagraph are extended automatically during the course of any unresolved enforcement action regarding the regulated activity or as requested by the Commissioner or Board.

(b) Annual Reporting [40 CFR 262.41]

1. A generator must submit an Annual Report to the Department by March 1 for the preceding calendar year. Such report must be submitted on forms provided by the Department, and the form must be completed according to the instructions accompanying it. The report must include, but shall not necessarily be limited to, the following information:

    (i) The year covered by the report.

    (ii) The name, address, telephone number, and Department-assigned installation identification number of the generator.

    (iii) For each hazardous waste stream (i.e., each separate waste but not necessarily

each batch or shipment of such waste) generated by the generator during the reporting year, except for those wastes identified in part 4 of this subparagraph, the following information:

(I) A descriptive name of the waste and the appropriate waste code(s) from Rule 0400-12-01-.02;

(II) The methods by which the waste was managed on-site by the generator during the reporting year and the total quantities managed by each method; and

(III) For those wastes managed off-site during the reporting year:

I. The Installation Identification Number of each treatment, storage, or disposal facility, or the name and address of other places, to which the waste was sent;

II. The total quantity of the waste sent to each place and the method(s) by which it was to be managed; and

III. The Installation Identification Number(s) of those transporters whose services were used during the reporting year.

(iv) A summary of the efforts undertaken during the year to reduce volume and toxicity as required on the Tennessee annual report forms.

(v) A summary of the changes in volume and toxicity of waste actually achieved during the year as required on the Tennessee annual report forms.

(vi) The certification signed by the generator or authorized representative.

2. A generator must also submit the annual report established in part 1 of this subparagraph prior to those events, such as change of ownership or cessation of business, which would make him no longer subject to the annual reporting requirement. In such case, the report would cover the period of time that has elapsed since December 31 of the preceding calendar year.

3. Any generator who treats, stores, or disposes of hazardous waste on-site must submit an Annual Report covering those wastes in accordance with the provisions of Rules 0400-12-01-.05, .06, .07 and .09. Reporting for exports of hazardous waste is not required on the Annual Report form. A separate annual report requirement is set forth at subparagraph (6)(g) of this rule.

4. A generator shall not be required to annually report on those hazardous wastes generated by analytical laboratory operations which are properly (i.e., in accordance with safe disposal practices and local sewer use ordinances) discharged to the collection sewer system of a publicly-owned treatment works.

(Comment: This exclusion from annual reporting requirements is not intended to encourage the discharge of hazardous waste to a sewer nor does it exclude the laboratory from having to comply with federal, state, or local pretreatment or sewer use requirements.)

(c) Exception Reporting [40 CFR 262.42]

1. (i) A generator of 1000 kilograms or greater of hazardous waste in a calendar month, or greater than 1 kg of acute hazardous waste listed in Rule 0400-12-01-.02(4)(b) or Rule 0400-12-01-.02(4)(d)5 in a calendar month, who does not receive a copy of the manifest with the handwritten signature of the owner or

operator of the designated facility within 35 days of the date the waste was accepted by the initial transporter must contact the transporter and/or the owner or operator of the designated facility to determine the status of the hazardous waste.

(ii) A generator of 1000 kilograms or greater of hazardous waste in a calendar month, or greater than 1 kg of acute hazardous waste listed in Rule 0400-12-01-.02(4)(b) or Rule 0400-12-01-.02(4)(d)5 of this rule in a calendar month, must submit an Exception Report to the EPA Regional Administrator for the Region in which the generator is located if he has not received a copy of the manifest with the handwritten signature of the owner or operator of the designed facility within 45 days of the date the waste was accepted by the initial transporter. The Exception Report must include:

(I) A legible copy of the manifest for which the generator does not have confirmation of delivery.

(II) A cover letter signed by the generator or his authorized representative explaining the efforts taken to locate the hazardous waste and the results of those efforts.

(iii) The Exception Report required by subpart (ii) of this part must be submitted to the Commissioner within 5 days after the 45-day period expires.

2. A generator of greater than 100 kilograms but less than 1000 kilograms of hazardous waste in a calendar month who does not receive a copy of the manifest with the handwritten signature of the owner or operator of the designated facility within 60 days of the date the waste was accepted by the initial transporter must submit a legible copy of the manifest, with some indication that the generator has not received confirmation of delivery, to the Commissioner.

(Note: The submission need only be a handwritten or typed note on the manifest itself, or on an attached sheet of paper, stating that the return copy was not received.)

3. For rejected shipments of hazardous waste or container residues contained in non-empty containers that are forwarded to an alternate facility by a designated facility using a new manifest (following the procedure of Rule 0400-12-01-.05(5)(c)5(i) through (vi) or Rule 0400-12-01-.06(5)(c)5(i) through (vi), the generator must comply with the requirements of Part 1 or 2 of this subparagraph, as applicable, for the shipment forwarding the material from the designated facility to the alternate facility instead of for the shipment from the generator to the designated facility. For purposes of Part 1 or 2 of this subparagraph for a shipment forwarding such waste to an alternate facility by a designated facility:

(i) The copy of the manifest received by the generator must have the handwritten signature of the owner or operator of the alternate facility in place of the signature of the owner or operator of the designated facility; and

(ii) The 35/45/60-day time frames begin the date the waste was accepted by the initial transporter forwarding the hazardous waste shipment from the designated facility to the alternate facility.

(d) Special Requirements for Generators of Between 100 and 1000 kg/month [40 CFR 262.44]

A generator of greater than 100 kilograms but less than 1000 kilograms of hazardous waste in a calendar month is exempt from the requirement under part (a)2 of this paragraph to maintain copies of Exception Reports and the requirements of part (c)1 of this paragraph.

(e) Additional Reporting [40 CFR 262.43]

The Commissioner, as he deems necessary under T.C.A. §68-212-107 of the Hazardous Waste Management Act, may require generators to furnish additional reports concerning the quantities and disposition of wastes identified or listed in Rule 0400-12-01-.02.

(6) Hazardous Waste Reduction Plan

(a) Applicability

1. All generators of hazardous waste, except those generators who are conditionally exempt small quantity generators, as determined by subparagraph (1)(e) of Rule 0400-12-01-.02, for all twelve months of the calendar year, shall complete a hazardous waste reduction plan in accordance with the requirements of subparagraph (b) of this paragraph. After completion of a plan, the generator shall maintain a current copy of the plan at the generating facility. The plan and the annual progress reports under subparagraph (c) of this paragraph shall be made available, upon request, to a representative of the department at any reasonable time. The department may make use of the information as it deems necessary to carry out its duties under this rule.

2. For the purposes of this paragraph, a generator shall permit the commissioner to inspect the hazardous waste reduction plan. The generator shall permit any officer, employee or representative of the department at all reasonable times to have access to the plan. The generator shall furnish a copy of the plan upon request to the commissioner.

3. Large and small quantity generators shall have three years from the date they first became a large or small quantity generator, to complete their waste reduction plan. Only large and small quantity hazardous waste generators are required to have a hazardous waste reduction plan.

4. Hazardous waste streams resulting from one-time generation events, such as accidental spills, equipment modification, plant closure, etc., are not subject to the requirements of this paragraph.

(b) Contents of Plan

1. A hazardous waste reduction plan shall include, at a minimum, the following:

(i) A dated and signed written policy articulating management support for the generator's hazardous waste reduction plan;

(ii) The scope and objectives of the plan, including the evaluation of technologies, procedures and personnel training programs to ensure that unnecessary waste is not generated and to encourage hazardous waste reduction. Specific goals shall be set for hazardous waste reduction, as described in subparagraphs (b) through (d) of the paragraph;

(iii) A description of technically and economically practical hazardous waste reduction options to be implemented and planned schedule for implementation. These options shall be based on an internal analysis of hazardous waste streams conducted to review individual processes or facilities and other activities where waste may be generated and identify opportunities to reduce or eliminate waste generation. Such analyses shall evaluate data on the types, amount and hazardous constituents of waste generated, where and why that waste was generated within the production process or other operations, and potential hazardous waste reduction and recycling techniques applicable to those wastes;

(iv) A description of the hazardous waste accounting systems that identify waste management costs and factor in liability, compliance and oversight costs to the extent feasible;

(v) A description of the employee awareness and training programs designed to involve employees to the maximum extent feasible in hazardous waste reduction planning and implementation; and

(vi) A description of how the plan has been or will be incorporated into management practices and procedures so as to ensure an ongoing effort.

2. As part of each plan developed under this subparagraph, a generator shall establish specific performance goals for the source reduction of each hazardous waste stream.

3. The specific performance goals established under this subparagraph shall be quantitative goals, expressed in numeric terms. Whenever possible, the units of measurement should be in pounds (or tons) of waste generated per standard unit of production, as defined by the generator. If the establishment of numeric performance goals is not practical, the performance goals shall include a clearly stated list of actions designed to lead to the establishment of numeric goals as soon as practical.

4. As part of each plan developed under this subparagraph, each generator shall explain the rationale for each performance goal. Acts of God or other unforeseeable events beyond the control of the generator do not have to be considered in setting goals. The rationale for a particular performance goal shall address any impediments to hazardous waste reduction, including, but not limited to, the following:

(i) The availability of technically practical hazardous waste reduction methods, including any anticipated changes in the future;

(ii) Previously implemented reductions of hazardous waste;

(iii) The economic practicability of available hazardous waste reduction methods, including any anticipated changes in the future. Examples of situations where hazardous waste reduction may not be economically practical include, but are not limited to:

(I) For valid reasons of prioritization, a particular company has chosen first to address other more serious hazardous waste reduction concerns;

(II) Necessary steps to reduce hazardous waste are likely to have significant adverse impacts on product quality; or

(III) Legal or contractual obligations interfere with the necessary steps that would lead to hazardous waste reduction.

5. A generator required to complete a hazardous waste reduction plan under subparagraph (a) of this paragraph may include as a preface to its initial plan:

(i) An explanation and documentation regarding hazardous waste reduction efforts completed or in progress before the first reporting date; and

(ii) An explanation and documentation regarding impediments to hazardous waste reduction specific to the individual facility.

(c) Annual Progress Report

1. All generators shall annually review their waste reduction plan and complete a hazardous waste reduction progress report which shall:

(i) Analyze and quantify progress made, if any, in hazardous waste reduction, relative to each performance goal established under subparagraph (b) of this paragraph.

(ii) Set forth amendments, if needed, to the hazardous waste reduction plan and explain the need for the amendments.

2. Except for the information reported to the department under paragraph (5)(b) of this rule, Annual Reporting, the annual progress report shall be retained at the facility and shall not be considered a public record. However, the generator shall permit any officer, employee or representative of the department at all reasonable times to have access to the annual progress report.

(d) Review of Plan

1. The Commissioner may review a plan or an annual progress report to determine whether the plan or progress report reasonably contains the elements specified under subparagraph (b) of this paragraph. If a generator fails to complete a plan containing these elements or an annual progress report reasonably containing the elements required, the department shall notify the generator of the specific deficiencies. The department also may specify a reasonable time frame, of not more than one hundred and twenty (120) days, within which the generator shall modify the plan or progress report correcting the specified deficiencies.

2. If the Commissioner determines that a plan or progress report has not been modified to address the deficiencies identified, the Commissioner may issue an order for correction to the responsible person, and this order shall be complied with within the time limit specified in the order. Such order shall be served by personal service or shall be sent by certified mail, return receipt requested. Investigations made in accordance with this paragraph may be made on the initiative of the commissioner or board. Prior to the issuance of any order or the execution of any other enforcement action, the commissioner or director may request the presence of the alleged violator of this paragraph at a meeting to show cause why enforcement action ought not to be taken by the department.

(e) Confidentiality

A plan or annual progress report developed pursuant to this paragraph and maintained at the generating facility shall not be considered a public record. Information supplied to the department, as provided by this rule and defined as proprietary by regulation, shall not be revealed to any person without the consent of the person supplying such information. However, the summary information on waste reduction activities submitted to the department may be utilized by the commissioner, the board, the department, the United States Environmental Protection Agency, or any authorized representative of the commissioner or the board in connection with the responsibilities of the department or board pursuant to this paragraph or as necessary to comply with federal law. Copies of the any Form R's provided to the State and Environmental Protection Agency (EPA), can be requested from the Tennessee Emergency Management Agency (TEMA).

(7) Exports of Hazardous Waste [40 CFR 262 Subpart E]

(a) Applicability [40 CFR 262.50]

This paragraph establishes requirements applicable to exports of hazardous waste. Except to the extent subparagraph (i) of this paragraph provides otherwise, a primary exporter of hazardous waste must comply with the special requirements of this paragraph and a transporter transporting hazardous waste for export must comply with applicable requirements of Rule 0400-12-01-.04. Subparagraph (i) of this paragraph sets forth the requirements of international agreements between the United States and receiving countries which establish different notice, export, and enforcement procedures for the transportation, treatment, storage and disposal of hazardous waste for shipments between the United States and those countries.

(b) Definitions [40 CFR 262.51]

In addition to the definitions set forth at Rule 0400-12-01-.01(2)(a), the following definitions apply to this paragraph:

"Consignee" means the ultimate treatment, storage or disposal facility in a receiving country to which the hazardous waste will be sent.

"EPA Acknowledgement of Consent" means the cable sent to EPA from the U.S. Embassy in a receiving country that acknowledges the written consent of the receiving country to accept the hazardous waste and describes the terms and conditions of the receiving country's consent to the shipment.

"Primary Exporter" means any person who is required to originate the manifest for a shipment of hazardous waste in accordance with paragraph (3) of this rule, which specifies a treatment, storage, or disposal facility in a receiving country as the facility to which the hazardous waste will be sent and any intermediary arranging for the export.

"Receiving country" means a foreign country to which a hazardous waste is sent for the purpose of treatment, storage or disposal (except short-term storage incidental to transportation).

"Transit country" means any foreign country, other than a receiving country, through which a hazardous waste is transported.

(c) General Requirements [40 CFR 262.52]

Exports of hazardous waste are prohibited except in compliance with the applicable requirements of this paragraph and Rule 0400-12-01-.04. Exports of hazardous waste are prohibited unless:

1. Notification in accordance with subparagraph (d) of this paragraph has been provided;

2. The receiving country has consented to accept the hazardous waste;

3. A copy of the EPA Acknowledgment of Consent to the shipment accompanies the hazardous waste shipment and, unless exported by rail, is attached to the manifest (or shipping paper for exports by water (bulk shipment)).

4. The hazardous waste shipment conforms to the terms of the receiving country's written consent as reflected in the EPA Acknowledgment of Consent.

(d) Notification of Intent to Export [40 CFR 262.53]

1. A primary exporter of hazardous waste must notify EPA of an intended export before such waste is scheduled to leave the United States. A complete notification should be submitted sixty (60) days before the initial shipment is intended to be shipped off site. This notification may cover export activities extending over a twelve (12) month or lesser period. The notification must be in writing, signed by the primary exporter, and include the following information:

   (i) Name, mailing address, telephone number and EPA ID number of the primary exporter;

   (ii) By consignee, for each hazardous waste type:

      (I) A description of the hazardous waste and the hazardous waste code (from paragraphs (3) and (4) of Rule 0400-12-01-.02), U.S. DOT proper shipping name, hazard class and ID number (UN/NA) for each hazardous waste as identified in 49 CFR parts 171 through 177;

(II) The estimated frequency or rate at which such waste is to be exported and the period of time over which such waste is to be exported.

(III) The estimated total quantity of the hazardous waste in units as specified in the instructions to the Uniform Hazardous Waste Manifest Form (8700-22);

(IV) All points of entry to and departure from each foreign country through which the hazardous waste will pass;

(V) A description of the means by which each shipment of the hazardous waste will be transported (e.g., mode of transportation vehicle (air, highway, rail, water, etc.), type(s) of container (drums, boxes, tanks, etc.));

(VI) A description of the manner in which the hazardous waste will be treated, stored or disposed of in the receiving country (e.g., land or ocean incineration, other land disposal, ocean dumping, recycling);

(VII) The name and site address of the consignee and any alternate consignee; and

(VIII) The name of any transit countries through which the hazardous waste will be sent and a description of the approximate length of time the hazardous waste will remain in such country and the nature of its handling while there.

2. Notifications submitted by mail should be sent to the following mailing address: Office of Enforcement and Compliance Assurance, Office of Federal Activities, International Compliance Assurance Division (2254A), Environmental Protection Agency, 1200 Pennsylvania Ave., NW., Washington, DC 20460. Hand-delivered notifications should be sent to: Office of Enforcement and Compliance Assurance, Office of Federal Activities, International Compliance Assurance Division, Environmental Protection Agency, Ariel Rios Bldg., Room 6144, 12th St. and Pennsylvania Ave., NW., Washington, DC 20004. In both cases, the following shall be prominently displayed on the front of the envelope: "Attention: Notification of Intent to Export."

3. Except for changes to the telephone number in subpart 1(i) of this subparagraph, changes to item 1(ii)(V) of this subparagraph and decreases in the quantity indicated pursuant to item 1(ii)(III) of this subparagraph when the conditions specified on the original notification change (including any exceedance of the estimate of the quantity of hazardous waste specified in the original notification), the primary exporter must provide EPA with a written renotification of the change. The shipment cannot take place until consent of the receiving country to the changes (except for changes to item 1(ii)(VIII) of this subparagraph and in the ports of entry to and departure from transit countries pursuant to item 1(ii)(IV) of this subparagraph) has been obtained and the primary exporter receives an EPA Acknowledgment of Consent reflecting the receiving country's consent to the changes.

4. Upon request by EPA, a primary exporter shall furnish to EPA any additional information which a receiving country requests in order to respond to a notification.

5. In conjunction with the Department of State, EPA will provide a complete notification to the receiving country and any transit countries. A notification is complete when EPA receives a notification which EPA determines satisfies the requirements of part 1 of this subparagraph. Where a claim of confidentiality is asserted with respect to any notification information required by part 1 of this subparagraph, EPA may find the notification not complete until any such claim is resolved in accordance with Rule 0400-12-01-.01(7).

6. Where the receiving country consents to the receipt of the hazardous waste, EPA will forward an EPA Acknowledgment of Consent to the primary exporter for purposes of part (e)8 of this paragraph. Where the receiving country objects to receipt of the hazardous waste or withdraws a prior consent, EPA will notify the primary exporter in writing. EPA will also notify the primary exporter of any responses from transit countries.

(e) Special Manifest Requirements [40 CFR 262.54]

A primary exporter must comply with the manifest requirements of paragraph (3) of this rule except that:

1. In lieu of the name, site address and EPA ID number of the designated permitted facility, the primary exporter must enter the name and site address of the consignee.

2. In lieu of the name, site address and EPA ID number of a permitted alternate facility, the primary exporter may enter the name and site address of any alternate consignee.

3. In the International Shipments block, the primary exporter must check the export box and enter the point of exit (city and state) from the United States.

4. The following statement must be added to the end of the first sentence of the certification set forth in Item 16 of the Uniform Hazardous Waste Manifest Form: ``and conforms to the terms of the attached EPA Acknowledgment of Consent".

5. The primary exporter may obtain the manifest from any source that is registered with the U. S. EPA as a supplier of manifests (e.g., states, waste handlers, and/or commercial forms printers).

6. The primary exporter must require the consignee to confirm in writing the delivery of the hazardous waste to that facility and to describe any significant discrepancies (as defined in Rule 0400-12-01-.06(5)(c)1) between the manifest and the shipment. A copy of the manifest signed by such facility may be used to confirm delivery of the hazardous waste.

7. In lieu of the requirements of part (a)4 of paragraph (3) of this rule, where a shipment cannot be delivered for any reason to the designated or alternate consignee, the primary exporter must:

   (i) Renotify EPA of a change in the conditions of the original notification to allow shipment to a new consignee in accordance with part (d)3 of this paragraph and obtain an EPA Acknowledgment of Consent prior to delivery; or

   (ii) Instruct the transporter to return the waste to the primary exporter in the United States or designate another facility within the United States; and

   (iii) Instruct the transporter to revise the manifest in accordance with the primary exporter's instructions.

8. The primary exporter must attach a copy of the EPA Acknowledgment of Consent to the shipment to the manifest which must accompany the hazardous waste shipment. For exports by rail or water (bulk shipment), the primary exporter must provide the transporter with an EPA Acknowledgment of Consent which must accompany the hazardous waste but which need not be attached to the manifest except that for exports by water (bulk shipment) the primary exporter must attach the copy of the EPA Acknowledgment of Consent to the shipping paper.

9. The primary exporter shall provide the transporter with an additional copy of the manifest for delivery to the U.S. Customs official at the point the hazardous waste leaves the United States in accordance with Rule 0400-12-01-.04(3)(a)7(iv).

(f) Exception Reports [40 CFR 262.55]

In lieu of the requirements of subparagraph (5)(c) of this rule, a primary exporter must file an exception report with the Office of Enforcement and Compliance Assurance, Office of Federal Activities, International Compliance Assurance Division (2254A), Environmental Protection Agency, 1200 Pennsylvania Avenue, NW., Washington, DC, 20460, if any of the following occurs:

1. He has not received a copy of the manifest signed by the transporter stating the date and place of departure from the United States within forty-five (45) days from the date it was accepted by the initial transporter;

2. Within ninety (90) days from the date the waste was accepted by the initial transporter, the primary exporter has not received written confirmation from the consignee that the hazardous waste was received;

3. The waste is returned to the United States.

(g) Annual Reports [40 CFR 262.56]

1. Primary exporters of hazardous waste shall file with the Administrator no later than March 1 of each year, a report summarizing the types, quantities, frequency, and ultimate destination of all hazardous waste exported during the previous calendar year. Such reports shall include the following:

   (i) The EPA ID number, name, and mailing and site address of the exporter;

   (ii) The calendar year covered by the report;

   (iii) The name and site address of each consignee;

   (iv) By consignee, for each hazardous waste exported, a description of the hazardous waste, the hazardous waste code (from paragraph (3) or (4) of Rule 0400-12-01-.02), DOT hazard class, the name and US EPA ID Number (where applicable) for each transporter used, the total amount of waste shipped and number of shipments pursuant to each notification;

   (v) Except for hazardous waste produced by exporters of greater than 100 kg but less than 1000 kg in a calendar month, unless provided pursuant to subparagraph (5)(b) of this rule, in even numbered years:

      (I) A description of the efforts undertaken during the year to reduce the volume and toxicity of waste generated; and

      (II) A description of the changes in volume and toxicity of waste actually achieved during the year in comparison to previous years to the extent such information is available for years prior to 1984.

   (vi) A certification signed by the primary exporter which states:

      I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment.

2. Annual reports submitted by mail should be sent to the following mailing address: Office of Enforcement and Compliance Assurance, Office of Federal Activities, International Compliance Assurance Division (2254A), Environmental Protection Agency, 1200

Pennsylvania Ave., NW., Washington, DC 20460. Hand-delivered reports should be sent to: Office of Enforcement and Compliance Assurance, Office of Federal Activities, International Compliance Assurance Division, Environmental Protection Agency, Ariel Rios Bldg., Room 6144, 12th St. and Pennsylvania Ave., NW., Washington, DC 20004.

(h) Recordkeeping [40 CFR 262.57]

1. For all exports a primary exporter must:

(i) Keep a copy of each notification of intent to export for a period of at least three years from the date the hazardous waste was accepted by the initial transporter;

(ii) Keep a copy of each EPA Acknowledgment of Consent for a period of at least three years from the date the hazardous waste was accepted by the initial transporter;

(iii) Keep a copy of each confirmation of delivery of the hazardous waste from the consignee for at least three years from the date the hazardous waste was accepted by the initial transporter; and

(iv) Keep a copy of each annual report for a period of at least three years from the due date of the report.

2. The periods of retention referred to in part 1 of this subparagraph are extended automatically during the course of any unresolved enforcement action regarding the regulated activity or as requested by the Commissioner.

(i) International Agreements [40 CFR 262.58]

1. Any person who exports or imports wastes that are considered hazardous under U.S. national procedures to or from designated Member countries of the Organization for Economic Cooperation and Development (OECD) as defined in subpart (i) of the part for purposes of recovery is subject to 40 CFR Part 262, Subpart H. The requirements of this paragraph and paragraph (8) of this rule do not apply to such exports and imports. A waste is considered hazardous under U.S. national procedures if the waste meets the Federal definition of hazardous waste in 40 CFR 261.3 and is subject to either the Federal RCRA manifesting requirements at 40 CFR Part 262, Subpart B, the universal waste management standards of 40 CFR Part 273 (Rule 0400-12-01-.12), or the export requirements in the spent lead-acid battery management standards of 40 CFR Part 266, Subpart G (part (7)(a)1 of Rule 0400-12-01-.09).

(i) For the purpose of 40 CFR Part 262, Subpart H, the designated OECD Member countries consist of Australia, Austria, Belgium, the Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Japan, Luxembourg, the Netherlands, New Zealand, Norway, Poland Portugal, the Republic of Korea, the Slovak Republic, Spain, Sweden, Switzerland, Turkey, the United Kingdom, and the United States.

(ii) For the purpose of 40 CFR 262, Subpart H, Canada and Mexico are considered OECD Member countries only for the purpose of transit.

2. Any person who exports hazardous waste to or imports hazardous waste from: A designated OECD Member country for purposes other than recovery (e.g., incineration, disposal), Mexico (for any purpose), or Canada (for any purpose) remains subject to the requirements of this paragraph and paragraph (8) of this rule, and is not subject to the requirements of 40 CFR Part 262, Subpart H.

(8) Imports of Hazardous Waste [40 CFR 262 Subpart F]

(a) Imports of Hazardous Waste [40 CFR 262.60]

1. Any person who imports hazardous waste from a foreign country into the United States must comply with the requirements of this part and the special requirements of this subpart.

2. When importing hazardous waste, a person must meet all the requirements of subparagraph (3)(a) of this rule for the manifest except that:

   (i) In place of the generator's name, address and EPA Identification number, the name and address of the foreign generator and the importer's name, address and EPA Identification Number must be used.

   (ii) In place of the generator's signature on the certification statement, the U.S. importer or his agent must sign and date the certification and obtain the signature of the initial transporter.

3. A person who imports hazardous waste may obtain the manifest form from any source that is registered with the U. S. EPA as a supplier of manifests (e. g., states, waste handlers, and/or commercial forms printers).

4. In the International Shipments block, the importer must check the import box and enter the point of entry (city and state) into the United States.

5. The importer must provide the transporter with an additional copy of the manifest to be submitted by the receiving facility to U. S. EPA in accordance with Rules 0400-12-01-.05(5)(b)1(iii) and 0400-12-01-.06(5)(b)1(iii).

(9) (Reserved) Transboundary Movements of Hazardous Waste for Recovery within the OECD [40 CFR 262 Subpart H]

(Note: Subpart H is administered by EPA.)

(10) (RESERVED)

(11) (RESERVED)

(12) Alternative Requirements for Hazardous Waste Determination and Accumulation of Unwanted Material for Laboratories Owned by Eligible Academic Entities [40 CFR 262, Subpart K]

(a) Definitions for this paragraph [40 CFR 262.200]

The following definitions apply to this paragraph:

1. "Central accumulation area" means an on-site hazardous waste accumulation area subject to either parts (4)(e)2 and 3 of this rule (large quantity generators); or parts (4)(e)6, 7 and 8 of this rule (small quantity generators). A central accumulation area at an eligible academic entity that chooses to be subject to this paragraph must also comply with subparagraph (l) of this paragraph when accumulating unwanted material and/or hazardous waste.

2. "College/University" means a private or public, post-secondary, degree-granting, academic institution, that is accredited by an accrediting agency listed annually by the U.S. Department of Education.

3. "Eligible academic entity" means a college or university, or a non-profit research institute that is owned by or has a formal written affiliation agreement with a college or university, or a teaching hospital that is owned by or has a formal written affiliation agreement with a college or university.

4. "Formal written affiliation agreement for a non-profit research institute" means a written document that establishes a relationship between institutions for the purposes of research and/or education and is signed by authorized representatives, as defined by Rule 0400-12-01-.01(2)(a), from each institution. A relationship on a project-by-project or grant-by-grant basis is not considered a formal written affiliation agreement. A formal written affiliation agreement for a teaching hospital means a master affiliation agreement and program letter of agreement, as defined by the Accreditation Council for Graduate Medical Education, with an accredited medical program or medical school.

5. "Laboratory" means an area owned by an eligible academic entity where relatively small quantities of chemicals and other substances are used on a non-production basis for teaching or research (or diagnostic purposes at a teaching hospital) and are stored and used in containers that are easily manipulated by one person. Photo laboratories, art studios, and field laboratories are considered laboratories. Areas such as chemical stockrooms and preparatory laboratories that provide a support function to teaching or research laboratories (or diagnostic laboratories at teaching hospitals) are also considered laboratories.

6. Laboratory clean-out means an evaluation of the inventory of chemicals and other materials in a laboratory that are no longer needed or that have expired and the subsequent removal of those chemicals or other unwanted materials from the laboratory. A clean-out may occur for several reasons. It may be on a routine basis (e.g., at the end of a semester or academic year) or as a result of a renovation, relocation, or change in laboratory supervisor/occupant. A regularly scheduled removal of unwanted material as required by subparagraph (i) of this paragraph does not qualify as a laboratory clean-out.

7. "Laboratory worker" means a person who handles chemicals and/or unwanted material in a laboratory and may include, but is not limited to, faculty, staff, post-doctoral fellows, interns, researchers, technicians, supervisors/managers, and principal investigators. A person does not need to be paid or otherwise compensated for his/her work in the laboratory to be considered a laboratory worker. Undergraduate and graduate students in a supervised classroom setting are not laboratory workers.

8. "Non-profit research institute" means an organization that conducts research as its primary function and files as a non-profit organization under the tax code of 26 U.S.C. 501(c)(3).

9. "Reactive acutely hazardous unwanted material" means an unwanted material that is one of the acutely hazardous commercial chemical products listed in part (4)(d)5 of Rule 0400-12-01-.02 for reactivity.

10. "Teaching hospital" means a hospital that trains students to become physicians, nurses or other health or laboratory personnel.

11. "Trained professional" means a person who has completed the applicable training requirements of subparagraph (2)(g) of Rule 0400-12-01-.05 as required by subpart (4)(e)2(iv) of this rule for large quantity generators, or is knowledgeable about normal operations and emergencies in accordance with subpart (4)(e)6(vii) of this rule for small quantity generators and conditionally exempt small quantity generators. A trained professional may be an employee of the eligible academic entity or may be a contractor or vendor who meets the requisite training requirements.

12. "Unwanted material" means any chemical, mixtures of chemicals, products of experiments or other material from a laboratory that is no longer needed, wanted or usable in the laboratory and that is destined for hazardous waste determination by a trained professional. Unwanted materials include reactive acutely hazardous unwanted materials and materials that may eventually be determined not to be solid waste pursuant to subparagraph (1)(b) of Rule 0400-12-01-.02, or a hazardous waste pursuant to

subparagraph (1)(c) of Rule 0400-12-01-.02. If an eligible academic entity elects to use another equally effective term in lieu of "unwanted material," as allowed by item (g)1(i)(I) of this paragraph, the equally effective term has the same meaning and is subject to the same requirements as "unwanted material" under this paragraph.

13. "Working container" means a small container (i.e., two gallons or less) that is in use at a laboratory bench, hood, or other work station, to collect unwanted material from a laboratory experiment or procedure.

(b) Applicability of this paragraph. [40 CFR 262.201]

1. Large quantity generators and small quantity generators.

This paragraph provides alternative requirements to the requirements in subparagraph (1)(b) of this rule and part (4)(e)5 of this rule for the hazardous waste determination and accumulation of hazardous waste in laboratories owned by eligible academic entities that choose to be subject to this paragraph, provided that they complete the notification requirements of subparagraph (d) of this paragraph.

2. Conditionally exempt small quantity generators.

This paragraph provides alternative requirements to the conditional exemption in part (1)(e)2 of Rule 0400-12-01-.02 for the accumulation of hazardous waste in laboratories owned by eligible academic entities that choose to be subject to this paragraph, provided that they complete the notification requirements subparagraph (d) of this paragraph.

(c) This subparagraph is optional. [40 CFR 262.202]

1. Large quantity generators and small quantity generators:

Eligible academic entities have the option of complying with this paragraph with respect to its laboratories, as an alternative to complying with the requirements of subparagraph (1)(b) of this rule and part (4)(e)5 of this rule.

2. Conditionally exempt small quantity generators.

Eligible academic entities have the option of complying with this paragraph with respect to its laboratories, as an alternative to complying with the conditional exemption of part (1)(e)2 of Rule 0400-12-01-.02.

(d) How an eligible academic entity indicates it will be subject to the requirements of this paragraph. [40 CFR 262.203]

1. An eligible academic entity must notify the Department in writing that it is electing to be subject to the requirements of this paragraph for all the laboratories owned by the eligible academic entity under the same Installation Identification Number. An eligible academic entity that is a conditionally exempt small quantity generator and does not have an Installation Identification Number must notify that it is electing to be subject to the requirements of this paragraph for all the laboratories owned by the eligible academic entity that are on-site, as defined in paragraph (2) of Rule 0400-12-01-.01. An eligible academic entity must submit a separate notification (Hazardous Waste Registration and Notification form) for each Installation Identification Number (or site, for conditionally exempt small quantity generators) that is electing to be subject to the requirements of this paragraph, and must submit the Hazardous Waste Registration and Notification form before it begins operating under this paragraph.

2. Such notification must be submitted on Hazardous Waste Registration and Notification forms provided by the Department. The form must be completed according to the instructions accompanying it.

3. An eligible academic entity must keep a copy of the notification on file at the eligible academic entity for as long as its laboratories are subject to this paragraph.

4. A teaching hospital that is not owned by a college or university must keep a copy of its formal written affiliation agreement with a college or university on file at the teaching hospital for as long as its laboratories are subject to this paragraph.

5. A non-profit research institute that is not owned by a college or university must keep a copy of its formal written affiliation agreement with a college or university on file at the non-profit research institute for as long as its laboratories are subject to this paragraph.

(e) How an eligible academic entity indicates it will withdraw from the requirements of this paragraph. [40 CFR 262.204]

1. An eligible academic entity must notify the Department in writing that it is electing to no longer be subject to the requirements of this paragraph for all the laboratories owned by the eligible academic entity under the same Installation Identification Number and that it will comply with the requirements of subparagraph (1)(b) of this rule and part (4)(e)5 of this rule for small quantity generators and large quantity generators. An eligible academic entity that is a conditionally exempt small quantity generator and does not have an Installation Identification Number must notify that it is withdrawing from the requirements of this paragraph for all the laboratories owned by the eligible academic entity that are on-site and that it will comply with the conditional exemption of part (1)(e)2 of Rule 0400-12-01-.02. An eligible academic entity must submit a separate notification (Hazardous Waste Registration and Notification form) for each Installation Identification Number (or site, for conditionally exempt small quantity generators) that is withdrawing from the requirements of this paragraph and must submit the Hazardous Waste Registration and Notification form before it begins operating under the requirements of subparagraph (1)(b) of this rule and part (4)(e)5 of this rule for small quantity generators and large quantity generators, or part (1)(e)2 of Rule 0400-12-01-.02 for conditionally exempt small quantity generators.

2. Such notification must be submitted on Hazardous Waste Registration and Notification forms provided by the Department. The form must be completed according to the instructions accompanying it.

3. An eligible academic entity must keep a copy of the withdrawal notice on file at the eligible academic entity for five (5) years from the date of the notification.

(f) Summary of the requirements of this paragraph. [40 CFR 262.205]

An eligible academio entity that chooses to be subject to this paragraph is not required to have interim status or a hazardous waste management permit for the accumulation of unwanted material and hazardous waste in its laboratories, provided the laboratories comply with the provisions of this paragraph and the eligible academic entity has a Laboratory Management Plan (LMP) in accordance with subparagraph (o) of this paragraph that describes how the laboratories owned by the eligible academic entity will comply with the requirements of this paragraph.

(g) Labeling and management standards for containers of unwanted material in the laboratory. [40 CFR 262.206]

An eligible academic entity must manage containers of unwanted material while in the laboratory in accordance with the requirements in this subparagraph.

1. Labeling: Label unwanted material as follows:

(i) The following information must be affixed or attached to the container:

(I) The words "unwanted material" or another equally effective term that is to be used consistently by the eligible academic entity and that is identified in Part I of the Laboratory Management Plan; and

(II) Sufficient information to alert emergency responders to the contents of the container. Examples of information that would be sufficient to alert emergency responders to the contents of the container include, but are not limited to:

I. The name of the chemical(s); and

II. The type or class of chemical, such as organic solvents or halogenated organic solvents.

(ii) The following information may be affixed or attached to the container, but must at a minimum be associated with the container:

(I) The date that the unwanted material first began accumulating in the container; and

(II) Information sufficient to allow a trained professional to properly identify whether an unwanted material is a solid and hazardous waste and to assign the proper hazardous waste code(s), pursuant to subparagraph (1)(b) of this rule. Examples of information that would allow a trained professional to properly identify whether an unwanted material is a solid or hazardous waste include, but are not limited to:

I. The name and/or description of the chemical contents or composition of the unwanted material, or, if known, the product of the chemical reaction;

II. Whether the unwanted material has been used or is unused; and

III. A description of the manner in which the chemical was produced or processed, if applicable.

2. Management of Containers in the Laboratory:

An eligible academic entity must properly manage containers of unwanted material in the laboratory to assure safe storage of the unwanted material, to prevent leaks, spills, emissions to the air, adverse chemical reactions, and dangerous situations that may result in harm to human health or the environment. Proper container management must include the following:

(i) Containers are maintained and kept in good condition and damaged containers are replaced, overpacked, or repaired; and

(ii) Containers are compatible with their contents to avoid reactions between the contents and the container; and are made of, or lined with, material that is compatible with the unwanted material so that the container's integrity is not impaired; and

(iii) Containers must be kept closed at all times, except:

(I) When adding, removing or bulking unwanted material; or

(II) A working container may be open until the end of the procedure or work shift, or until it is full, whichever comes first, at which time the working

container must either be closed or the contents emptied into a separate container that is then closed; or

(III) When venting of a container is necessary.

I. For the proper operation of laboratory equipment, such as with in-line collection of unwanted materials from high performance liquid chromatographs; or

II. To prevent dangerous situations, such as build-up of extreme pressure.

(h) Training. [40 CFR 262.207]

An eligible academic entity must provide training to all individuals working in a laboratory at the eligible academic entity, as follows:

1. Training for laboratory workers and students must be commensurate with their duties so they understand the requirements in this paragraph and can implement them.

2. An eligible academic entity can provide training for laboratory workers and students in a variety of ways, including, but not limited to:

(i) Instruction by the professor or laboratory manager before or during an experiment; or

(ii) Formal classroom training; or

(iii) Electronic/written training; or

(iv) On-the-job training; or

(v) Written or oral exams.

3. An eligible academic entity that is a large quantity generator must maintain documentation for the durations specified in part (2)(g)5 of Rule 0400-12-01-.05 as required by subpart (4)(e)2(iv) of this rule demonstrating training for all laboratory workers that is sufficient to determine whether laboratory workers have been trained. Examples of documentation demonstrating training can include, but are not limited to, the following:

(i) Sign-in/attendance sheet(s) for training session(s); or

(ii) Syllabus for training session; or

(iii) Certificate of training completion; or

(iv) Test results.

4. A trained professional must:

(i) Accompany the transfer of unwanted material and hazardous waste when the unwanted material and hazardous waste is removed from the laboratory; and

(ii) Make the hazardous waste determination, pursuant to subparagraph (1)(b) of this rule, for unwanted material.

(i) Removing containers of unwanted material from the laboratory. [40 CFR 262.208]

1. Removing containers of unwanted material on a regular schedule. An eligible academic entity must either:

   (i) Remove all containers of unwanted material from each laboratory on a regular interval, not to exceed six (6) months; or

   (ii) Remove containers of unwanted material from each laboratory within six (6) months of each container's accumulation start date.

2. The eligible academic entity must specify in Part I of its Laboratory Management Plan whether it will comply with subpart 1(i) or (ii) of this subparagraph for the regular removal of unwanted material from its laboratories.

3. The eligible academic entity must specify in Part II of its Laboratory Management Plan how it will comply with subpart 1(i) or (ii) of this subparagraph and develop a schedule for regular removals of unwanted material from its laboratories.

4. Removing containers of unwanted material when volumes are exceeded.

   (i) If a laboratory accumulates a total volume of unwanted material (including reactive acutely hazardous unwanted material) in excess of 55 gallons before the regularly scheduled removal, the eligible academic entity must ensure that all containers of unwanted material in the laboratory (including reactive acutely hazardous unwanted material):

      (I) Are marked on the label that is associated with the container (or on the label that is affixed or attached to the container, if that is preferred) with the date that 55 gallons is exceeded; and

      (II) Are removed from the laboratory within ten (10) calendar days of the date that 55 gallons was exceeded, or at the next regularly scheduled removal, whichever comes first.

   (ii) If a laboratory accumulates more than 1 quart of reactive acutely hazardous unwanted material before the regularly scheduled removal, then the eligible academic entity must ensure that all containers of reactive acutely hazardous unwanted material:

      (I) Are marked on the label that is associated with the container (or on the label that is affixed or attached to the container, if that is preferred) with the date that 1 quart is exceeded; and

      (II) Are removed from the laboratory within ten (10) calendar days of the date that 1 quart was exceeded, or at the next regularly scheduled removal, whichever comes first.

(j) Where and when to make the hazardous waste determination and where to send containers of unwanted material upon removal from the laboratory. [40 CFR 262.209]

1. Large quantity generators and small quantity generators—an eligible academic entity must ensure that a trained professional makes a hazardous waste determination, pursuant to subparagraph (1)(b) of this rule, for unwanted material in any of the following areas:

   (i) In the laboratory before the unwanted material is removed from the laboratory, in accordance with subparagraph (k) of this paragraph;

   (ii) Within four (4) calendar days of arriving at an on-site central accumulation area, in accordance with subparagraph (l) of this paragraph; and

(iii) Within four (4) calendar days of arriving at an on-site interim status or permitted treatment, storage or disposal facility, in accordance with subparagraph (m) of this paragraph.

2. Conditionally exempt small quantity generators--an eligible academic entity must ensure that a trained professional makes a hazardous waste determination, pursuant to subparagraph (1)(b) of this rule, for unwanted material in the laboratory before the unwanted material is removed from the laboratory, in accordance with subparagraph (k) of this paragraph.

(k) Making the hazardous waste determination in the laboratory before the unwanted material is removed from the laboratory. [40 CFR 262.210]

If an eligible academic entity makes the hazardous waste determination, pursuant to subparagraph (1)(b) of this rule, for unwanted material in the laboratory, it must comply with the following:

1. A trained professional must make the hazardous waste determination, pursuant to subparagraph (1)(b) of this rule, before the unwanted material is removed from the laboratory.

2. If an unwanted material is a hazardous waste, the eligible academic entity must:

(i) Write the words "hazardous waste" on the container label that is affixed or attached to the container, before the hazardous waste may be removed from the laboratory; and

(ii) Write the appropriate hazardous waste code(s) on the label that is associated with the container (or on the label that is affixed or attached to the container, if that is preferred) before the hazardous waste is transported off-site; and

(iii) Count the hazardous waste toward the eligible academic entity's generator status, pursuant to parts (1)(e)3 and 4 of Rule 0400-12-01-.02, in the calendar month that the hazardous waste determination was made.

3. A trained professional must accompany all hazardous waste that is transferred from the laboratory(ies) to an on-site central accumulation area or on-site interim status or permitted treatment, storage or disposal facility.

4. When hazardous waste is removed from the laboratory:

(i) Large quantity generators and small quantity generators must ensure it is taken directly from the laboratory(ies) to an on-site central accumulation area, or on-site interim status or permitted treatment, storage or disposal facility, or transported off-site.

(ii) Conditionally exempt small quantity generators must ensure it is taken directly from the laboratory(ies) to any of the types of facilities listed in subpart (1)(e)6(iii) of Rule 0400-12-01-.02 for acute hazardous waste, or subpart (1)(e)7(iii) of Rule 0400-12-01-.02 for hazardous waste.

5. An unwanted material that is a hazardous waste is subject to all applicable hazardous waste regulations when it is removed from the laboratory.

(l) Making the hazardous waste determination at an on-site central accumulation area. [40 CFR 262.211]

If an eligible academic entity makes the hazardous waste determination, pursuant to subparagraph (1)(b) of this rule, for unwanted material at an on-site central accumulation area, it must comply with the following:

1. A trained professional must accompany all unwanted material that is transferred from the laboratory(ies) to an on-site central accumulation area; and

2. All unwanted material removed from the laboratory(ies) must be taken directly from the laboratory(ies) to the on-site central accumulation area; and

3. The unwanted material becomes subject to the generator accumulation regulations of parts (4)(e)2 and 3 of this rule for large quantity generators or parts (4)(e)6, 7 and 8 of this rule for small quantity generators as soon as it arrives in the central accumulation area, except for the "hazardous waste" labeling requirements of subpart (4)(e)2(iii) of this rule; and

4. A trained professional must determine, pursuant to subparagraph (1)(b) of this rule, if the unwanted material is a hazardous waste within four (4) calendar days of the unwanted materials' arrival at the on-site central accumulation area; and

5. If the unwanted material is a hazardous waste, the eligible academic entity must:

   (i) Write the words "hazardous waste" on the container label that is affixed or attached to the container, within four (4) calendar days of arriving at the on-site interim status or permitted treatment, storage or disposal facility and before the hazardous waste may be removed from the on-site interim status or permitted treatment, storage or disposal facility; and

   (ii) Write the appropriate hazardous waste code(s) on the container label that is associated with the container (or on the label that is affixed or attached to the container, if that is preferred) before the hazardous waste may be treated or disposed of on-site or transported off-site; and

   (iii) Count the hazardous waste toward the eligible academic entity's generator status, pursuant to parts (1)(e)3 and 4 of Rule 0400-12-01-.02 in the calendar month that the hazardous waste determination was made; and

   (iv) Manage the hazardous waste according to all applicable hazardous waste regulations.

(m) Making the hazardous waste determination at an on-site interim status or permitted treatment, storage or disposal facility. [40 CFR 262.212]

If an eligible academic entity makes the hazardous waste determination, pursuant to subparagraph (1)(b) of this rule, for unwanted material at an on-site interim status or permitted treatment, storage or disposal facility, it must comply with the following:

1. A trained professional must accompany all unwanted material that is transferred from the laboratory(ies) to an on-site interim status or permitted treatment, storage or disposal facility; and

2. All unwanted material removed from the laboratory(ies) must be taken directly from the laboratory(ies) to the on-site interim status or permitted treatment, storage or disposal facility; and

3. The unwanted material becomes subject to the terms of the eligible academic entity's hazardous waste permit or interim status as soon as it arrives in the on-site treatment, storage or disposal facility; and

4. A trained professional must determine, pursuant to subparagraph (1)(b) of this rule, if the unwanted material is a hazardous waste within four (4) calendar days of the unwanted materials' arrival at an on-site interim status or permitted treatment, storage or disposal facility; and

5. If the unwanted material is a hazardous waste, the eligible academic entity must:

(i) Write the words "hazardous waste" on the container label that is affixed or attached to the container (or on the label that is affixed or attached to the container, if that is preferred) within four (4) calendar days of arriving at the on-site interim status or permitted treatment, storage or disposal facility and before the hazardous waste may be removed from the on-site interim status or permitted treatment, storage or disposal facility; and

(ii) Write the appropriate hazardous waste code(s) on the container label that is associated with the container (or on the label that is affixed or attached to the container, if that is preferred) before the hazardous waste may be treated or disposed on-site or transported off-site; and

(iii) Count the hazardous waste toward the eligible academic entity's generator status, pursuant to parts (1)(e)3 and 4 of Rule 0400-12-01-.02 in the calendar month that the hazardous waste determination was made; and

(iv) Manage the hazardous waste according to all applicable hazardous waste regulations.

(n) Laboratory clean-outs. [40 CFR 262.213]

1. One time per twelve (12) month period for each laboratory, an eligible academic entity may opt to conduct a laboratory clean-out that is subject to all the applicable requirements of this paragraph, except that:

(i) If the volume of unwanted material in the laboratory exceeds 55 gallons (or 1 quart of reactive acutely hazardous unwanted material), the eligible academic entity is not required to remove all unwanted materials from the laboratory within ten (10) calendar days of exceeding 55 gallons (or 1 quart of reactive acutely hazardous unwanted material), as required by subparagraph (i) of this paragraph. Instead, the eligible academic entity must remove all unwanted materials from the laboratory within thirty (30) calendar days from the start of the laboratory clean-out; and

(ii) For the purposes of on-site accumulation, an eligible academic entity is not required to count a hazardous waste that is an unused commercial chemical product (listed in paragraph (4) of Rule 0400-12-01-.02 or exhibiting one or more characteristics in paragraph (3) of Rule 0400-12-01-.02) generated solely during the laboratory clean-out toward its hazardous waste generator status, pursuant to parts (1)(e)3 and 4 of Rule 0400-12-01-.02. An unwanted material that is generated prior to the beginning of the laboratory clean-out and is still in the laboratory at the time the laboratory clean-out commences must be counted toward hazardous waste generator status, pursuant to parts (1)(e)3 and 4 of Rule 0400-12-01-.02, if it is determined to be hazardous waste; and

(iii) For the purposes of off-site management, an eligible academic entity must count all its hazardous waste, regardless of whether the hazardous waste was counted toward generator status under subpart (ii) of this part, and if it generates more than 1 kg/month of acute hazardous waste or more than 100 kg/month of hazardous waste (i.e., the conditionally exempt small quantity generator limits of subparagraph (1)(e) of Rule 0400-12-01-.02), the hazardous waste is subject to all applicable hazardous waste regulations when it is transported off-site; and

(iv) An eligible academic entity must document the activities of the laboratory clean-out. The documentation must, at a minimum, identify the laboratory being cleaned out, the date the laboratory clean-out begins and ends, and the volume of hazardous waste generated during the laboratory clean-out. The eligible academic entity must maintain the records for a period of five (5) years from the date the clean-out ends; and

2. For all other laboratory clean-outs conducted during the same twelve (12) month period, an eligible academic entity is subject to all the applicable requirements of this paragraph, including, but not limited to:

(i) The requirement to remove all unwanted materials from the laboratory within ten (10) calendar days of exceeding 55 gallons (or 1 quart of reactive acutely hazardous unwanted material), as required by subparagraph (i) of this paragraph; and

(ii) The requirement to count all hazardous waste, including unused hazardous waste, generated during the laboratory clean-out toward its hazardous waste generator status, pursuant to parts (1)(e)3 and 4 of Rule 0400-12-01-.02.

(o) Laboratory management plan. [40 CFR 262.214]

An eligible academic entity must develop and retain a written Laboratory Management Plan, or revise an existing written plan. The Laboratory Management Plan is a site-specific document that describes how the eligible academic entity will manage unwanted materials in compliance with this paragraph. An eligible academic entity may write one Laboratory Management Plan for all the laboratories owned by the eligible academic entity that have opted into this paragraph, even if the laboratories are located at sites with different Installation Identification Numbers. The Laboratory Management Plan must contain two parts with a total of nine elements identified in parts 1 and 2 of this subparagraph. In Part I of its Laboratory Management Plan, an eligible academic entity must describe its procedures for each of the elements listed in part 1 of this subparagraph. An eligible academic entity must implement and comply with the specific provisions that it develops to address the elements in Part I of the Laboratory Management Plan. In Part II of its Laboratory Management Plan, an eligible academic entity must describe its best management practices for each of the elements listed in part 2 of this subparagraph. The specific actions taken by an eligible academic entity to implement each element in Part II of its Laboratory Management Plan may vary from the procedures described in the eligible academic entity's Laboratory Management Plan, without constituting a violation of this paragraph. An eligible academic entity may include additional elements and best management practices in Part II of its Laboratory Management Plan if it chooses.

1. The eligible academic entity must implement and comply with the specific provisions of Part I of its Laboratory Management Plan. In Part I of its Laboratory Management Plan, an eligible academic entity must:

(i) Describe procedures for container labeling in accordance with part (g)1 of this paragraph, as follows:

(I) Identifying whether the eligible academic entity will use the term "unwanted material" on the containers in the laboratory (If not, identify an equally effective term that will be used in lieu of "unwanted material" and consistently by the eligible academic entity. The equally effective term, if used, has the same meaning and is subject to the same requirements as "unwanted material.");

(II) Identifying the manner in which information that is "associated with the container" will be imparted.

(ii) Identify whether the eligible academic entity will comply with subpart (i)1(i) or (i)1(ii) of this paragraph for regularly scheduled removals of unwanted material from the laboratory.

2. In Part II of its Laboratory Management Plan, an eligible academic entity must:

(i) Describe its intended best practices for container labeling and management, (see the required standards at subparagraph (g) of this paragraph); and

(ii) Describe its intended best practices for providing training for laboratory workers and students commensurate with their duties (see the required standards at part (h)1 of this paragraph); and

(iii) Describe its intended best practices for providing training to ensure safe on-site transfers of unwanted material and hazardous waste by trained professionals (see the required standards at subpart (h)4(i) of this paragraph); and

(iv) Describe its intended best practices for removing unwanted material from the laboratory, including:

(I) For regularly scheduled removals—Develop a regular schedule for identifying and removing unwanted materials from its laboratories (see the required standards at subparts (i)1(i) and (i)1(ii) of this paragraph); and

(II) For removals when maximum volumes are exceeded:

I. Describe its intended best practices for removing unwanted materials from the laboratory within ten (10) calendar days when unwanted materials have exceeded their maximum volumes (see the required standards at part (i)4 of this paragraph); and

II. Describe its intended best practices for communicating that unwanted materials have exceeded their maximum volumes; and

(v) Describe its intended best practices for making hazardous waste determinations, including specifying the duties of the individuals involved in the process (see the required standards at subparagraph (1)(b) of this rule and subparagraphs (j) through (m) of this paragraph); and

(vi) Describe its intended best practices for laboratory clean-outs, if the eligible academic entity plans to use the incentives for laboratory clean-outs provided in subparagraph (n) of this paragraph, including:

(I) Procedures for conducting laboratory clean-outs (see the required standards at subparts (n)1(i) through (iii) of this paragraph); and

(II) Procedures for documenting laboratory clean-outs (see the required standards at subpart (n)1(iv) of this paragraph); and

(vii) Describe its intended best practices for emergency prevention, including:

(I) Procedures for emergency prevention, notification, and response, appropriate to the hazards in the laboratory; and

(II) A list of chemicals that the eligible academic entity has, or is likely to have, that become more dangerous when they exceed their expiration date and/or as they degrade; and

(III) Procedures to safely dispose of chemicals that become more dangerous when they exceed their expiration date and/or as they degrade; and

(IV) Procedures for the timely characterization of unknown chemicals.

3. An eligible academic entity must make its Laboratory Management Plan available to laboratory workers, students, or any others at the eligible academic entity who request it.

4. An eligible academic entity must review and revise its Laboratory Management Plan, as needed.

(p) Unwanted material that is not solid or hazardous waste. [40 CFR 262.215]

1. If an unwanted material does not meet the definition of solid waste in subparagraph (1)(b) of Rule 0400-12-01-.02, it is no longer subject to this paragraph or to the hazardous waste regulations.

2. If an unwanted material does not meet the definition of hazardous waste in subparagraph (1)(c) of Rule 0400-12-01-.02, it is no longer subject to this paragraph or to the hazardous waste regulations, but must be managed in compliance with any other applicable regulations and/or conditions.

(q) Non-laboratory hazardous waste generated at an eligible academic entity. [40 CFR 262.216]

An eligible academic entity that generates hazardous waste outside of a laboratory is not eligible to manage that hazardous waste under this paragraph; and

1. Remains subject to the generator requirements of subparagraph (1)(b) of this rule and part (4)(e)5 of this rule for large quantity generators and small quantity generators (if the hazardous waste is managed in a satellite accumulation area), and all other applicable generator requirements of Rule 0400-12-01-.03, with respect to that hazardous waste; or

2. Remains subject to the conditional exemption of part (1)(e)2 of Rule 0400-12-01-.02 for conditionally exempt small quantity generators, with respect to that hazardous waste.

(13) Appendix

(a) Appendix I [Appendix to 40 CFR 262] -- Uniform Hazardous Waste Manifest and Instructions (EPA Forms 8700-22 and 8700-22A and Their Instructions)

U.S. EPA Form 8700-22

Read all instructions before completing this form.

1. This form has been designed for use on a 12-pitch (elite) typewriter which is also compatible with standard computer printers; a firm point pen may also be used—press down hard.

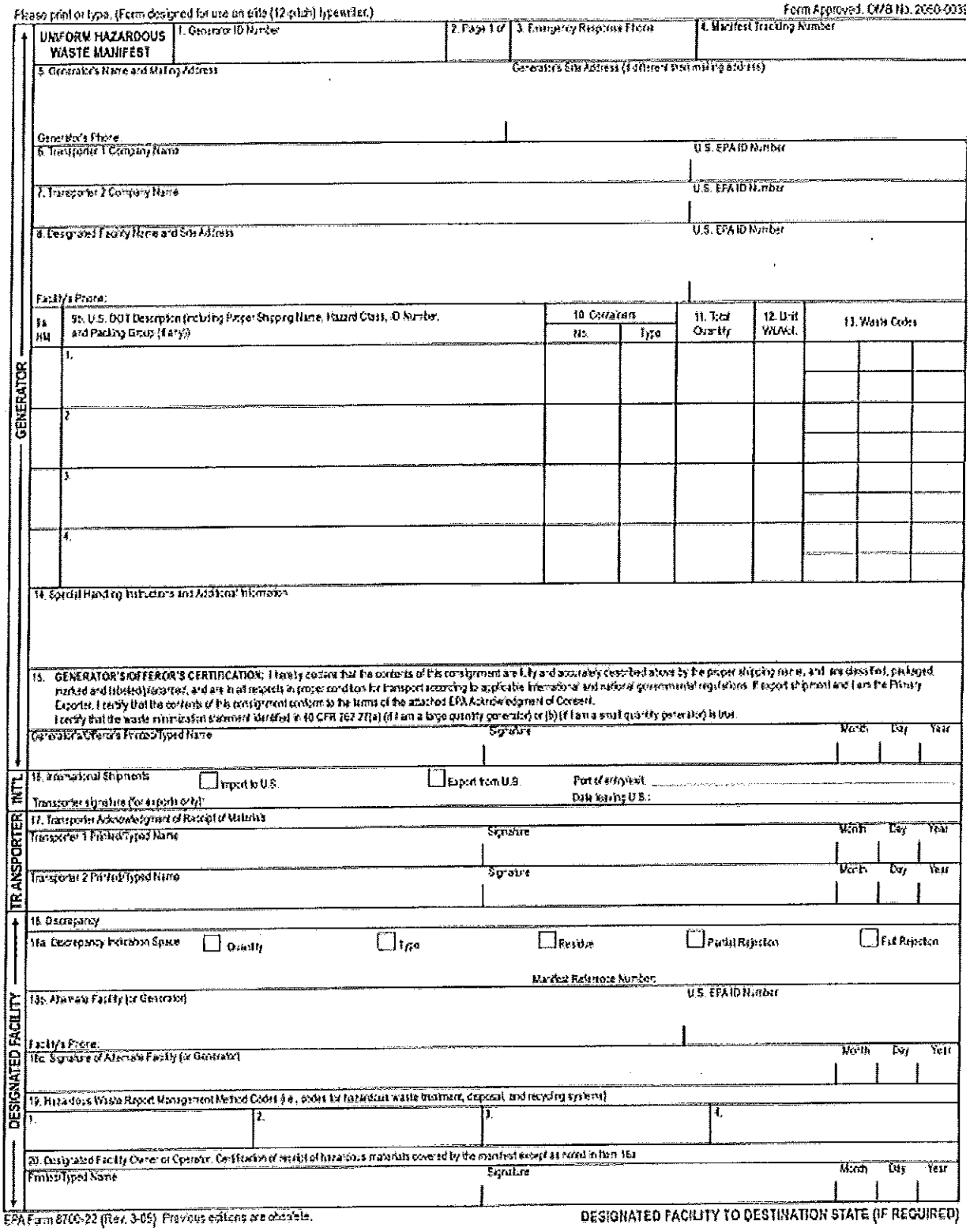
2. Federal regulations require generators and transporters of hazardous waste and owners or operators of hazardous waste treatment, storage, and disposal facilities to complete this form (FORM 8700–22) and, if necessary, the continuation sheet (FORM 8700–22A) for both inter- and intrastate transportation of hazardous waste.

* * * * *

Manifest 8700-22

The following statement must be included with each Uniform Hazardous Waste Manifest, either on the form, in the instructions to the form, or accompanying the form:

Public reporting burden for this collection of information is estimated to average: 30 minutes for generators, 10 minutes for transporters, and 25 minutes for owners or operators of treatment, storage, and disposal facilities. This includes time for reviewing instructions, gathering data, completing, reviewing and transmitting the form. Any correspondence regarding the PRA burden statement for the manifest must be sent to the Director of the Collection Strategies Division in EPA's Office of Information Collection at the following address: U.S. Environmental Protection Agency (2822T), 1200 Pennsylvania Ave., NW., Washington, DC 20460. Do not send the completed form to this address.


Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator ID Number | 2. Page 1 of | 3. Emergency Response Phone | 4. Manifest Tracking Number

5. Generator's Name and Mailing Address | Generator's Site Address (if different than mailing address)

Generator's Phone:

6. Transporter 1 Company Name | U.S. EPA ID Number

7. Transporter 2 Company Name | U.S. EPA ID Number

8. Designated Facility Name and Site Address | U.S. EPA ID Number

Facility's Phone:

	9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes		
GENERATOR		1.							
		2.							
		3.							
		4.							

14. Special Handling Instructions and Additional Information

15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby certify that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name | Signature | Month | Day | Year

INTL

16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:

Transporter signature (for exports only): Date leaving U.S.:

TRANSPORTER

17. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name | Signature | Month | Day | Year

Transporter 2 Printed/Typed Name | Signature | Month | Day | Year

DESIGNATED FACILITY

18. Discrepancy

18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

Manifest Reference Number:

18b. Alternate Facility (or Generator) | U.S. EPA ID Number

Facility's Phone:

18c. Signature of Alternate Facility (or Generator) | Month | Day | Year

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)

1. | 2. | 3. | 4.

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a

Printed/Typed Name | Signature | Month | Day | Year

EPA Form 8700-22 (Rev. 3-05) Previous editions are obsolete. DESIGNATED FACILITY TO DESTINATION STATE (IF REQUIRED)

I. Instructions for Generators

Item 1. Generator's U.S. EPA Identification Number

Enter the generator's U.S. EPA twelve digit identification number, or the State generator identification number if the generator site does not have an EPA identification number.

Item 2. Page 1 of –

Enter the total number of pages used to complete this Manifest (i.e., the first page (EPA Form 8700-22) plus the number of Continuation Sheets (EPA Form 8700-22A), if any).

Item 3. Emergency Response Phone Number

Enter a phone number for which emergency response information can be obtained in the event of an incident during transportation. The emergency response phone number must:

1. Be the number of the generator or the number of an agency or organization who is capable of and accepts responsibility for providing detailed information about the shipment;

2. Reach a phone that is monitored 24 hours a day at all times the waste is in transportation (including transportation related storage); and

3. Reach someone who is either knowledgeable of the hazardous waste being shipped and has comprehensive emergency response and spill cleanup/incident mitigation information for the material being shipped or has immediate access to a person who has that knowledge and information about the shipment.

(Note: Emergency Response phone number information should only be entered in Item 3 when there is one phone number that applies to all the waste materials described in Item 9b. If a situation (e.g., consolidated shipments) arises where more than one Emergency Response phone number applies to the various wastes listed on the manifest, the phone numbers associated with each specific material should be entered after its description in Item 9b.)

Item 4. Manifest Tracking Number

This unique tracking number must be pre-printed on the manifest by the forms printer.

Item 5. Generator's Mailing Address, Phone Number and Site Address

Enter the name of the generator, the mailing address to which the completed manifest signed by the designated facility should be mailed, and the generator's telephone number. Note, the telephone number (including area code) should be the normal business number for the generator, or the number where the generator or his authorized agent may be reached to provide instructions in the event the designated and/or alternate (if any) facility rejects some or all of the shipment. Also enter the physical site address from which the shipment originates only if this address is different than the mailing address.

Item 6. Transporter 1 Company Name, and U.S. EPA ID Number

Enter the company name and U.S. EPA ID number of the first transporter who will transport the waste. Vehicle or driver information may not be entered here.

Item 7. Transporter 2 Company Name and U.S. EPA ID Number

If applicable, enter the company name and U.S. EPA ID number of the second transporter who will transport the waste. Vehicle or driver information may not be entered here. If more than two transporters are needed, use a Continuation Sheet(s) (EPA Form 8700-22A).

Item 8. Designated Facility Name, Site Address, and U.S. EPA ID Number

Enter the company name and site address of the facility designated to receive the waste listed on this manifest. Also enter the facility's phone number and the U.S. EPA twelve digit identification number of the facility.

Item 9. U.S. DOT Description (Including Proper Shipping Name, Hazard Class or Division, Identification Number, and Packing Group)

Item 9a. If the wastes identified in Item 9b consist of both hazardous and nonhazardous materials, then identify the hazardous materials by entering an ``X" in this Item next to the corresponding hazardous material identified in Item 9b.

Item 9b. Enter the U.S. DOT Proper Shipping Name, Hazard Class or Division, Identification Number (UN/NA) and Packing Group for each waste as identified in 49 CFR 172. Include technical name(s) and reportable quantity references, if applicable.

(Note: If additional space is needed for waste descriptions, enter these additional descriptions in Item 27 on the Continuation Sheet (EPA Form 8700-22A). Also, if more than one Emergency Response phone number applies to the various wastes described in either Item 9b or Item 27, enter applicable Emergency Response phone numbers immediately following the shipping descriptions for those Items.)

Item 10. Containers (Number and Type)

Enter the number of containers for each waste and the appropriate abbreviation from Table I (below) for the type of container.

Table I.--Types of Containers

BA = Burlap, cloth, paper, or plastic bags.
CF = Fiber or plastic boxes, cartons, cases.
CM = Metal boxes, cartons, cases (including roll-offs).
CW = Wooden boxes, cartons, cases.
CY = Cylinders.
DF = Fiberboard or plastic drums, barrels, kegs.
DM = Metal drums, barrels, kegs.
DT = Dump truck.
DW = Wooden drums, barrels, kegs.
HG = Hopper or gondola cars.
TC = Tank cars.
TP = Portable tanks.
TT = Cargo tanks (tank trucks).

Item 11. Total Quantity

Enter, in designated boxes, the total quantity of waste. Round partial units to the nearest whole unit, and do not enter decimals or fractions. To the extent practical, report quantities using appropriate units of measure that will allow you to report quantities with precision. Waste quantities entered should be based on actual measurements or reasonably accurate estimates of actual quantities shipped. Container capacities are not acceptable as estimates.

Item 12. Units of Measure (Weight/Volume)

Enter, in designated boxes, the appropriate abbreviation from Table II (below) for the unit of measure.

Table II.--Units of Measure

G = Gallons (liquids only).
K = Kilograms.
L = Liters (liquids only).
M = Metric Tons (1000 kilograms).
N = Cubic Meters.
P = Pounds.
T = Tons (2000 pounds).

Y = Cubic Yards.

(Note: Tons, Metric Tons, Cubic Meters, and Cubic Yards should only be reported in connection with very large bulk shipments, such as rail cars, tank trucks, or barges.)

Item 13. Waste Codes

Enter up to six federal and state waste codes to describe each waste stream identified in Item 9b. State waste codes that are not redundant with federal codes must be entered here, in addition to the federal waste codes which are most representative of the properties of the waste.

Item 14. Special Handling Instructions and Additional Information.

1. Generators may enter any special handling or shipment-specific information necessary for the proper management or tracking of the materials under the generator's or other handler's business processes, such as waste profile numbers, container codes, bar codes, or response guide numbers. Generators also may use this space to enter additional descriptive information about their shipped materials, such as chemical names, constituent percentages, physical state, or specific gravity of wastes identified with volume units in Item 12.

2. This space may be used to record limited types of federally required information for which there is no specific space provided on the manifest, including any alternate facility designations; the Manifest Tracking Number of the original manifest for rejected wastes and residues that are re-shipped under a second manifest; and the specification of PCB waste descriptions and PCB out-of-service dates required under 40 CFR 761.207. Generators, however, cannot be required to enter information in this space to meet state regulatory requirements.

Item 15. Generator's/Offeror's Certifications

1. The generator must read, sign, and date the waste minimization certification statement. In signing the waste minimization certification statement, those generators who have not been exempted by statute or regulation from the duty to make a waste minimization certification under section 3002(b) of RCRA are also certifying that they have complied with the waste minimization requirements. The Generator's Certification also contains the required attestation that the shipment has been properly prepared and is in proper condition for transportation (the shipper's certification). The content of the shipper's certification statement is as follows: "I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name and are classified, packaged, marked, and labeled/placarded, and are in all respects in proper condition for transport by highway according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent." When a party other than the generator prepares the shipment for transportation, this party may also sign the shipper's certification statement as the offeror of the shipment.

2. Generator or Offeror personnel may preprint the words, "On behalf of" in the signature block or may hand write this statement in the signature block prior to signing the generator/offeror certification, to indicate that the individual signs as the employee or agent of the named principal.

(Note: All of the above information except the handwritten signature required in Item 15 may be pre-printed.)

II. Instructions for International Shipment Block

Item 16. International Shipments

For export shipments, the primary exporter must check the export box, and enter the point of exit (city and state) from the United States. For import shipments, the importer must check the import box and enter the point of entry

(city and state) into the United States. For exports, the transporter must sign and date the manifest to indicate the day the shipment left the United States. Transporters of hazardous waste shipments must deliver a copy of the manifest to the U.S. Customs when exporting the waste across U.S. borders.

III. Instructions for Transporters

Item 17. Transporters' Acknowledgments of Receipt

Enter the name of the person accepting the waste on behalf of the first transporter. That person must acknowledge acceptance of the waste described on the manifest by signing and entering the date of receipt. Only one signature per transportation company is required. Signatures are not required to track the movement of wastes in and out of transfer facilities, unless there is a change of custody between transporters. If applicable, enter the name of the person accepting the waste on behalf of the second transporter. That person must acknowledge acceptance of the waste described on the manifest by signing and entering the date of receipt.

(Note: Transporters carrying imports, who are acting as importers, may have responsibilities to enter information in the International Shipments Block. Transporters carrying exports may also have responsibilities to enter information in the International Shipments Block. See above instructions for Item 16.)

IV. Instructions for Owners and Operators of Treatment, Storage, and Disposal Facilities

Item 18. Discrepancy

Item 18a. Discrepancy Indication Space

1. The authorized representative of the designated (or alternate) facility's owner or operator must note in this space any discrepancies between the waste described on the Manifest and the waste actually received at the facility. Manifest discrepancies are: significant differences (as defined by §§264.72(b) and 265.72(b)) between the quantity or type of hazardous waste designated on the manifest or shipping paper, and the quantity and type of hazardous waste a facility actually receives, rejected wastes, which may be a full or partial shipment of hazardous waste that the TSDF cannot accept, or container residues, which are residues that exceed the quantity limits for "empty" containers set forth in 40 CFR 261.7(b).

2. For rejected loads and residues (40 CFR 264.72(d), (e), and (f), or 40 CFR 265.72(d), (e), or (f)), check the appropriate box if the shipment is a rejected load (i.e., rejected by the designated and/or alternate facility and is sent to an alternate facility or returned to the generator) or a regulated residue that cannot be removed from a container. Enter the reason for the rejection or the inability to remove the residue and a description of the waste. Also, reference the Manifest Tracking Number for any additional manifests being used to track the rejected waste or residue shipment on the original manifest. Indicate the original Manifest Tracking Number in Item 14, the Special Handling Block and Additional Information Block of the additional manifests.

3. Owners or operators of facilities located in unauthorized States (i.e., states in which the U.S. EPA administers the hazardous waste management program) who cannot resolve significant differences in quantity or type within 15 days of receiving the waste must submit to their Regional Administrator a letter with a copy of the Manifest at issue describing the discrepancy and attempts to reconcile it (40 CFR 264.72(c) and 265.72(c)).

4. Owners or operators of facilities located in authorized States (i.e., those States that have received authorization from the U.S. EPA to administer the hazardous waste management program) should contact their State agency for information on where to report discrepancies involving "significant differences" to state officials.

Item 18b. Alternate Facility (or Generator) for Receipt of Full Load Rejections

Enter the name, address, phone number, and EPA Identification Number of the Alternate Facility which the rejecting TSDF has designated, after consulting with the generator, to receive a fully rejected waste shipment. In the event that a fully rejected shipment is being returned to the generator, the rejecting TSDF may enter the

generator's site information in this space. This field is not to be used to forward partially rejected loads or residue waste shipments.

Item 18c. Alternate Facility (or Generator) Signature

The authorized representative of the alternate facility (or the generator in the event of a returned shipment) must sign and date this field of the form to acknowledge receipt of the fully rejected wastes or residues identified by the initial TSDF.

Item 19. Hazardous Waste Report Management Method Codes

Enter the most appropriate Hazardous Waste Report Management Method code for each waste listed in Item 9. The Hazardous Waste Report Management Method code is to be entered by the first treatment, storage, or disposal facility (TSDF) that receives the waste and is the code that best describes the way in which the waste is to be managed when received by the TSDF.

Item 20. Designated Facility Owner or Operator Certification of Receipt (Except As Noted in Item 18a)

Enter the name of the person receiving the waste on behalf of the owner or operator of the facility. That person must acknowledge receipt or rejection of the waste described on the Manifest by signing and entering the date of receipt or rejection where indicated. Since the Facility Certification acknowledges receipt of the waste except as noted in the Discrepancy Space in Item 18a, the certification should be signed for both waste receipt and waste rejection, with the rejection being noted and described in the space provided in Item 18a. Fully rejected wastes may be forwarded or returned using Item 18b after consultation with the generator. Enter the name of the person accepting the waste on behalf of the owner or operator of the alternate facility or the original generator. That person must acknowledge receipt or rejection of the waste described on the Manifest by signing and entering the date they received or rejected the waste in Item 18c. Partially rejected wastes and residues must be re-shipped under a new manifest, to be initiated and signed by the rejecting TSDF as offeror of the shipment.

Manifest Continuation Sheet Instructions – Continuation Sheet, U. S. EPA Form 8700-22A

Read all instructions before completing this form. This form has been designed for use on a 12-pitch (elite) typewriter; a firm point pen may also be used--press down hard.

This form must be used as a continuation sheet to U.S. EPA Form 8700-22 if:

- More than two transporters are to be used to transport the waste; or
- More space is required for the U.S. DOT descriptions and related information in Item 9 of U.S. EPA Form 8700-22.

Federal regulations require generators and transporters of hazardous waste and owners or operators of hazardous waste treatment, storage, or disposal facilities to use the Uniform Hazardous Waste Manifest (EPA Form 8700-22) and, if necessary, this continuation sheet (EPA Form 8700-22A) for both interstate and intrastate transportation.

Please print or type. (Form designed for use on elite (12-pitch) typewriter)

Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST (Continuation Sheet)

21. Generator ID Number | 22. Page | 23. Manifest Tracking Number

24. Generator's Name

25. Transporter ____ Company Name | U.S. EPA ID Number

26. Transporter ____ Company Name | U.S. EPA ID Number

GENERATOR

27a HM	27b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number and Packing Group (if any))	28. Containers No	Type	29. Total Quantity	30. Unit Wt./Vol.	31. Waste Codes		

32. Special Handling Instructions and Additional Information

TRANSPORTER

33. Transporter ____ Acknowledgment of Receipt of Materials
Printed/Typed Name | Signature | Month | Day | Year

34. Transporter ____ Acknowledgment of Receipt of Materials
Printed/Typed Name | Signature | Month | Day | Year

DESIGNATED FACILITY

35. Discrepancy

36. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)

EPA Form 8700-22A (Rev. 3-05) Previous editions are obsolete.

DESIGNATED FACILITY TO DESTINATION STATE (IF REQUIRED)

Item 21. Generator's ID Number

Enter the generator's U.S. EPA twelve digit identification number or, the State generator identification number if the generator site does not have an EPA identification number.

Item 22. Page ----

Enter the page number of this Continuation Sheet.

Item 23. Manifest Tracking Number

Enter the Manifest Tracking Number from Item 4 of the Manifest form to which this continuation sheet is attached.

Item 24. Generator's Name--

Enter the generator's name as it appears in Item 5 on the first page of the Manifest.

Item 25. Transporter--Company Name

If additional transporters are used to transport the waste described on this Manifest, enter the company name of each additional transporter in the order in which they will transport the waste. Enter after the word "Transporter" the order of the transporter. For example, Transporter 3 Company Name. Also enter the U.S. EPA twelve digit identification number of the transporter described in Item 25.

Item 26. Transporter--Company Name

If additional transporters are used to transport the waste described on this Manifest, enter the company name of each additional transporter in the order in which they will transport the waste. Enter after the word "Transporter" the order of the transporter. For example, Transporter 4 Company Name. Each Continuation Sheet can record the names of two additional transporters. Also enter the U.S. EPA twelve digit identification number of the transporter named in Item 26.

Item 27. U.S. D.O.T. Description Including Proper Shipping Name, Hazardous Class, and ID Number (UN/NA)

For each row enter a sequential number under Item 27b that corresponds to the order of waste codes from one continuation sheet to the next, to reflect the total number of wastes being shipped. Refer to instructions for Item 9 of the manifest for the information to be entered.

Item 28. Containers (No. And Type)

Refer to the instructions for Item 10 of the manifest for information to be entered.

Item 29. Total Quantity

Refer to the instructions for Item 11 of the manifest form.

Item 30. Units of Measure (Weight/Volume)

Refer to the instructions for Item 12 of the manifest form.

Item 31. Waste Codes

Refer to the instructions for Item 13 of the manifest form.

Item 32. Special Handling Instructions and Additional Information

Refer to the instructions for Item 14 of the manifest form.

Transporters

Item 33. Transporter--Acknowledgment of Receipt of Materials

Enter the same number of the Transporter as identified in Item 25. Enter also the name of the person accepting the waste on behalf of the Transporter (Company Name) identified in Item 25. That person must acknowledge acceptance of the waste described on the Manifest by signing and entering the date of receipt.

Item 34. Transporter--Acknowledgment of Receipt of Materials

Enter the same number of the Transporter as identified in Item 26. Enter also the name of the person accepting the waste on behalf of the Transporter (Company Name) identified in Item 26. That person must acknowledge acceptance of the waste described on the Manifest by signing and entering the date of receipt.

Owner and Operators of Treatment, Storage, or Disposal Facilities

Item 35. Discrepancy Indication Space

Refer to Item 18. This space may be used to more fully describe information on discrepancies identified in Item 18a of the manifest form.

Item 36. Hazardous Waste Report Management Method Codes

For each field here, enter the sequential number that corresponds to the waste materials described under Item 27, and enter the appropriate process code that describes how the materials will be processed when received. If additional continuation sheets are attached, continue numbering the waste materials and process code fields sequentially, and enter on each sheet the process codes corresponding to the waste materials identified on that sheet.

* * * * *

Authority: T.C.A. §§68-212-101 et seq. and 4-5-201 et seq.

0400-12-01-.04 Requirements Applicable to Transfer Facilities and Permit Requirements and Standards Applicable to Transporters of Hazardous Waste.

(1) General [40 CFR 263 Subpart A]

(a) Scope [40 CFR 263.10]

1. These regulations establish standards which apply to persons transporting hazardous waste within Tennessee if the transportation requires a manifest under Rule 0400-12-01-.03.

2. Nothing in this rule shall exempt a transporter from his responsibilities under the rules and regulations of the U.S. Department of Transportation, the U.S. Department of Homeland Security, or the Tennessee Regulatory Commission.

3. These regulations do not apply to on-site transportation of hazardous waste by generators or by owners or operators of permitted hazardous waste management facilities.

4. A transporter of hazardous waste must also comply with Rule 0400-12-01-.03 if he:

(i) Transports hazardous waste into the state from a foreign country (except for the notification requirements of Rule 0400-12-01-.03(2)); or

(ii) Mixes hazardous wastes of different DOT shipping descriptions by placing them into a single container.

5. A transporter of hazardous waste subject to the Federal manifesting requirements of 40 CFR Part 262, or subject to the waste management standards of 40 CFR Part 273 or Rule 0400-12-01-.12 that are being imported from or exported to any of the countries listed in subpart (7)(i)1(i) of Rule 0400-12-01-.03 for the purposes of recovery is subject to this paragraph and to all relevant requirements of 40 CFR Part 262, Subpart H, including, but not limited to, 40 CFR 262.84 for movement documents.

6. The regulations in this part do not apply to transportation during an explosives or munitions emergency response, conducted in accordance with Rule 0400-12-01-.05(1)(b)2(vii)(I)IV or (IV) or Rule 0400-12-01-.06(1)(b)2(vii)(I)IV or (IV) and Rule 0400-12-01-.07(1)(b)5(i)(IV) or (iii).

7. Rule 0400-12-01-.09(13)(d) identifies how the requirements of this rule apply to military munitions classified as solid waste under Rule 0400-12-01-.09(13)(c).

(b) Installation Identification Number and Transporter Permit [40 CFR 263.11]

1. A transporter must not transport hazardous waste which originates or terminates in Tennessee without having received an installation identification number and a transporter permit from the Department. Out-of-State transporters must obtain their installation identification numbers from their respective state agency or EPA, if appropriate.

2. A hazardous waste transfer facility shall not operate without having received an installation identification number from the Department by December 31 following September 6, 2004.

(c) Transfer Facility Requirements [40 CFR 263.12]

1. A hazardous waste transfer facility shall not operate without having received an installation identification number from the Department.

2. The operator of a hazardous waste transfer facility shall maintain a log of all shipments of hazardous waste entering and leaving the facility and other information specified by the Commissioner. Required information shall be tracked on forms provided by the Commissioner on the Division website or an equivalent tracking system. The log shall be retained for a period of five (5) years and made available for review by the Commissioner's representative.

3. The operator of a hazardous waste transfer facility shall insure that the transfer facility's operations comply with the provisions of:

(i) Rule 0400-12-01-.05(2)(g), Personnel Training;

(ii) Rule 0400-12-01-.05(9), Use and Management of Containers, except subparagraphs (e) and (i); and

(iii) Rule 0400-12-01-.05(2)(e), Security.

4. Except for the requirements of part 3 of this subparagraph, a transporter who stores manifested shipments of hazardous waste in containers meeting applicable DOT and Tennessee Regulatory Commission regulations and Rule 0400-12-01-.03(4) at a transfer facility for a period of ten days or less is not subject to regulation under Rules 0400-12-01-.05, 0400-12-01-.06, 0400-12-01-.07, or 0400-12-01-.10 with respect to the storage of those wastes.

(2) Permitting

(a) Applicability - Each person who transports in Tennessee a hazardous waste that originates or terminates in Tennessee must have a valid hazardous waste transporter permit obtained from the Department in accordance with subparagraph (b) of this paragraph, and is subject to the requirements of subparagraphs (c) and (d) of this paragraph. This permit is not required if the hazardous waste shipment is passing through the State.

(b) Obtaining a Permit

1. Any person who wishes to transport hazardous waste to or from locations within Tennessee must apply for and receive a hazardous waste transporter permit from the Department before beginning such transport operations. The transporter must submit the permit renewal form to the Department by December 31.

2. Application for or renewal of a permit shall consist of a written notification to the Department on forms provided by the Department. Such forms must be completed according to the instructions accompanying them. Information on the forms shall include, but not be limited to, the name, installation identification number, if previously issued, business address, telephone number of the transporter, and all applicable permit fees required under Rule 0400-12-01-.08(2)(a).

3. (i) The Commissioner shall issue the permit within 15 days following his receipt of a new permit application (not a renewal), unless such application is by a person that (1) had previously held a permit that was terminated by the Commissioner for violation of the requirements of these rules, or (2) had been operating as a transporter in violation of the permit requirement of this paragraph. Such persons shall not be issued a permit unless and until they demonstrate, to the satisfaction of the Commissioner, their willingness and capability to comply with the Act and these rules.

(ii) The Commissioner shall issue the permit for a renewal by January 31 following his receipt of the permit renewal application, unless such application is by a person that (1) had previously held a permit that was terminated by the Commissioner for violation of the requirements of these rules, or (2) had been

operating as a transporter in violation of the permit requirement of this paragraph. Such persons shall not be issued a permit unless and until they demonstrate, to the satisfaction of the Commissioner, their willingness and capability to comply with the Act and these rules.

4. Transporter permits shall not be transferable.

(c) Permit Duration/Renewal/Termination

1. Unless terminated as set forth in part 3 of this subparagraph, transporter permits shall remain in effect until January 31 of the following calendar year.

2. Unless he has initiated termination proceedings as set forth in part 3 of this subparagraph, the Commissioner shall automatically renew each transporter permit for another year upon his timely receipt of the annual maintenance fee required under Rule 0400-12-01-.08(3)(a).

3. (i) The Commissioner shall terminate a transporter permit within 10 days of receiving a request from the transporter to do so.

(ii) The Commissioner, after notifying the transporter and providing him with the opportunity to be heard on the matter, may by order terminate the permit of any transporter upon his violation of one or more of the applicable requirements of this Chapter or Chapter 1200-01-13.

(d) General Requirements

1. The permit shall be issued with an installation identification number as required under subparagraph (1)(b) of this rule. This number must be included on all manifests and other official documents and on correspondence between the transporter and the Department.

2. Transporters shall maintain a copy of their permit application on file, and shall notify the Department in writing within 30 days of any changes in the information submitted or of cessation of hazardous waste transportation services in this state.

3. A motor vehicle transporter shall have a copy of his permit with him and available for inspection whenever he picks up, transports, or delivers a shipment of hazardous waste in Tennessee; and shall provide the generator/shipper/transfer facility operator with the opportunity to inspect that permit if so requested.

(3) Compliance With the Manifest System and Recordkeeping [40 CFR 263 Subpart B]

(a) The Manifest System [40 CFR 263.20]

1. Manifest Requirements

A transporter may not accept hazardous waste from a generator unless the transporter is also provided with a manifest signed in accordance with the requirements of subparagraph (3)(d) of Rule 0400-12-01-.03.

2. Exports

In the case of exports other than those subject to Subpart H of 40 CFR 262, a transporter may not accept such waste from a primary exporter or other person if he knows the shipment does not conform to the EPA Acknowledgement of Consent; and unless, in addition to a manifest signed by the generator as provided in this paragraph, the transporter shall also be provided with an EPA Acknowledgement of Consent which, except for shipments by rail, is attached to the manifest (or shipping paper for exports by

water (bulk shipment)). For exports of hazardous waste subject to the requirements of Subpart H of 40 CFR 262, a transporter may not accept hazardous waste without a tracking document that includes all information required by 40 CFR 262.84.

3. Compliance Date for Form Revisions

   The revised Manifest form and procedures in subparagraph (2)(a) of Rule 0400-12-01-.01, subparagraph (1)(g) of Rule 0400-12-01-.02, and subparagraphs (3)(a) and (3)(b) of Rule 0400-12-01-.04 shall not apply until September 5, 2006.

4. A transporter who delivers a hazardous waste to another transporter or to the designated facility must:

   (i) Obtain the date of delivery and the handwritten signature of that transporter or of the owner or operator of the designated facility on the manifest; and

   (ii) Retain one copy of the manifest in accordance with subparagraph (c) of this paragraph; and

   (iii) Give the remaining copies of the manifest to the accepting transporter or designated facility.

5. The requirements of parts 3, 4, and 6 of this subparagraph do not apply to water (bulk shipment) transporters if:

   (i) The hazardous waste is delivered by water (bulk shipment) to the designated facility; and

   (ii) A shipping paper containing all the information required on the manifest (excluding the Installation Identification Numbers, generator certification, and signatures) and, for exports, an EPA Acknowledgment of Consent accompanies the hazardous waste; and

   (iii) The delivering transporter obtains the date of delivery and handwritten signature of the owner or operator of the designated facility on either the manifest or the shipping paper; and

   (iv) The person delivering the hazardous waste to the initial water (bulk shipment) transporter obtains the date of delivery and signature of the water (bulk shipment) transporter on the manifest and forwards it to the designated facility; and

   (v) A copy of the shipping paper or manifest is retained by each water (bulk shipment) transporter in accordance with subparagraph (c) of this paragraph.

6. For shipments involving rail transportation, the requirements of parts 3, 4, and 5 do not apply and the following requirements do apply:

   (i) When accepting hazardous waste from a non-rail transporter, the initial rail transporter must:

      (I) Sign and date the manifest acknowledging acceptance of the hazardous waste;

      (II) Return a signed copy of the manifest to the non-rail transporter;

      (III) Forward at least three copies of the manifest to:

         I. The next non-rail transporter, if any; or

II. The designated facility, if the shipment is delivered to that facility by rail; or

III. The last rail transporter designated to handle the waste in the United States;

(IV) Retain one copy of the manifest and rail shipping paper in accordance with subparagraph (c) of this paragraph.

(ii) Rail transporters must ensure that a shipping paper containing all the information required on the manifest (excluding the Installation Identification Numbers, generator certification, and signatures) and, for exports an EPA Acknowledgment of Consent accompanies the hazardous waste at all times.

(Note: Intermediate rail transporters are not required to sign either the manifest or shipping paper.)

(iii) When delivering hazardous waste to the designated facility, a rail transporter must:

(I) Obtain the date of delivery and handwritten signature of the owner or operator of the designated facility on the manifest or the shipping paper (if the manifest has not been received by the facility); and

(II) Retain a copy of the manifest or signed shipping paper in accordance with subparagraph (c) of this paragraph.

(iv) When delivering hazardous waste to a non-rail transporter a rail transporter must:

(I) Obtain the date of delivery and the handwritten signature of the next non-rail transporter on the manifest; and

(II) Retain a copy of the manifest in accordance with subparagraph (c) of this paragraph.

(v) Before accepting hazardous waste from a rail transporter, a non-rail transporter must sign and date the manifest and provide a copy to the rail transporter.

7. Transporters who transport hazardous waste out of the United States must:

(i) Sign and date the manifest in the International Shipments block to indicate the date that the shipment left the United States; and

(ii) Retain one copy in accordance with part (c)4 of this subparagraph; and

(iii) Return a signed copy of the manifest to the generator; and

(iv) Give a copy of the manifest to a U.S. Customs official at the point of departure from the United States.

8. A transporter transporting hazardous waste from a generator who generates greater than 100 kilograms but less than 1000 kilograms of hazardous waste in a calendar month need not comply with the requirements of this subparagraph or those of subparagraph (c) of this paragraph provided that:

(i) The waste is being transported pursuant to a reclamation agreement as provided for in Rule 0400-12-01-.03(3)(a)5;

(ii) The transporter records, on a log or shipping paper, the following information for each shipment:

(I) The name, address, and U.S. Installation Identification Number of the generator of the waste;

(II) The quantity of waste accepted;

(III) All DOT-required shipping information;

(IV) The date the waste is accepted; and

(iii) The transporter carries this record when transporting waste to the reclamation facility; and

(iv) The transporter retains these records for a period of at least three years after termination or expiration of the agreement.

(b) Compliance with the Manifest [40 CFR 263.21]

1. The transporter must deliver the entire quantity of hazardous waste which he has accepted from a generator or a transporter to:

(i) The designated facility listed on the manifest; or

(ii) The alternate designated facility, if the hazardous waste cannot be delivered to the designated facility because an emergency prevents delivery; or

(iii) The next designated transporter; or

(iv) The place outside the United States designated by the generator.

2. (i) If the hazardous waste cannot be delivered in accordance with part 1 of this subparagraph because of an emergency condition other than rejection of the waste by the designated facility, then the transporter must contact the generator for further directions and must revise the manifest according to the generator's instructions.

(ii) If hazardous waste is rejected by the designated facility while the transporter is on the facility's premises, then the transporter must obtain the following:

(I) For a partial load rejection or for regulated quantities of container residues, a copy of the original manifest that includes the facility's date and signature and the Manifest Tracking Number of the new manifest that will accompany the shipment, and a description of the partial rejection or container residue in the discrepancy block of the original manifest. The transporter must retain a copy of this manifest in accordance with subparagraph (3)(e) of this rule, and give the remaining copies of the original manifest to the rejecting designated facility. If the transporter is forwarding the rejected part of the shipment or a regulated container residue to an alternate facility or returning it to the generator, the transporter must obtain a new manifest to accompany the shipment, and the new manifest must include all of the information required in Rule 0400-12-01-.06(5)(c)5(i) though (vi) or 6(i) through (vi) or Rule 0400-12-01-.05(5)(c)5(i) though (vi) or 6(i) through (vi).

(II) For a full load rejection that will be taken back by the transporter, a copy of the original manifest that includes the rejecting facility's signature and date attesting to the rejection, the description of the rejection in the

discrepancy block of the manifest, and the name, address, phone number, and Identification Number for the alternate facility or generator to whom the shipment must be delivered. The transporter must retain a copy of the manifest in accordance with subparagraph (3)(c) of this rule, and give a copy of the manifest containing this information to the rejecting designated facility. If the original manifest is not used, then the transporter must obtain a new manifest for the shipment and comply with Rule 0400-12-01-.06(5)(c)5(i) through (vi) or Rule 0400-12-01-.05(5)(c)5(i) through (vi).

(c) Recordkeeping [40 CFR 263.22]

1. A transporter of hazardous waste must keep a copy of the manifest signed by the generator, himself, and the next designated transporter or the owner or operator of the designated facility for a period of three years from the date the hazardous waste was accepted by the initial transporter.

2. For shipments delivered to the designated facility by water (bulk shipment), each water (bulk shipment) transporter must retain a copy of the shipping paper containing all the information required in subpart (a)5(ii) of this paragraph for a period of three years from the date the hazardous waste was accepted by the initial transporter.

3. For shipments of hazardous waste by rail within the United States:

   (i) The initial rail transporter must keep a copy of the manifest and shipping paper with all the information required in subpart (a)6(ii) of this paragraph for a period of three years from the date the hazardous waste was accepted by the initial transporter; and

   (ii) The final rail transporter must keep a copy of the signed manifest (or the shipping paper if signed by the designated facility in lieu of the manifest) for a period of three years from the date the hazardous waste was accepted by the initial transporter.

   (Note: Intermediate rail transporters are not required to keep records pursuant to these regulations.)

4. A transporter who transports hazardous waste out of the United States must keep a copy of the manifest indicating that the hazardous waste left the United States for a period of three years from the date the hazardous waste was accepted by the initial transporter.

5. The periods of retention referred to in this subparagraph are extended automatically during the course of any unresolved enforcement action regarding the regulated activity or as requested by the Administrator/Commissioner.

6. Any person who holds or has held a transporter permit in Tennessee pursuant to paragraph (2) of this rule must furnish upon request, and make available at all reasonable times for inspection, by any officer, employee, or representative of the Department who is duly designated by the Commissioner, all records required under this subparagraph.

7. A transfer facility must maintain an operating record or log to demonstrate its compliance with the 10-day storage limit for hazardous waste as set forth in subparagraph (1)(c) of this rule.

(4) Hazardous Waste Discharges [40 CFR 263 Subpart C]

(a) Immediate Action [40 CFR 263.30]

1. In the event of a discharge of hazardous waste during transportation, the transporter must take appropriate immediate action to protect public health and the environment (e.g., notify local authorities, dike the discharge area).

2. If a discharge of hazardous waste occurs during transportation and an official (State or local government or a Federal Agency) acting within the scope of his official responsibilities determines that immediate removal of the waste is necessary to protect public health or the environment, that official may authorize the removal of the waste by transporters who do not have installation identification numbers and without the preparation of a manifest.

3. A transporter who has discharged hazardous waste in Tennessee must immediately telephone the 24-hour toll-free number of the Tennessee Emergency Management Agency, which is 800-262-3300 for in-state callers or 800-258-3300 for out-of-state callers, and furnish the following information:

   (i) Name of person reporting the spill;

   (ii) Name and address of transporter involved;

   (iii) Name and address of generator;

   (iv) Telephone number where reporter can be contacted;

   (v) Date, time, and location of incident (indicate pollution of land, water, air, or public water supply, if known);

   (vi) Type of incident (e.g., fire, spillage);

   (vii) Description (including hazard class) and quantity of hazardous waste involved, to the extent available;

   (viii) Type of transport vehicle and mode; and

   (ix) The extent of injuries, if any.

   (Note: Under DOT regulations (49 CFR 171.15 and 171.16), the transporter may also be required to give notice to the National Response Center at 800-424-8802 or 202-426-2675 and report in writing to DOT.)

4. An air, rail, highway, or water transporter who has discharged hazardous waste must report in writing as required by 49 CFR 171.16 to the Director, Office of Hazardous Materials Regulations, Materials Transportation Bureau, Department of Transportation, Washington, DC 20590.

   (Note: A copy of the U.S. Department of Transportation (DOT) form F5800.1 shall suffice for this report provided that it is properly completed and supplemented as necessary to include all information required by this paragraph.)

5. A water (bulk shipment) transporter who has discharged hazardous waste must give the same notice as required by 33 CFR 153.203 (as that Federal regulation exists on the effective date of these rules) for oil and hazardous substances.

(b) Discharge Clean Up [40 CFR 263.31]

1. A transporter must clean up any hazardous waste discharge that occurs during transportation or take such action as may be required or approved by Federal, State, or local officials so that the hazardous waste discharge no longer presents a hazard to public health or the environment.

Authority: T.C.A. §§68-212-101 et seq. and 4-5-201 et seq.

0400-12-01-.05 Interim Status Standards for Owners and Operators of Existing Hazardous Waste Treatment, Storage, and Disposal Facilities.

(1) General [40 CFR 265 Subpart A]

(a) Purpose [40 CFR 265.1]

1. The purpose of this rule is to establish minimum standards that define the acceptable management of hazardous waste during the period of interim status and until certification of final closure or, if the facility is subject to post-closure requirements, until post-closure responsibilities are fulfilled.

(b) Applicability [40 CFR 265.1]

1. Except as provided in part (29)(a)2 of this rule, the standards of this rule and of Rule 0400-12-01-.06(22)(c), (d), and (e) apply to owners and operators of facilities that treat, store, or dispose of hazardous waste who have fully complied with the requirements for interim status under Rules 0400-12-01-.07(2) and (3) until either a permit is issued under Rule 0400-12-01-.07(7) or until applicable closure and post-closure responsibilities under this rule are fulfilled, and to those owners and operators of facilities in existence on November 19, 1980 who have failed to file Part A of the permit application as required by Rule 0400-12-01-.07(2)(b) and (d). These standards apply to all treatment, storage, and disposal of hazardous waste at these facilities after the effective date of this Chapter, except as specifically provided otherwise in this rule or Rule 0400-12-01-.02. The requirements of this rule apply to owners or operators of all facilities which treat, store or dispose of hazardous waste referred to in Rule 0400-12-01-.10, and the standards of Rule 0400-12-01-.10 are considered material conditions or requirements of this rule.

(Note: Chapter 0400-12-01 became effective as rulemaking hearing rules on March 2, 1981.)

2. The requirements of this rule do not apply to:

(i) The owner or operator of a facility permitted or registered by the Commissioner or Board, as appropriate, pursuant to the "Tennessee Solid Waste Disposal Act" (T.C.A. §§68-211-101 through 68-211-115 and 68-211-301), to manage municipal or industrial waste, if the only hazardous waste the facility treats, stores, or disposes of is excluded from regulation under this rule by Rule 0400-12-01-.02(1)(e) as a "small quantity";

(ii) The addition of absorbent material to waste in a container (as defined in Rule 0400-12-01-.01(2)) or the addition of waste to the absorbent material in a container, provided that these actions occur at the time waste is first placed in the container; and part (2)(h)2, subparagraph (9)(b), and subparagraph (9)(c) of this rule are complied with;

(iii) The owner and operator of a facility managing recyclable materials described in Rule 0400-12-01-.02(1)(f)1(ii), (iii), and (iv) (except to the extent they are referred to in Rule 0400-12-01-.11 or in paragraph (3), (6), (7), or (8) of Rule 0400-12-01-.09);

(iv) A generator accumulating waste on-site in compliance with Rule 0400-12-01-.03(4)(e) (except to the extent such requirements are included in Rule 0400-12-01-.03(4)(e)), unless the generator is accumulating the waste in a facility otherwise subject to this rule;

(v) The owner or operator of a totally enclosed treatment facility, as defined in Rule 0400-12-01-.01(2);

(vi) The owner or operator of one of the following units, as defined in Rule 0400-12-01-.01(2)(a), provided that if the owner or operator is diluting hazardous ignitable (D001) wastes (other than the D001 High TOC Subcategory defined in Rule 0400-12-01-.10(3)(a), Table Treatment Standards for Hazardous Wastes), or reactive (D003) waste, to remove the characteristic before land disposal, the owner/operator must comply with the requirements set out in part (2)(h)2 of this rule:

(I) an elementary neutralization unit;

(II) an on-site wastewater treatment unit; or

(III) an off-site wastewater treatment unit located at a facility otherwise required to have a permit issued pursuant to Rule 0400-12-01-.07(7).

(vii) (I) Except as provided in item (II) of this subpart, a person engaged in treatment or containment activities during immediate response to any of the following situations:

I. A discharge of a hazardous waste;

II. An imminent and substantial threat of a discharge of hazardous waste;

III. A discharge of a material which, when discharged, becomes a hazardous waste.

IV. An immediate threat to human health, public safety, property, or the environment, from the known or suspected presence of military munitions, other explosive material, or an explosive device, as determined by an explosive or munitions emergency response specialist as defined in Rule 0400-12-01-.01(2)(a).

(II) An owner or operator of a facility otherwise regulated by this rule must comply with all applicable requirements of paragraphs (3) and (4) of this rule.

(III) Any person who is covered by item (I) of this subpart and who continues or initiates hazardous waste treatment or containment activities after the immediate response is over is subject to all applicable requirements of this rule and Rules 0400-12-01-.06 and 0400-12-01-.07 for those activities.

(IV) In the case of an explosives or munitions emergency response, if a Federal, State, Tribal or local official acting within the scope of his or her official responsibilities, or an explosives or munitions emergency response specialist, determines that immediate removal of the material or waste is necessary to protect human health or the environment, that official or specialist may authorize the removal of the material or waste by transporters who do not have Installation Identification Numbers and without the preparation of a manifest. In the case of emergencies involving military munitions, the responding military emergency response specialist's organizational unit must retain records for three years identifying the dates of the response, the responsible persons responding, the type and description of material addressed, and its disposition.

(viii) A transporter storing manifested shipments of hazardous waste in containers meeting applicable DOT and Tennessee Regulatory Commission regulations for

packaging at a transfer facility for a period of ten days or less;

(ix) A person disposing of hazardous waste by means of underground injection subject to permits issued under Chapter 1200-04-06 of the rules of the State of Tennessee and under Part C of the Federal Safe Drinking Water Act (42 U.S.C. 3001 et seq.);

(Comment: This rule does apply to the aboveground treatment or storage of hazardous waste before it is injected underground.)

(x) The owner or operator of a POTW which treats, stores, or disposes of hazardous waste;

(xi) A farmer disposing of waste pesticides from his own use in compliance with Rule 0400-12-01-.02(1)(d)1(ii)(II).

(xii) Universal waste handlers and universal waste transporters (as defined in Rule 0400-12-01-.01(2)(a)) handling the wastes listed in Rule 0400-12-01-.12(1)(a). These handlers are subject to regulation under Rule 0400-12-01-.12, when handling the universal wastes listed in Rule 0400-12-01-.12(1)(a).

(Comment: The owner or operator of a facility under subparts (ix) and (x) of this part is subject to the requirements of Rule 0400-12-01-.06 to the extent those requirements are included in a permit-by-rule granted to such a person under Rule 0400-12-01-.07(1)(c).)

(c) Prohibitions [40 CFR 265.1(d)]

1. The following hazardous wastes must not be managed at facilities subject to regulation under this rule:

(i) Wastes included under hazardous waste listings F020, F021, F022, F023, F026, or F027, unless:

(I) The waste is a wastewater treatment sludge generated in a surface impoundment as part of the plant's wastewater treatment system; or

(II) The waste is stored in tanks or containers; or

(III) The waste is stored or treated in waste piles that meet the requirements of Rule 0400-12-01-.06(12)(a)3 as well as all other applicable requirements of paragraph (12) of this rule.

(d) Rule 0400-12-01-.09(13)(f) identifies when the requirements of this rule apply to the storage of military munitions classified as solid waste under Rule 0400-12-01-.09(13)(c). The treatment and disposal of hazardous waste military munitions are subject to the applicable permitting, procedural, and technical standards in Rules 0400-12-01-.01 through .10.

(2) General Facility Standards [40 CFR 265 Subpart B]

(a) Applicability [40 CFR 265.10]

The regulations in this subpart apply to owners and operators of all hazardous waste facilities, except as subparagraph (1)(b) of this rule provides otherwise.

(b) Identification Number [40 CFR 265.11]

Every facility owner or operator must apply to the Department for an Installation Identification Number in accordance with the permit application procedures of Rule 0400-12-01-.07(2).

(c) Required Notices [40 CFR 265.12]

1. (i) The owner or operator of a facility that has arranged to receive hazardous waste from a foreign source must notify the Commissioner in writing at least four weeks in advance of the date the waste is expected to arrive at the facility. Notice of subsequent shipments of the same waste from the same foreign source is not required.

(ii) The owner or operator of a recovery facility that has arranged to receive hazardous waste subject to 40 CFR Part 262, Subpart H must provide a copy of the movement document bearing all required signatures to the foreign exporter, to the Office of Enforcement and Compliance Assurance, Office of Federal Activities, International Compliance Assurance Division (2254A) , Environmental Protection Agency, 1200 Pennsylvania Avenue, NW., Washington, DC 20460; and to the competent authorities of all other countries concerned within three (3) working days of receipt of the shipment. The original of the signed movement document must be maintained at the facility for at least three (3) years. In addition, such owner or operator shall, as soon as possible, but no later than thirty (30) days after the completion of recovery and no later than one (1) calendar year following the receipt of the hazardous waste, send a certificate of recovery to the foreign exporter and to the competent authority of the country of export and to EPA's Office of Enforcement and Compliance Assurance at the above address by mail, e-mail without a digital signature followed by mail, or fax followed by mail.

2. Before transferring ownership or operation of a facility during its operating life, or of a disposal facility during the post-closure care period, the owner or operator must notify the new owner or operator in writing of the requirements of this rule, Rule 0400-12-01-.07, and Rule 0400-12-01-.08. (Also see Rule 0400-12-01-.07(3).)

(Comment: An owner's or operator's failure to notify the new owner or operator of the requirements of this rule in no way relieves the new owner or operator of his obligation to comply with all applicable requirements.)

(d) General Waste Analysis [40 CFR 265.13]

1. (i) Before an owner or operator treats, stores, or disposes of any hazardous wastes, or nonhazardous wastes if applicable under part (7)(d)4 of this rule, he must obtain a detailed chemical and physical analysis of a representative sample of the wastes. At a minimum, the analysis must contain all the information which must be known to treat, store, or dispose of the waste in accordance with this rule and Rule 0400-12-01-.10.

(ii) The analysis may include data developed under Rule 0400-12-01-.02, and existing published or documented data on the hazardous waste or on waste generated from similar processes.

(Comment: For example, the facility's records of analyses performed on the waste before the effective date of these regulations, or studies conducted on hazardous waste generated from processes similar to that which generated the waste to be managed at the facility, may be included in the data base required to comply with subpart (i) of this part. The owner or operator of an off-site facility may arrange for the generator of the hazardous waste to supply part of the information required by subpart (i) of this part, except as otherwise specified in Rule 0400-12-01-.10(1)(g)2 and 3. If the generator does not supply the information, and the owner or operator chooses to accept a hazardous waste, the owner or operator is responsible for obtaining the information required to comply with this subparagraph.)

(iii) The analysis must be repeated as necessary to ensure that it is accurate and up to date. At a minimum, the analysis must be repeated:

(I) When the owner or operator is notified, or has reason to believe, that the process or operation generating the hazardous wastes or non-hazardous wastes, if applicable, under part (7)(d)4 of this rule has changed; and

(II) For off-site facilities, when the results of the inspection required in subpart 1(iv) of this subparagraph indicate that the hazardous waste received at the facility does not match the waste designated on the accompanying manifest or shipping paper.

(iv) The owner or operator of an off-site facility must inspect and, if necessary, analyze each hazardous waste movement received at the facility to determine whether it matches the identity of the waste specified on the accompanying manifest or shipping paper.

2. The owner or operator must develop and follow a written waste analysis plan which describes the procedures which he will carry out to comply with part 1 of this subparagraph. He must keep this plan at the facility. At a minimum, the plan must specify:

(i) The parameters for which each hazardous waste, or non-hazardous waste if applicable under part (7)(d)4 of this rule, will be analyzed and the rationale for the selection of these parameters (i.e., how analysis for these parameters will provide sufficient information on the waste's properties to comply with subpart 1(iv) of this subparagraph);

(ii) The test methods which will be used to test for these parameters;

(iii) The sampling method which will be used to obtain a representative sample of the waste to be analyzed. A representative sample may be obtained using either:

(I) One of the sampling methods described in Appendix I of Rule 0400-12-01-.02; or

(II) An equivalent sampling method.

(Comment: See Rule 0400-12-01-.01(3)(b) for related discussion.)

(iv) The frequency with which the initial analysis of the waste will be reviewed or repeated to ensure that the analysis is accurate and up to date;

(v) For off-site facilities, the waste analyses that hazardous waste generators have agreed to supply; and

(vi) Where applicable, the methods that will be used to meet the additional waste analysis requirements for specific waste management methods as specified in subparagraphs (10)(k), (11)(g), (12)(c), (13)(d), (14)(o), (15)(b), (16)(f), and (17)(c), parts (27)(e)4, and (28)(n)4, and (29)(e) of this rule and in Rule 0400-12-01-.10(1)(g).

(vii) For surface impoundments exempted from land disposal restrictions under Rule 0400-12-01-.10(1)(d)1, the procedures and schedule for:

(I) The sampling of impoundment contents;

(II) The analysis of test data; and,

(III) The annual removal of residues which are not delisted under Rule 0400-12-01-.01(3)(c) or which exhibit a characteristic of hazardous waste and either:

I. Do not meet applicable treatment standards of Rule 0400-12-01-.10(3); or

II. Where no treatment standards have been established,

A. Such residues are prohibited from land disposal under Rule 0400-12-01-.10(2)(c); or

B. (Reserved)

(viii) For owners and operators seeking an exemption to the air emission standards of paragraph (29) of this rule in accordance with subparagraph (29)(d) of this rule.

(I) If direct measurement is used for the waste determination, the procedures and schedules for waste sampling and analysis, and the results of the analysis of test data to verify the exemption.

(II) If knowledge of the waste is used for the waste determination, any information prepared by the facility owner or operator or by the generator of the hazardous waste, if the waste is received from off-site, that is used as the basis for knowledge of the waste.

3. For off-site facilities, the waste analysis plan required in part 2 of this subparagraph must also specify the procedures which will be used to inspect and, if necessary, analyze each movement of hazardous waste received at the facility to ensure that it matches the identity of the waste designated on the accompanying manifest or shipping paper. At a minimum, the plan must describe:

(i) The procedures which will be used to determine the identity of each movement of waste managed at the facility; and

(ii) The sampling method which will be used to obtain a representative sample of the waste to be identified, if the identification method includes sampling.

(iii) The procedures that the owner or operator of an off-site landfill receiving containerized hazardous waste will use to determine whether a hazardous waste generator or treater has added a biodegradable sorbent to the waste in the container.

4. As part of the waste stream analysis for each hazardous waste handled at the facility, the facility operator shall determine the appropriate waste codes to be used when recording and reporting shipments of such waste received as per subparagraphs (5)(d) and (5)(f) of this rule. If the waste was generated in this state, the facility operator shall obtain the appropriate waste codes from the generator at the time of initiating management of the waste. If the waste was generated in another state, the facility operator shall obtain and use the EPA Hazardous Waste Codes (from Rule 0400-12-01-.02) which apply to the waste.

(e) Security [40 CFR 265.14]

1. The owner or operator must prevent the unknowing entry, and minimize the possibility for the unauthorized entry, of persons or livestock onto the active portion of his facility, unless:

(i) Physical contact with the waste, structures, or equipment with the active portion

of the facility will not injure unknowing or unauthorized persons or livestock which may enter the active portion of a facility, and

(ii) Disturbance of the waste or equipment, by the unknowing or unauthorized entry of persons or livestock onto the active portion of a facility, will not cause a violation of the requirements of this part.

2. Unless exempt under subparts 1(i) and (ii) of this subparagraph, a facility must have:

(i) A 24-hour surveillance system (e.g., television monitoring or surveillance by guards or facility personnel) which continuously monitors and controls entry onto the active portion of the facility; or

(ii) (I) An artificial or natural barrier (e.g., a fence in good repair or a fence combined with a cliff), which completely surrounds the active portion of the facility; and

(II) A means to control entry, at all times, through the gates or other entrances to the active portion of the facility (e.g., an attendant, television monitors, locked entrance, or controlled roadway access to the facility).

(Comment: The requirements of this part are satisfied if the facility or plant within which the active portion is located itself has a surveillance system, or a barrier and a means to control entry, which complies with the requirements of subparts (i) and (ii) of this part.)

3. Unless exempt under subparts 1(i) and (ii) of this subparagraph, a sign with the legend, "Danger -- Unauthorized Personnel Keep Out," must be posted at each entrance to the active portion of a facility, and at other locations, in sufficient numbers to be seen from any approach to this active portion. The legend must be written in English and in any other language predominant in the area surrounding the facility (e.g., facilities in counties bordering the Canadian province of Quebec must post signs in French; facilities in counties bordering Mexico must post signs in Spanish), and must be legible from a distance of at least 25 feet. Existing signs with a legend other than "Danger -- Unauthorized Personnel Keep Out" may be used if the legend on the sign indicates that only authorized personnel are allowed to enter the active portion, and that entry onto the active portion can be dangerous.

(Comment: See part (7)(h)2 of this rule for discussion of security requirements at disposal facilities during the post-closure care period.)

(f) General Inspection Requirements [40 CFR 265.15]

1. The owner or operator must inspect his facility for malfunctions and deterioration, operator errors, and discharges which may be causing -- or may lead to:

(i) Release of hazardous waste constituents to the environment or

(ii) A threat to human health. The owner or operator must conduct these inspections often enough to identify problems in time to correct them before they harm human health or the environment.

2. (i) The owner or operator must develop and follow a written schedule for inspecting all monitoring equipment, safety and emergency equipment, security devices, and operating and structural equipment (such as dikes and sump pumps) that are important to preventing, detecting, or responding to environmental or human health hazards.

(ii) He must keep this schedule at the facility.

(iii) The schedule must identify the types of problems (e.g., malfunctions or deterioration) which are to be looked for during the inspection (e.g., inoperative sump pump, leaking fitting, eroding dike, etc.).

(iv) The frequency of inspection may vary for the items on the schedule. However, the frequency should be based on the rate of deterioration of the equipment and the probability of an environmental or human health incident if the deterioration, malfunction, or operator error goes undetected between inspections. Areas subject to spills, such as loading and unloading areas, must be inspected daily when in use. At a minimum, the inspection schedule must include the items and frequencies called for in subparagraphs (9)(e), (10)(d), (10)(f), (11)(h), (12)(k), (13)(i), (14)(e), (15)(h), (16)(h), (17)(d), (23)(e), (27)(d), (28)(c), (28)(d), (28)(i),and (29)(e) through (29)(k) of this rule, where applicable.

(v) (Reserved)

3. The owner or operator must remedy any deterioration or malfunction of equipment or structures which the inspection reveals on a schedule which ensures that the problem does not lead to an environmental or human health hazard. Where a hazard is imminent or has already occurred, remedial action must be taken immediately.

4. The owner or operator must record inspections in an inspection log or summary. He must keep these records for at least three years from the date of inspection. At a minimum, these records must include the date and time of the inspection, the name of the inspector, a notation of the observations made, and the date and nature of any repairs or other remedial actions.

(g) Personnel Training [40 CFR 265.16]

1. (i) Facility personnel must successfully complete a program of classroom instruction or on-the-job training that teaches them to perform their duties in a way that ensures the facility's compliance with the requirements of this rule. The owner or operator must ensure that this program includes all the elements described in the document required under subpart 4(iii) of this subparagraph.

(ii) This program must be directed by a person trained in hazardous waste management procedures, and must include instruction which teaches facility personnel hazardous waste management procedures (including contingency plan implementation) relevant to the positions in which they are employed.

(iii) At a minimum, the training program must be designed to ensure that facility personnel are able to respond effectively to emergencies by familiarizing them with emergency procedures, emergency equipment, and emergency systems, including where applicable:

(I) Procedures for using, inspecting, repairing, and replacing facility emergency and monitoring equipment;

(II) Key parameters for automatic waste feed cut-off systems;

(III) Communications or alarm systems;

(IV) Response to fires or explosions;

(V) Response to ground-water contamination incidents; and

(VI) Shutdown of operations.

(iv) For facility employees that receive emergency response training pursuant to

Occupational Safety and Health Administration (OSHA) regulations 29 CFR 1910.120(p)(8) and 1910.120(q), the facility is not required to provide separate emergency response training pursuant to this subparagraph, provided the overall facility training meets all the requirements of this subparagraph.

2. Facility personnel must successfully complete the program required in part 1 of this subparagraph within six months after the effective date of these regulations or six months after the date of their employment or assignment to a facility, or to a new position at a facility, whichever is later. Employees hired after the effective date of these regulations must not work in unsupervised positions until they have completed the training requirements of part 1 of this subparagraph.

3. Facility personnel must take part in an annual review of the initial training required in part 1 of this subparagraph.

4. The owner or operator must maintain the following documents and records at the facility:

   (i) The job title for each position at the facility related to hazardous waste management, and the name of the employee filling each job;

   (ii) A written job description for each position listed under subpart (i) of this part. This description may be consistent in its degree of specificity with descriptions for other similar positions in the same company location or bargaining unit, but must include the requisite skill, education, or other qualifications, and duties of facility personnel assigned to each position;

   (iii) A written description of the type and amount of both introductory and continuing training that will be given to each person filling a position listed under subpart (i) of this part;

   (iv) Records that document that the training or job experience required under parts 1, 2, and 3 of this subparagraph has been given to, and completed by, facility personnel.

5. Training records on current personnel must be kept until closure of the facility. Training records on former employees must be kept for at least three years from the date the employee last worked at the facility. Personnel training records may accompany personnel transferred within the same company.

(h) General Requirements for Ignitable, Reactive, or Incompatible Wastes [40 CFR 265.17]

1. The owner or operator must take precautions to prevent accidental ignition or reaction of ignitable or reactive waste. This waste must be separated and protected from sources of ignition or reaction including but not limited to: Open flames, smoking, cutting and welding, hot surfaces, frictional heat, sparks (static, electrical, or mechanical), spontaneous ignition (e.g., from heat-producing chemical reactions), and radiant heat. While ignitable or reactive waste is being handled, the owner or operator must confine smoking and open flame to specially designated locations. "No Smoking" signs must be conspicuously placed wherever there is a hazard from ignitable or reactive waste.

2. Where specifically required by other subparagraphs of this rule, the treatment, storage, or disposal of ignitable or reactive waste, and the mixture or commingling of incompatible wastes, or incompatible wastes and materials, must be conducted so that it does not:

   (i) Generate extreme heat or pressure, fire or explosion, or violent reaction;

   (ii) Produce uncontrolled toxic mists, fumes, dusts, or gases in sufficient quantities to threaten human health;

(iii) Produce uncontrolled flammable fumes or gases in sufficient quantities to pose a risk of fire or explosions;

(iv) Damage the structural integrity of the device or facility containing the waste; or

(v) Through other like means threaten human health or the environment.

(i) Location Standards [40 CFR 265.18]

The placement of any hazardous waste in a salt dome, salt bed formation, underground mine or cave is prohibited.

(j) Construction Quality Assurance Program [40 CFR 265.19]

1. CQA Program

(i) A construction quality assurance (CQA) program is required for all surface impoundment, waste pile, and landfill units that are required to comply with part (11)(b)1, subparagraph (12)(e), and part (14)(b)1. The program must ensure that the constructed unit meets or exceeds all design criteria and specifications in the permit. The program must be developed and implemented under the direction of a CQA officer who is a registered professional engineer.

(ii) The CQA program must address the following physical components, where applicable:

(I) Foundations;

(II) Dikes;

(III) Low-permeability soil liners;

(IV) Geomembranes (flexible membrane liners);

(V) Leachate collection and removal systems and leak detection systems; and

(VI) Final cover systems.

2. Written CQA Plan

Before construction begins on a unit subject to the CQA program under part 1 of this subparagraph, the owner or operator must develop a written CQA plan. The plan must identify steps that will be used to monitor and document the quality of materials and the condition and manner of their installation. The CQA plan must include:

(i) Identification of applicable units, and a description of how they will be constructed.

(ii) Identification of key personnel in the development and implementation of the CQA plan, and CQA officer qualifications.

(iii) A description of inspection and sampling activities for all unit components identified in subpart 1(ii) of this subparagraph, including observations and tests that will be used before, during, and after construction to ensure that the construction materials and the installed unit components meet the design specifications. The description must cover: Sampling size and locations; frequency of testing; data evaluation procedures; acceptance and rejection criteria for construction materials; plans for implementing corrective measures;

and data or other information to be recorded and retained in the operating record under subparagraph (5)(d) of this rule.

3. Contents of Program

(i) The CQA program must include observations, inspections, tests, and measurements sufficient to ensure:

(I) Structural stability and integrity of all components of the unit identified in subpart 1(ii) of this subparagraph;

(II) Proper construction of all components of the liners, leachate collection and removal system, leak detection system, and final cover system, according to permit specifications and good engineering practices, and proper installation of all components (e.g., pipes) according to design specifications;

(III) Conformity of all materials used with design and other material specifications under subparagraphs (11)(b), (12)(b), and (14)(b) of Rule 0400-12-01-.06.

(ii) The CQA program shall include test fills for compacted soil liners, using the same compaction methods as in the full-scale unit, to ensure that the liners are constructed to meet the hydraulic conductivity requirements of subparts (11)(b)3(i), (12)(b)3(i), and (14)(b)3(i) of Rule 0400-12-01-.06 in the field. Compliance with the hydraulic conductivity requirements must be verified by using in-situ testing on the constructed test fill. The test fill requirement is waived where data are sufficient to show that a constructed soil liner meets the hydraulic conductivity requirements of subparts (11)(b)3(i), (12)(b)3(i), and (14)(b)3(i) of Rule 0400-12-01-.06 in the field.

4. Certification

The owner or operator of units subject to this subparagraph must submit to the Commissioner by certified mail or hand delivery, at least 30 days prior to receiving waste, a certification signed by the CQA officer that the CQA plan has been successfully carried out and that the unit meets the requirements of part (11)(b)1, subparagraph (12)(e), or part (14)(b)1 of this rule. The owner or operator may receive waste in the unit after 30 days from the Commissioner's receipt of the CQA certification unless the Commissioner determines in writing that the construction is not acceptable, or extends the review period for a maximum of 30 more days, or seeks additional information from the owner or operator during this period. Documentation supporting the CQA officer's certification must be furnished to the Commissioner upon request.

(k) Co-management of Other Materials

The owner or operator may not treat, store, or dispose of other wastes or other materials along with hazardous wastes in hazardous waste management units subject to the requirements of this rule unless:

1. The other waste or other material is labeled, marked, or otherwise clearly identifiable as to what it is;

2. The owner or operator is able to demonstrate that the other waste or other material is not a hazardous waste; and

3. The other waste or other material is managed in a manner that does not adversely impact compliance with the standards of this rule.

(3) Preparedness and Prevention [40 CFR 265 Subpart C]

(a) Applicability [40 CFR 265.30]

The regulations in this subpart apply to owners and operators of all hazardous waste facilities, except as subparagraph (1)(b) of this rule provides otherwise.

(b) Maintenance and Operation of Facility [40 CFR 265.31]

Facilities must be maintained and operated to minimize the possibility of a fire, explosion, or any unplanned sudden or non-sudden release of hazardous waste or hazardous waste constituents to air, soil, or surface water which could threaten human health or the environment.

(c) Required Equipment [40 CFR 265.32]

All facilities must be equipped with the following, unless none of the hazards posed by waste handled at the facility could require a particular kind of equipment specified below:

1. An internal communications or alarm system capable of providing immediate emergency instruction (voice or signal) to facility personnel;

2. A device, such as a telephone (immediately available at the scene of operations) or a hand-held two-way radio, capable of summoning emergency assistance from local police departments, fire departments, or State or local emergency response teams;

3. Portable fire extinguishers, fire control equipment (including special extinguishing equipment, such as that using foam, inert gas, or dry chemicals), spill control equipment, and decontamination equipment; and

4. Water at adequate volume and pressure to supply water hose streams, or foam producing equipment, or automatic sprinklers, or water spray systems.

(d) Testing and Maintenance of Equipment [40 CFR 265.33]

All facility communications or alarm systems, fire protection equipment, spill control equipment, and decontamination equipment, where required, must be tested and maintained as necessary to assure its proper operation in time of emergency.

(e) Access to Communications or Alarm System [40 CFR 265.34]

1. Whenever hazardous waste is being poured, mixed, spread, or otherwise handled, all personnel involved in the operation must have immediate access to an internal alarm or emergency communication device, either directly or through visual or voice contact with another employee, unless such a device is not required under subparagraph (c) of this paragraph.

2. If there is ever just one employee on the premises while the facility is operating, he must have immediate access to a device, such as a telephone (immediately available at the scene of operation) or a hand-held two-way radio, capable of summoning external emergency assistance, unless such a device is not required under subparagraph (c) of this paragraph.

(f) Required Aisle Space [40 CFR 265.35]

The owner or operator must maintain aisle space to allow the unobstructed movement of personnel, fire protection equipment, spill control equipment, and decontamination equipment to any area of facility operation in an emergency, unless aisle space is not needed for any of these purposes.

(g) (RESERVED) [40 CFR 265.36]

(h) Arrangements with Local Authorities [40 CFR 265.37]

1. The owner or operator must attempt to make the following arrangements, as appropriate for the type of waste handled at his facility and the potential need for the services of these organizations:

(i) Arrangements to familiarize police, fire departments, and emergency response teams with the layout of the facility, properties of hazardous waste handled at the facility and associated hazards, places where facility personnel would normally be working, entrances to roads inside the facility, and possible evacuation routes;

(ii) Where more than one police and fire department might respond to an emergency, agreements designating primary emergency authority to a specific police and a specific fire department, and agreements with any others to provide support to the primary emergency authority;

(iii) Agreements with State emergency response teams, emergency response contractors, and equipment suppliers; and

(iv) Arrangements to familiarize local hospitals with the properties of hazardous waste handled at the facility and the types of injuries or illnesses which could result from fires, explosions, or releases at the facility.

2. Where State or local authorities decline to enter into such arrangements, the owner or operator must document the refusal in the operating record.

(4) Contingency Plan and Emergency Procedures [40 CFR 265 Subpart D]

(a) Applicability [40 CFR 265.50]

The regulations in this subpart apply to owners and operators of all hazardous waste facilities, except as subparagraph (1)(b) of this rule provides otherwise.

(b) Purpose and Implementation of Contingency Plan [40 CFR 265.51]

1. Each owner or operator must have a contingency plan for his facility. The contingency plan must be designed to minimize hazards to human health or the environment from fires, explosions, or any unplanned sudden or non-sudden release of hazardous waste or hazardous waste constituents to air, soil, or surface water.

2. The provisions of the plan must be carried out immediately whenever there is a fire, explosion, or release of hazardous waste or hazardous waste constituents which could threaten human health or the environment.

(c) Content of Contingency Plan [40 CFR 265.52]

1. The contingency plan must describe the actions facility personnel must take to comply with subparagraphs (b) and (g) of this paragraph in response to fires, explosions, or any unplanned sudden or non-sudden release of hazardous waste or hazardous waste constituents to air, soil, or surface water at the facility.

2. If the owner or operator has already prepared a Spill Prevention, Control, and Countermeasures (SPCC) Plan in accordance with 40 CFR 112, or some other emergency or contingency plan, he need only amend that plan to incorporate hazardous waste management provisions that are sufficient to comply with the requirements of this paragraph. The owner or operator may develop one contingency plan which meets all regulatory requirements. The Department recommends that the plan be based on the

National Response Team's Integrated Contingency Plan Guidance ("One Plan"). When modifications are made to non-RCRA provisions in an integrated contingency plan, the changes do not trigger the need for a RCRA permit modification.

3. The plan must describe arrangements agreed to by local police departments, fire departments, hospitals, contractors, and State and local emergency response teams to coordinate emergency services, pursuant to subparagraph (3)(h) of this rule.

4. The plan must list names, addresses, and phone numbers (office and home) of all persons qualified to act as emergency coordinator (see subparagraph (f) of this paragraph), and this list must be kept up to date. Where more than one person is listed, one must be named as primary emergency coordinator and others must be listed in the order in which they will assume responsibility as alternates.

5. The plan must include a list of all emergency equipment at the facility (such as fire extinguishing systems, spill control equipment, communications and alarm systems (internal and external), and decontamination equipment), where this equipment is required. This list must be kept up to date. In addition, the plan must include the location and a physical description of each item on the list, and a brief outline of its capabilities.

6. The plan must include an evacuation plan for facility personnel where there is a possibility that evacuation could be necessary. This plan must describe signal(s) to be used to begin evacuation, evacuation routes, and alternate evacuation routes (in cases where the primary routes could be blocked by releases of hazardous waste or fires).

(d) Copies of Contingency Plan [40 CFR 265.53]

A copy of the contingency plan and all revisions to the plan must be:

1. Maintained at the facility; and

2. Submitted to all local police departments, fire departments, hospitals, and State and local emergency response teams that may be called upon to provide emergency services.

(e) Amendment of Contingency Plan [40 CFR 265.54]

The contingency plan must be reviewed, and immediately amended, if necessary, whenever:

1. Applicable regulations are revised;

2. The plan fails in an emergency;

3. The facility changes -- in its design, construction, operation, maintenance, or other circumstances -- in a way that materially increases the potential for fires, explosions, or releases of hazardous waste or hazardous waste constituents, or changes the response necessary in an emergency;

4. The list of emergency coordinators changes; or

5. The list of emergency equipment changes.

(f) Emergency Coordinator [40 CFR 265.55]

At all times, there must be at least one employee either on the facility premises or on call (i.e., available to respond to an emergency by reaching the facility within a short period of time) with the responsibility for coordinating all emergency response measures. This emergency coordinator must be thoroughly familiar with all aspects of the facility's contingency plan, all operations and activities at the facility, the location and characteristics of waste handled, the location of all records within the facility, and the facility layout. In addition, this person must have the authority to

commit the resources needed to carry out the contingency plan.

(Comment: The emergency coordinator's responsibilities are more fully spelled out in subparagraph (g) of this paragraph. Applicable responsibilities for the emergency coordinator vary, depending on factors such as type and variety of waste(s) handled by the facility, and type and complexity of the facility.)

(g) Emergency Procedures [40 CFR 265.56]

1. Whenever there is an imminent or actual emergency situation, the emergency coordinator (or his designee when the emergency coordinator is on call) must immediately:

   (i) Activate internal facility alarms or communication systems, where applicable, to notify all facility personnel; and

   (ii) Notify appropriate State or local agencies with designated response roles if their help is needed.

2. Whenever there is a release, fire, or explosion, the emergency coordinator must immediately identify the character, exact source, amount, and areal extent of any released materials. He may do this by observation or review of facility records or manifests and, if necessary, by chemical analysis.

3. Concurrently, the emergency coordinator must assess possible hazards to human health or the environment that may result from the release, fire, or explosion. This assessment must consider both direct and indirect effects of the release, fire, or explosion (e.g., the effects of any toxic, irritating, or asphyxiating gases that are generated, or the effects of any hazardous surface water run-offs from water or chemical agents used to control fire and heat-induced explosions).

4. If the emergency coordinator determines that the facility has had a release, fire, or explosion which could threaten human health, or the environment, outside the facility, he must report his findings as follows:

   (i) If his assessment indicates that evacuation of local areas may be advisable, he must immediately notify appropriate local authorities. He must be available to help appropriate officials decide whether local areas should be evacuated; and

   (ii) He must immediately notify either the Tennessee Emergency Management Agency (using their 24-hour toll-free number 800/262-3300) and/or the National Response Center (using their 24-hour toll free number 800/424-8802). The report must include:

      (I) Name and telephone number of reporter;

      (II) Name and address of facility;

      (III) Time and type of incident (e.g., release, fire);

      (IV) Name and quantity of material(s) involved, to the extent known;

      (V) The extent of injuries, if any; and

      (VI) The possible hazards to human health, or the environment, outside the facility.

5. During an emergency, the emergency coordinator must take all reasonable measures necessary to ensure that fires, explosions, and releases do not occur, recur, or spread to

other hazardous waste at the facility. These measures must include, where applicable, stopping processes and operations, collecting and containing released waste, and removing or isolating containers.

6. If the facility stops operations in response to a fire, explosion or release, the emergency coordinator must monitor for leaks, pressure buildup, gas generation, or ruptures in valves, pipes, or other equipment, wherever this is appropriate.

7. Immediately after an emergency, the emergency coordinator must provide for treating, storing, or disposing of recovered waste, contaminated soil or surface water, or any other material that results from a release, fire, or explosion at the facility.

   (Comment: Unless the owner or operator can demonstrate, in accordance with Rule 0400-12-01-.02(1)(c)3 or 4, that the recovered material is not a hazardous waste, the owner or operator becomes a generator of hazardous waste and must manage it in accordance with all applicable requirements of Rule 0400-12-01-.03, .04, and this rule.)

8. The emergency coordinator must ensure that, in the affected area(s) of the facility:

   (i) No waste that may be incompatible with the released material is treated, stored, or disposed of until cleanup procedures are completed; and

   (ii) All emergency equipment listed in the contingency plan is cleaned and fit for its intended use before operations are resumed.

9. The owner or operator must note in the operating record the time, date, and details of any incident that requires implementing the contingency plan. Within 15 days after the incident, he must submit a written report on the incident to the Commissioner. The report must include:

   (i) Name, address, and telephone number of the owner or operator;

   (ii) Name, address, and telephone number of the facility;

   (iii) Date, time, and type of incident (e.g., fire, explosion);

   (iv) Name and quantity of material(s) involved;

   (v) The extent of injuries, if any;

   (vi) An assessment of actual or potential hazards to human health or the environment, where this is applicable; and

   (vii) Estimated quantity and disposition of recovered material that resulted from the incident.

(5) Manifest System, Recordkeeping, and Reporting [40 CFR 265 Subpart E except 265.75]

(a) Applicability [40 CFR 265.70]

1. The regulations in this paragraph apply to owners and operators of both on-site and off-site facilities, except as subparagraph (1)(a) of this rule provides otherwise. Subparagraphs (b), (c), and (g) of this paragraph do not apply to owners and operators of on-site facilities that do not receive any hazardous waste from off-site sources, nor to owners and operators of off-site facilities with respect to waste military munitions exempted from manifest requirements under part (13)(d)1 of Rule 0400-12-01-.09.

2. The revised Manifest form and procedures in subparagraphs (2)(a) of Rule 0400-12-01-.01, (1)(g) of Rule 0400-12-01-.02, and subparagraphs (a), (b), (c) and (g) of this

paragraph shall become effective September 5, 2006.

(b) Use of Manifest System [40 CFR 265.71]

1. (i) If a facility receives hazardous waste accompanied by a manifest, the owner, operator or his/her agent must sign and date the manifest as indicated in subpart (ii) of this part to certify that the hazardous waste covered by the manifest was received, that the hazardous waste was received except as noted in the discrepancy space of the manifest, or that the hazardous waste was rejected as noted in the manifest discrepancy space.

(ii) If a facility receives a hazardous waste shipment accompanied by a manifest, the owner, operator or his/her agent must:

(I) Sign and date, by hand, each copy of the manifest;

(II) Note any discrepancies (as defined in part (c)1 of this paragraph) on each copy of the manifest;

(Comment: The Department does not intend that the owner or operator of a facility whose procedures under part (2)(d)3 of this rule include waste analysis must perform that analysis before signing the manifest and giving it to the transporter. Part (c)2 of this paragraph, however, requires reporting an unreconciled discrepancy discovered during later analysis.)

(III) Immediately give the transporter at least one copy of the manifest;

(IV) Within 30 days of delivery, send a copy of the manifest to the generator; and

(V) Retain at the facility a copy of each manifest for at least three years from the date of delivery.

(iii) If a facility receives hazardous waste imported from a foreign source, the receiving facility must mail a copy of the manifest and documentation confirming EPA's consent to the import of hazardous waste to the following address within thirty (30) days of delivery: Office of Enforcement and Compliance Assurance, Office of Federal Activities, International Compliance Assurance Division, OFA/OECA (2254A), U.S. Environmental Protection Agency, Ariel Rios Building, 1200 Pennsylvania Avenue, NW., Washington, DC 20460.

2. If a facility receives, from a rail or water (bulk shipment) transporter, hazardous waste which is accompanied by a shipping paper containing all the information required on the manifest (excluding the Installation Identification Numbers, generator's certification, and signatures), the owner or operator, or his agent, must:

(i) Sign and date each copy of the manifest or shipping paper (if the manifest has not been received) to certify that the hazardous waste covered by the manifest or shipping paper was received;

(ii) Note any significant discrepancies (as defined in part (c)1 of this paragraph) in the manifest or shipping paper (if the manifest has not been received) on each copy of the manifest or shipping paper;

(Comment: The Department does not intend that the owner or operator of a facility whose procedures under part (2)(d)3 of this rule include waste analysis must perform that analysis before signing the shipping paper and giving it to the transporter. Part (c)2 of this paragraph, however, requires reporting an unreconciled discrepancy discovered during later analysis.)

(iii) Immediately give the rail or water (bulk shipment) transporter at least one copy of the manifest or shipping paper (if the manifest has not been received);

(iv) Within 30 days after the delivery, send a copy of the signed and dated manifest or a signed and dated copy of the shipping paper (if the manifest has not been received within 30 days after delivery) to the generator; and

(Comment: Rule 0400-12-01-.02(3)(d)3 requires the generator to send three copies of the manifest to the facility when hazardous waste is sent by rail or water (bulk shipment).)

(v) Retain at the facility a copy of the manifest and shipping paper (if signed in lieu of the manifest at the time of delivery) for at least three years from the date of delivery.

3. Whenever a shipment of hazardous waste is initiated from a facility, the owner or operator of that facility must comply with the requirements of Rule 0400-12-01-.03.

(Comment: The provisions of Rule 0400-12-01-.03(4)(e) are applicable to the on-site accumulation of hazardous wastes by generators. Therefore, the provisions of Rule 0400-12-01-.03(4)(e) only apply to owners or operators who are shipping hazardous waste which they generated at that facility.)

4. Within three (3) working days of the receipt of a shipment subject to 40 CFR Part 262, Subpart H, the owner or operator of a facility must provide a copy of the movement document bearing all required signatures to the exporter, to the Office of Enforcement and Compliance Assurance, Office of Federal Activities, International Compliance Assurance Division (2254A), Environmental Protection Agency, 1200 Pennsylvania Avenue, NW., Washington, DC 20460, and to competent authorities of all other countries concerned. The original copy of the movement document must be maintained at the facility for at least three (3) years from the date of signature.

5. A facility must determine whether the consignment state for a shipment regulates any additional wastes (beyond those regulated federally) as hazardous wastes under its state hazardous waste program. Facilities must also determine whether the consignment state or generator state requires the facility to submit any copies of the manifest to these states.

(c) Manifest Discrepancies [40 CFR 265.72]

1. Manifest discrepancies are:

(i) Significant differences (as defined by part 2 of this subparagraph) between the quantity or type of hazardous waste designated on the manifest or shipping paper, and the quantity and type of hazardous waste a facility actually receives;

(ii) Rejected wastes, which may be a full or partial shipment of hazardous waste that the TSDF cannot accept; or

(iii) Container residues, which are residues that exceed the quantity limits for "empty" containers set forth in Rule 0400-12-01-.02(1)(g)(2).

2. Significant differences in quantity are: For bulk waste, variations greater than 10 percent in weight; for batch waste, any variation in piece count, such as a discrepancy of one drum in a truckload. Significant differences in type are obvious differences which can be discovered by inspection or waste analysis, such as waste solvent substituted for waste acid, or toxic constituents not reported on the manifest or shipping paper.

3. Upon discovering a significant difference in quantity or type, the owner or operator must attempt to reconcile the discrepancy with the waste generator or transporter (e.g., with telephone conversations). If the discrepancy is not resolved within 15 days after receiving the waste, the owner or operator must immediately submit to the Commissioner a letter describing the discrepancy and attempts to reconcile it, and a copy of the manifest or shipping paper at issue.

4. (i) Upon rejecting waste or identifying a container residue that exceeds the quantity limits for "empty" containers set forth in Rule 0400-12-01-.02(1)(g)2, the facility must consult with the generator prior to forwarding the waste to another facility that can manage the waste. If it is impossible to locate an alternative facility that can receive the waste, the facility may return the rejected waste or residue to the generator. The facility must send the waste to the alternative facility or to the generator within 60 days of the rejection or the container residue identification.

(ii) While the facility is making arrangements for forwarding rejected wastes or residues to another facility under this subparagraph, it must ensure that either the delivering transporter retains custody of the waste, or the facility must provide for secure, temporary custody of the waste, pending delivery of the waste to the first transporter designated on the manifest prepared under part 5 or 6 of this subparagraph.

5. Except as provided in subpart (vii) of this part, for full or partial load rejections and residues that are to be sent off-site to an alternate facility, the facility is required to prepare a new manifest in accordance with Rule 0400-12-01-.03(3)(a) and the following instructions:

(i) Write the generator's Installation Identification Number in Item 1 of the new manifest. Write the generator's name and mailing address in Item 5 of the new manifest. If the mailing address is different from the generator's site address, then write the generator's site address in the designated space in Item 5.

(ii) Write the name of the alternate designated facility and the facility's Installation Identification Number in the designated facility block (Item 8) of the new manifest.

(iii) Copy the Manifest Tracking Number found in Item 4 of the old manifest to the Special Handling and Additional Information Block of the new manifest, and indicate that the shipment is a residue or rejected waste from the previous shipment.

(iv) Copy the Manifest Tracking Number found in Item 4 of the new manifest to the manifest reference number line in the Discrepancy Block of the old manifest (Item 18a).

(v) Write the DOT description for the rejected load or the residue in Item 9 (U.S. DOT Description) of the new manifest and write the container types, quantity, and volume(s) of waste.

(vi) Sign the Generator's/Offeror's Certification to certify, as the offeror of the shipment, that the waste has been properly packaged, marked and labeled and is in proper condition for transportation, and mail a signed copy of the manifest to the generator identified in Item 5 of the new manifest.

(vii) For full load rejections that are made while the transporter remains present at the facility, the facility may forward the rejected shipment to the alternate facility by completing Item 18b of the original manifest and supplying the information on the next destination facility in the Alternate Facility space. The facility must retain a copy of this manifest for its records, and then give the remaining copies of the manifest to the transporter to accompany the shipment. If the original manifest is

not used, then the facility must use a new manifest and comply with subparts (i), (ii), (iii), (iv), (v), and (vi) of this part.

6. Except as provided in subpart (vii) of this part, for rejected wastes and residues that must be sent back to the generator, the facility is required to prepare a new manifest in accordance with Rule 0400-12-01-.03(3)(a) and the following instructions:

(i) Write the facility's Installation Identification Number in Item 1 of the new manifest. Write the "facility's name and mailing address in Item 5 of the new manifest. If the mailing address is different from the facility's site address, then write the facility's site address in the designated space for Item 5 of the new manifest.

(ii) Write the name of the initial generator and the generator's Installation Identification Number in the designated facility block (Item 8) of the new manifest.

(iii) Copy the manifest tracking number found in Item 4 of the old manifest to the Special Handling and Additional Information Block of the new manifest, and indicate that the shipment is a residue or rejected waste from the previous shipment.

(iv) Copy the manifest tracking number found in Item 4 of the new manifest to the manifest reference number line in the Discrepancy Block of the old manifest (Item 18a).

(v) Write the DOT description for the rejected load or the residue in Item 9 (U.S. DOT Description) of the new manifest and write the container types, quantity, and volume(s) of waste.

(vi) Sign the Generator's/Offeror's Certification to certify, as offeror of the shipment, that the waste has been properly packaged, marked and labeled and is in proper condition for transportation.

(vii) For full load rejections that are made while the transporter remains at the facility, the facility may return the shipment to the generator with the original manifest by completing Item 18a and 18b of the manifest and supplying the generator's information in the Alternate Facility space. The facility must retain a copy for its records and then give the remaining copies of the manifest to the transporter to accompany the shipment. If the original manifest is not used, then the facility must use a new manifest and comply with subparts (i), (ii), (iii), (iv), (v), (vi) and (viii) of this part.

(viii) For full or partial load rejections and container residues contained in non-empty containers that are returned to the generator, the facility must also comply with the exception reporting requirements in Rule 0400-12-01-.03(5)(c)1.

7. If a facility rejects a waste or identifies a container residue that exceeds the quantity limits for "empty" containers set forth in part (1)(g)2 of Rule 0400-12-01-.02 after it has signed, dated, and returned a copy of the manifest to the delivering transporter or to the generator, the facility must amend its copy of the manifest to indicate the rejected wastes or residues in the discrepancy space of the amended manifest. The facility must also copy the manifest tracking number from Item 4 of the new manifest to the discrepancy space of the amended manifest, and must re-sign and date the manifest to certify to the information as amended. The facility must retain the amended manifest for at least three years from the date of amendment, and must within 30 days, send a copy of the amended manifest to the transporter and generator that received copies prior to their being amended.

(d) Operating Record [40 CFR 265.73]

1. The owner or operator must keep a written operating record at his facility.

2. The following information must be recorded, as it becomes available, and maintained in the operating record for five (5) years unless noted below:

(i) A description and the quantity of each hazardous waste received, and the method(s) and date(s) of its treatment, storage, or disposal at the facility as required by Appendix I of paragraph (53) of this rule. This information must be maintained in the operating record until closure of the facility;

(ii) The location of each hazardous waste within the facility and the quantity at each location. For disposal facilities, the location and quantity of each hazardous waste must be recorded on a map or diagram of each cell or disposal area. For all facilities, this information must include cross-references to manifest document numbers if the waste was accompanied by a manifest. This information must be maintained in the operating record until closure of the facility;

(Comment: See subparagraphs (7)(j), (13)(j), and (14)(j) of this rule for related requirements.)

(iii) Records and results of waste analysis, waste determinations, and trial tests performed as specified in subparagraphs (2)(d), (10)(k), (11)(g), (12)(c), (13)(d), (14)(o), (15)(b), (16)(f), (17)(c), (27)(e), (28)(n), and (29)(e) of this rule and in subparagraphs (1)(d) and (g) of Rule 0400-12-01-.10;

(iv) Summary reports and details of all incidents that require implementing the contingency plan as specified in part (4)(g)9 of this rule;

(v) Records and results of inspections as required by part (2)(f)4 of this rule (except these data need be kept only five (5) years);

(vi) Monitoring, testing, or analytical data and corrective action where required by paragraph (6) of this rule and by subparagraphs (2)(j), (6)(e), (10)(b), (10)(d), (10)(e), (11)(e), (11)(h), (12)(f), (12)(k), (13)(g), and (13)(i), subpart (13)(k)4(i), subparagraphs (14)(c), (14)(e), (15)(h), and (16)(h), parts (27)(e)3 through (27)(e)6, subparagraph (27)(f), parts (28)(n)4 through (28)(n)9, subparagraphs (28)(o), and (29)(d) through (29)(k) of this rule. Maintain in the operating record for five (5) years, except for records and results pertaining to ground-water monitoring and cleanup, and response action plans for surface impoundments, waste piles, and landfills, which must be maintained in the operating record until closure of the facility;

(Comment: As required by subparagraph (6)(e) of this rule, monitoring data at disposal facilities must be kept throughout the post-closure period.)

(vii) All closure cost estimates under subparagraph (8)(c) of this rule and, for disposal facilities, all post-closure cost estimates under subparagraph (8)(e) of this rule must be maintained in the operating record until closure of the facility;

(viii) Records of the quantities (and date of placement) for each shipment of hazardous waste placed in land disposal units under an extension to the effective date of any land disposal restriction granted pursuant to Rule 0400-12-01-.10(1)(e), monitoring data required pursuant to a petition under Rule 0400-12-01-.10(1)(f), or a certification under Rule 0400-12-01-.10(1)(h), and the applicable notice required by a generator under Rule 0400-12-01-.10(1)(g)1. All this information must be maintained in the operating record until closure of the facility;

(ix) For an off-site treatment facility, a copy of the notice, and the certification and demonstration if applicable, required by the generator or the owner or operator

under Rule 0400-12-01-.10(1)(g) or (h);

(x) For an on-site treatment facility, the information contained in the notice (except the manifest number), and the certification and demonstration if applicable, required by the generator or the owner or operator under Rule 0400-12-01-.10(1)(g) or (h);

(xi) For an off-site land disposal facility, a copy of the notice, and the certification and demonstration if applicable, required by the generator or the owner or operator of a treatment facility under Rule 0400-12-01-.10(1)(g) or (h);

(xii) For an on-site land disposal facility, the information contained in the notice (except the manifest number), and the certification and demonstration if applicable, required by the generator or the owner or operator of a treatment facility under Rule 0400-12-01-.10(1)(g) or (h);

(xiii) For an off-site storage facility, a copy of the notice, and the certification and demonstration if applicable, required by the generator or the owner or operator under Rule 0400-12-01-.10(1)(g) or (h); and

(xiv) For an on-site storage facility, the information contained in the notice (except the manifest number), and the certification and demonstration if applicable, required by the generator or the owner or operator of a treatment facility under Rule 0400-12-01-.10(1)(g) or (h).

(xv) Monitoring, testing, or analytical data, and corrective action where required by subparagraph (6)(a), subpart (6)(d)4(ii), and subpart (6)(d)4(v) of this rule and the certification as required by part (10)(g)6 of this rule must be maintained in the operating record until closure of the facility.

(Note: The authority for implementing 40 CFR 268.5 Procedures for Case-by-Case Extensions to an Effective Date and the authority for implementing 40 CFR 268.6 Petitions to Allow Land Disposal of a Prohibited Waste remains with the U.S. Environmental Protection Agency.)

(e) Availability, Retention, and Disposition of Records [40 CFR 265.74]

1. All records, including plans, required under this rule must be furnished upon request, and made available at all reasonable times for inspection, by any officer, employee, or representative of the Department who is duly designated by the Commissioner.

2. The retention period for all records required under this rule is extended automatically during the course of any unresolved enforcement action regarding the facility or as requested by the Commissioner.

3. A copy of records of waste disposal locations and quantities under subpart (d)2(ii) of this paragraph must be submitted to the Commissioner and local land authority upon closure of the facility (see subparagraph (7)(j) of this rule).

(f) Annual Report

The owner or operator must prepare and submit a single copy of an annual report to the Commissioner by March 1 of each year. Such reports must be submitted on forms provided by the Department, and the report forms must be completed as specified in the accompanying instructions. The annual report must cover facility activities during the previous calendar year and must include, but shall not necessarily be limited to, the following information:

1. The Installation Identification Number, name, address, and telephone number of the facility;

2. The calendar year covered by the report;

3. For each hazardous waste (Note: each waste, but not each shipment of such waste) received by the facility during the reporting year, the following:

   (i) The installation identification number of the generator of the waste; or, for imported shipments, the name and address of the foreign generator;

   (ii) A description of the waste;

   (iii) The waste code determined for use pursuant to subparagraph (2)(d) of this rule;

   (iv) The total quantity of such waste received; and

   (v) The methods by which the waste was treated, stored, or disposed of;

4. Monitoring data under items (6)(e)1(ii)(II) and (III) and subpart (6)(e)2(ii) of this rule, where required;

5. The most recent closure cost estimate under subparagraph (8)(b) of this rule and, for disposal facilities, the most recent post-closure cost estimate under subparagraph (8)(c) of this rule;

6. The certification signed by the owner or operator of the facility or his authorized representative;

7. Reserved

8. Reserved

(g) Unmanifested Waste Report [40 CFR 265.76]

1. If a facility accepts for treatment, storage, or disposal any hazardous waste from an off-site source without an accompanying manifest, or without an accompanying shipping paper as described by part (3)(a)5 of Rule 0400-12-01-.04, and if the waste is not excluded from the manifest requirement, then the owner or operator must prepare and submit a letter to the Commissioner within fifteen days after receiving the waste. The unmanifested waste report must contain the following information:

   (i) The Installation Identification Number, name, and address of the facility;

   (ii) The date the facility received the waste;

   (iii) The Installation Identification Number, name, and address of the generator and the transporter, if available;

   (iv) A description and the quantity of each unmanifested hazardous waste the facility received;

   (v) The method of treatment, storage, or disposal for each hazardous waste;

   (vi) The certification signed by the owner or operator of the facility or his authorized representative; and

   (viii) A brief explanation of why the waste was unmanifested, if known.

   (Comment: Small quantities of hazardous waste are excluded from regulation under this rule and do not require a manifest. Where a facility receives unmanifested hazardous

wastes, the Department suggests that the owner or operator obtain from each generator a certification that the waste qualifies for exclusion. Otherwise, the Department suggests that the owner or operator file an unmanifested waste report for the hazardous waste movement.)

2. (RESERVED) [40 CFR 265.76(b)]

(h) Additional Reports [40 CFR 265.77]

In addition to submitting the annual report and unmanifested waste reports described in subparagraph (f) and (g) of this paragraph, the owner or operator must also report to the Commissioner:

1. Releases, fires, and explosions as specified in part (4)(g)9 of this rule;

2. Ground-water contamination and monitoring data as specified in subparagraphs (6)(d) and (6)(e) of this rule; and

3. Facility closure as specified in subparagraph (7)(f) of this rule.

4. As otherwise required by paragraphs (27), (28) and (29) of this rule.

(6) Ground-Water Monitoring [40 CFR 265 Subpart F]

(a) Applicability [40 CFR 265.90]

1. Within one year after the effective date of these regulations, the owner or operator of a surface impoundment, landfill, or land treatment facility which is used to manage hazardous waste must implement a ground-water monitoring program capable of determining the facility's impact on the quality of ground water in the uppermost aquifer underlying the facility, except as subparagraph (1)(b) of this rule and part 3 of this subparagraph provide otherwise.

2. Except as parts 3 and 4 of this subparagraph provide otherwise, the owner or operator must install, operate, and maintain a ground-water monitoring system which meets the requirements of subparagraph (b) of this paragraph, and must comply with subparagraphs (c), (d), and (e) of this paragraph. This ground-water monitoring program must be carried out during the active life of the facility, and for disposal facilities, during the post-closure care period as well.

3. All or part of the ground-water monitoring requirements of this paragraph may be waived if the owner or operator can demonstrate that there is a low potential for migration of hazardous waste or hazardous waste constituents from the facility via the uppermost aquifer to water supply wells (domestic, industrial, or agricultural) or to surface water. This demonstration must be in writing, and must be kept at the facility. This demonstration must be certified by a qualified geologist or geotechnical engineer and must establish the following:

(i) The potential for migration of hazardous waste or hazardous waste constituents from the facility to the uppermost aquifer, by an evaluation of:

(I) A water balance of precipitation, evapotranspiration, runoff, and infiltration; and

(II) Unsaturated zone characteristics (i.e., geologic materials, physical properties, and depth to ground water); and

(ii) The potential for hazardous waste or hazardous waste constituents which enter the uppermost aquifer to migrate to a water supply well or surface water, by an

evaluation of:

(I) Saturated zone characteristics (i.e., geologic materials, physical properties, and rate of ground-water flow); and

(II) The proximity of the facility to water supply wells or surface water.

4. If an owner or operator assumes (or knows) that ground-water monitoring of indicator parameters in accordance with subparagraph (b) and (c) of this paragraph would show statistically significant increases (or decreases in the case of pH) when evaluated under part (d)2 of this paragraph, he may install, operate, and maintain an alternate ground-water monitoring system (other than the one described in subparagraph (b) and (c) of this paragraph). If the owner or operator decides to use an alternate ground-water monitoring system he must:

(i) Within one year after the effective date of these regulations, develop a specific plan, certified by a qualified geologist or geotechnical engineer, which satisfies the requirements of subpart (d)4(iii) of this paragraph, for an alternate ground-water monitoring system. This plan is to be placed in the facility's operating record and maintained until closure of the facility;

(ii) Not later than one year after the effective date of these regulations, initiate the determinations specified in subpart (d)4(iv) of this paragraph;

(iii) Prepare a report in accordance with subpart (d)4(v) of this paragraph and place it in the facility's operating record and maintain until closure of the facility;

(iv) Continue to make the determinations specified in subpart (d)4(iv) of this paragraph on a quarterly basis until final closure of the facility; and

(v) Comply with the recordkeeping and reporting requirements in part (e)2 of this paragraph.

5. The ground-water monitoring requirements of this paragraph may be waived with respect to any surface impoundment that:

(i) Is used to neutralize wastes which are hazardous solely because they exhibit the corrosivity characteristic under Rule 0400-12-01-.02(3)(c) or are listed as hazardous wastes in Rule 0400-12-01-.02(4) only for this reason, and

(ii) Contains no other hazardous wastes, if the owner or operator can demonstrate that there is no potential for migration of hazardous wastes from the impoundment. The demonstration must establish, based upon consideration of the characteristics of the wastes and the impoundment, that the corrosive wastes will be neutralized to the extent that they no longer meet the corrosivity characteristic before they can migrate out of the impoundment. The demonstration must be in writing and must be certified by a qualified professional.

6. The Commissioner may replace all or part of the requirements of this paragraph applying to a regulated unit (as defined in subparagraph (6)(a) of this rule), with alternative requirements developed for groundwater monitoring set out in an approved closure or post-closure plan or in an enforceable document (as defined in Rule 0400-12-01-.07(1)(b)9), where the Commissioner determines that:

(i) A regulated unit is situated among solid waste management units (or areas of concern), a release has occurred, and both the regulated unit and one or more solid waste management unit(s) (or areas of concern) are likely to have contributed to the release; and

(ii) It is not necessary to apply the requirements of this paragraph because the alternative requirements will protect human health and the environment. The alliterative standards for the regulated unit must meet the requirements of Rule 0400-12-01-.06(6)(l)1.

(b) Ground-water Monitoring System [40 CFR 265.91]

1. A ground-water monitoring system must be capable of yielding ground-water samples for analysis and must consist of:

(i) Monitoring wells (at least one) installed hydraulically upgradient (i.e., in the direction of increasing static head) from the limit of the waste management area. Their number, locations, and depths must be sufficient to yield ground-water samples that are:

(I) Representative of background ground-water quality in the uppermost aquifer near the facility; and

(II) Not affected by the facility; and

(ii) Monitoring wells (at least three) installed hydraulically downgradient (i.e., in the direction of decreasing static head) at the limit of the waste management area. Their number, locations, and depths must ensure that they immediately detect any statistically significant amounts of hazardous waste or hazardous waste constituents that migrate from the waste management area to the uppermost aquifer.

(iii) The facility owner or operator may demonstrate that an alternate hydraulically downgradient monitoring well location will meet the criteria outlined below. The demonstration must be in writing and kept at the facility. The demonstration must be certified by a qualified ground-water scientist and establish that:

(I) An existing physical obstacle prevents monitoring well installation at the hydraulically downgradient limit of the waste management area; and

(II) The selected alternate downgradient location is as close to the limit of the waste management area as practical; and

(III) The location ensures detection that, given the alternate location, is as early as possible of any statistically significant amounts of hazardous waste or hazardous waste constituents that migrate from the waste management area to the uppermost aquifer.

(IV) Lateral expansion, new, or replacement units are not eligible for an alternate downgradient location under this paragraph.

2. Separate monitoring systems for each waste management component of a facility are not required provided that provisions for sampling upgradient and downgradient water quality will detect any discharge from the waste management area.

(i) In the case of a facility consisting of only one surface impoundment, landfill, or land treatment area, the waste management area is described by the waste boundary (perimeter).

(ii) In the case of a facility consisting of more than one surface impoundment, landfill, or land treatment area, the waste management area is described by an imaginary boundary line which circumscribes the several waste management components.

3. All monitoring wells must be cased in a manner that maintains the integrity of the monitoring well bore hole. This casing must be screened or perforated, and packed with gravel or sand where necessary, to enable sample collection at depths where appropriate aquifer flow zones exist. The annular space (i.e., the space between the bore hole and well casing) above the sampling depth must be sealed with a suitable material (e.g., cement grout or bentonite slurry) to prevent contamination of samples and the ground water.

4. The location and construction of all monitoring wells must be approved by a Department staff geologist.

(c) Sampling and Analysis [40 CFR 265.92]

1. The owner or operator must obtain and analyze samples from the installed ground-water monitoring system. The owner or operator must develop and follow a ground-water sampling and analysis plan. He must keep this plan at the facility. The plan must include procedures and techniques for:

(i) Sample collection;

(ii) Sample preservation and shipment;

(iii) Analytical procedures; and

(iv) Chain of custody control.

(Comment: See "Procedures Manual For Ground-water Monitoring At Solid Waste Disposal Facilities," EPA-530/SW-611, August 1977 and "Methods for Chemical Analysis of Water and Wastes," EPA-600/4-79-020, March 1979 for discussions of sampling and analysis procedures.)

2. The owner or operator must determine the concentration or value of the following parameters in ground-water samples in accordance with part 3 and 4 of this subparagraph:

(i) Parameters characterizing the suitability of the ground water as a drinking water supply, as specified in appendix III.

(ii) Parameters establishing ground-water quality:

(I) Chloride

(II) Iron

(III) Manganese

(IV) Phenols

(V) Sodium

(VI) Sulfate

(Comment: These parameters are to be used as a basis for comparison in the event a ground-water quality assessment is required under part (d)4 of this paragraph.)

(iii) Parameters used as indicators of ground-water contamination:

(I) pH

(II) Specific Conductance

(III) Total Organic Carbon

(IV) Total Organic Halogen

3. (i) For all monitoring wells, the owner or operator must establish initial background concentrations or values of all parameters specified in part 2 of this subparagraph. He must do this quarterly for one year.

(ii) For each of the indicator parameters specified in subpart 2(iii) of this subparagraph, at least four replicate measurements must be obtained for each sample and the initial background arithmetic mean and variance must be determined by pooling the replicate measurements for the respective parameter concentrations or values in samples obtained from upgradient wells during the first year.

4. After the first year, all monitoring wells must be sampled and the samples analyzed with the following frequencies:

(i) Samples collected to establish ground-water quality must be obtained and analyzed for the parameters specified in subpart (2)(ii) of this subparagraph at least annually.

(ii) Samples collected to indicate ground-water contamination must be obtained and analyzed for the parameters specified in subpart (2)(iii) of this subparagraph at least semi-annually.

5. Elevation of the ground-water surface at each monitoring well must be determined each time a sample is obtained.

(d) Preparation, Evaluation, and Response [40 CFR 265.93]

1. Within one year after the effective date of these regulations, the owner or operator must prepare an outline of a ground-water quality assessment program. The outline must describe a more comprehensive ground-water monitoring program (than that described in subparagraphs (b) and (c) of this paragraph) capable of determining:

(i) Whether hazardous waste or hazardous waste constituents have entered the ground water;

(ii) The rate and extent of migration of hazardous waste or hazardous waste constituents in the ground water; and

(iii) The concentrations of hazardous waste or hazardous waste constituents in the ground water.

2. For each indicator parameter specified in subpart (c)2(iii) of this paragraph, the owner or operator must calculate the arithmetic mean and variance, based on at least four replicate measurements on each sample, for each well monitored in accordance with subpart (c)4(ii) of this paragraph, and compare these results with its initial background arithmetic mean. The comparison must consider individually each of the wells in the monitoring system, and must use the Student's t-test at the 0.01 level of significance (see appendix IV) to determine statistically significant increases (and decreases, in the case of pH) over initial background.

3. (i) If the comparisons for the upgradient wells made under part 2 of this

subparagraph show a significant increase (or pH decrease), the owner or operator must submit this information in accordance with item (e)1(ii)(II) of this paragraph.

(ii) If the comparisons for downgradient wells made under part 2 of this subparagraph show a significant increase (or pH decrease), the owner or operator must then immediately obtain additional ground-water samples from those downgradient wells where a significant difference was detected, split the samples in two, and obtain analyses of all additional samples to determine whether the significant difference was a result of laboratory error.

4. (i) If the analyses performed under subpart 3(ii) of this subparagraph confirm the significant increase (or pH decrease), the owner or operator must provide written notice to the Commissioner -- within seven days of the date of such confirmation -- that the facility may be affecting ground-water quality.

(ii) Within 15 days after the notification under subpart (i) of this part, the owner or operator must develop a specific plan, based on the outline required under part 1 of this subparagraph and certified by a qualified geologist or geotechnical engineer, for a ground-water quality assessment at the facility. This plan must be placed in the facility operating record and maintained until closure of the facility.

(iii) The plan to be submitted under subpart (a)4(i) or subpart (ii) of this part must specify:

(I) The number, location, and depth of wells;

(II) Sampling and analytical methods for those hazardous wastes or hazardous waste constituents in the facility;

(III) Evaluation procedures, including any use of previously-gathered ground-water quality information; and

(IV) A schedule of implementation.

(iv) The owner or operator must implement the ground-water quality assessment plan which satisfies the requirements of subpart (iii) of this part, and, at a minimum, determine:

(I) The rate and extent of migration of the hazardous waste or hazardous waste constituents in the ground water; and

(II) The concentrations of the hazardous waste or hazardous waste constituents in the ground water.

(v) The owner or operator must make his first determination under subpart 4(iv) of this subparagraph as soon as technically feasible, and prepare a report containing an assessment of ground-water quality. This report must be place in the facility operating record and maintained until closure of the facility.

(vi) If the owner or operator determines, based on the results of the first determination under subpart (iv) of this part, that no hazardous waste or hazardous waste constituents from the facility have entered the ground water, then he may reinstate the indicator evaluation program described in subparagraph (c) and part (d)2 of this paragraph. If the owner or operator reinstates the indicator evaluation program, he must so notify the Commissioner in the report submitted under subpart (v) of this part.

(vii) If the owner or operator determines, based on the first determination under

subpart (iv) of this part, that hazardous waste or hazardous waste constituents from the facility have entered the ground water, then he:

(I) Must continue to make the determinations required under subpart (iv) of this part on a quarterly basis until final closure of the facility, if the ground-water quality assessment plan was implemented prior to final closure of the facility; or

(II) May cease to make the determinations required under subpart (iv) of this part, if the ground-water quality assessment plan was implemented during the post-closure care period.

5. Notwithstanding any other provision of this subpart, any ground-water quality assessment to satisfy the requirements of subpart 4(iv) of this subparagraph which is initiated prior to final closure of the facility must be completed and reported in accordance with subpart 4(v) of this subparagraph.

6. Unless the ground water is monitored to satisfy the requirements of subpart 4(iv) of this subparagraph, at least annually the owner or operator must evaluate the data on ground-water surface elevations obtained under part (c)5 of this paragraph to determine whether the requirements under part (b)1 of this paragraph for locating the monitoring wells continues to be satisfied. If the evaluation shows that part (b)1 of this paragraph is no longer satisfied, the owner or operator must immediately modify the number, location, or depth of the monitoring wells to bring the ground-water monitoring system into compliance with this requirement.

(e) Recordkeeping and Reporting [40 CFR 265.94]

1. Unless the ground water is monitored to satisfy the requirements of subpart (d)4(iv) of this paragraph, the owner or operator must:

(i) Keep records of the analyses required in parts (c)3 and 4 of this paragraph, the associated ground-water surface elevations required in part (c)5 of this paragraph, and the evaluations required in part (d)4 of this paragraph throughout the active life of the facility, and, for disposal facilities, throughout the post-closure care period as well; and

(ii) Report the following ground-water monitoring information to the Commissioner:

(I) During the first year when initial background concentrations are being established for the facility: concentrations or values of the parameters listed in subpart (c)2(i) of this paragraph for each ground-water monitoring well within 15 days after completing each quarterly analysis. The owner or operator must separately identify for each monitoring well any parameters whose concentration or value has been found to exceed the maximum contaminant levels listed in Appendix III of paragraph (53) of this rule.

(II) Annually: Concentrations or values of the parameters listed in subpart (c)2(iii) of this paragraph for each ground-water monitoring well, along with the required evaluations for these parameters under part (d)2 of this paragraph. The owner or operator must separately identify any significant differences from initial background found in the upgradient wells, in accordance with subpart (d)3(i) of this paragraph. During the active life of the facility, this information must be submitted no later than March 1 following each calendar year.

(III) No later than March 1 following each calendar year: Results of the

evaluations of ground-water surface elevations under part (d)6 of this paragraph, and a description of the response to that evaluation, where applicable.

2. If the ground water is monitored to satisfy the requirements of subpart (d)4(iv) of this paragraph, the owner or operator must:

(i) Keep records of the analyses and evaluations specified in the plan, which satisfies the requirements of subpart (d)4(iii) of this paragraph, throughout the active life of the facility, and, for disposal facilities, throughout the post-closure care period as well; and

(ii) Annually, until final closure of the facility, submit to the Commissioner a report containing the results of his or her ground-water quality assessment program which includes, but is not limited to, the calculated (or measured) rate of migration of hazardous waste or hazardous waste constituents in the ground water during the reporting period. This information must be submitted no later than March 1 following each calendar year.

(7) Closure and Post-Closure [40 CFR 265 Subpart G]

(a) Applicability [40 CFR 265.110]

Except as paragraph (1) of this rule provides otherwise:

1. Subparagraphs (b) through (f) of this paragraph (which concern closure) apply to the owners and operators of all hazardous waste management facilities; and

2. Subparagraphs (g) through (k) of this paragraph (which concern post-closure care) apply to the owners and operators of:

(i) All hazardous waste disposal facilities;

(ii) Waste piles and surface impoundments for which the owner or operator intends to remove the wastes at closure to the extent that these subparagraphs are made applicable to such facilities in subparagraph (11)(i) or (12)(i) of this rule;

(iii) Tank systems that are required under subparagraph (10)(h) of this rule to meet requirements for landfills; and

(iv) Containment buildings that are required under subparagraph (30)(c) of this rule to meet the requirement for landfills.

3. Subparagraph (l) of this paragraph applies to owners and operators of units that are subject to the requirements of Rule 0400-12-01-.07(1)(b)9 and are regulated under an enforceable document (as defined in Rule 0400-12-01-.07(1)(b)9).

4. The Commissioner may replace all or part of the requirements of this paragraph (and the unit-specific standards in part (b)3 of this paragraph) applying to a regulated unit (as defined in subparagraph (6)(a) of this rule), with alternative requirements for closure set out in an approved closure or post-closure plan, or in an enforceable document (as defined in Rule 0400-12-01-.07(1)(b)9), where the Commissioner determines that:

(i) A regulated unit is situated among solid waste management units (or areas of concern), a release has occurred, and both the regulated unit and one or more solid waste management unit(s) (or areas of concern) are likely to have contributed to the release, and

(ii) It is not necessary to apply the closure requirements of this paragraph (and/or

those referenced herein) because the alternative requirements will protect human health and the environment, and will satisfy the closure performance standard of part (b)1 and 2 of this paragraph.

(b) Closure Performance Standard [40 CFR 265.111]

The owner or operator must close the facility in a manner that:

1. Minimizes the need for further maintenance, and

2. Controls, minimizes or eliminates, to the extent necessary to protect human health and the environment, post-closure escape of hazardous waste, hazardous constituents, leachate, contaminated run-off, or hazardous waste decomposition products to the ground or surface waters or to the atmosphere, and

3. Complies with the closure requirements of this rule including, but not limited to, the requirements of subparagraphs (10)(h), (11)(j), (12)(i), (13)(k), (14)(k), (15)(l), (16)(l), (17)(e), and (30)(c) of this rule.

(c) Closure Plan; Amendment of Plan [40 CFR 265.112]

1. Written Plan

By May 19, 1981, or by six months after the effective date of the rule that first subjects a facility to provisions of this paragraph, the owner or operator of a hazardous waste management facility must have a written closure plan. Until final closure is completed and certified in accordance with subparagraph (f) of this paragraph, a copy of the most current plan must be furnished to the Commissioner upon request, including request by mail. In addition, for facilities without approved plans, it must also be provided during site inspections, on the day of inspection, to any officer, employee, or representative of the Department who is duly designated by the Commissioner.

2. Content of Plan

The plan must identify steps necessary to perform partial and/or final closure of the facility at any point during its active life. The closure plan must include, at least:

(i) A description of how each hazardous waste management unit at the facility will be closed in accordance with subparagraph (b) of this paragraph; and

(ii) A description of how final closure of the facility will be conducted in accordance with subparagraph (b) of this paragraph. The description must identify the maximum extent of the operation which will be unclosed during the active life of the facility; and

(iii) An estimate of the maximum inventory of hazardous wastes ever on-site over the active life of the facility and a detailed description of the methods to be used during partial and final closure, including, but not limited to methods for removing, transporting, treating, storing or disposing of all hazardous waste, identification of and the type(s) of off-site hazardous waste management unit(s) to be used, if applicable; and

(iv) A detailed description of the steps needed to remove or decontaminate all hazardous waste residues and contaminated containment system components, equipment, structures, and soils during partial and final closure including, but not limited to, procedures for cleaning equipment and removing contaminated soils, methods for sampling and testing surrounding soils, and criteria for determining the extent of decontamination necessary to satisfy the closure performance standard; and

(v) A detailed description of other activities necessary during the partial and final closure periods to ensure that all partial closures and final closure satisfy the closure performance standards, including, but not limited to, ground-water monitoring, leachate collection, and run-on and run-off control; and

(vi) A schedule for closure of each hazardous waste management unit and for final closure of the facility. The schedule must include, at a minimum, the total time required to close each hazardous waste management unit and the time required for intervening closure activities which will allow tracking of the progress of partial and final closure. (For example, in the case of a landfill unit, estimates of the time required to treat or dispose of all hazardous waste inventory and of the time required to place a final cover must be included.); and

(vii) An estimate of the expected year of final closure for facilities that use trust funds to demonstrate financial assurance under subparagraph (8)(d) or (8)(f) of this rule and whose remaining operating life is less than twenty years, and for facilities without approved closure plans; and

(viii) Construction drawings showing details of the final cover (if any) necessary to ensure that the applicable closure requirements of subparagraphs (10)(h), (11)(j), (12)(i), (13)(k), and (14)(k) of this rule will be accomplished.

(ix) For facilities where the Commissioner has applied alternative requirements at a regulated unit under part (6)(a)6 of this rule, part (a)4 of this paragraph, and/or part (8)(a)4 of this rule, either the alternative requirements applying to the regulated unit, or a reference to the enforceable document containing those alternative requirements.

3. Amendment of Plan

The owner or operator may amend the closure plan at any time prior to the notification of partial or final closure of the facility. An owner or operator with an approved closure plan must submit a written request to the Commissioner to authorize a change to the approved closure plan. The written request must include four (4) copies of the amended closure plan for approval by the Commissioner.

(i) The owner or operator must amend the closure plan whenever:

(I) Changes in operating plans or facility design affect the closure plan, or

(II) There is a change in the expected year of closure, if applicable, or

(III) In conducting partial or final closure activities, unexpected events require a modification of the closure plan.

(IV) The owner or operator requests the Commissioner to apply alternative requirements to a regulated unit under part (6)(a)6 of this rule, part (a)4 of this paragraph, and/or part (8)(a)4 of this rule.

(ii) The owner or operator must amend the closure plan at least 60 days prior to the proposed change in facility design or operation, or no later than 60 days after an unexpected event has occurred which has affected the closure plan. If an unexpected event occurs during the partial or final closure period, the owner or operator must amend the closure plan no later than 30 days after the unexpected event. These provisions also apply to owners or operators of surface impoundments and waste piles who intended to remove all hazardous wastes at closure, but are required to close as landfills in accordance with subparagraph (14)(k) of this rule.

(iii) An owner or operator with an approved closure plan must submit the modified plan to the Commissioner at least 60 days prior to the proposed change in facility design or operation, or no more than 60 days after an unexpected event has occurred which has affected the closure plan. If an unexpected event has occurred during the partial or final closure period, the owner or operator must submit the modified plan no more than 30 days after the unexpected event. These provisions also apply to owners or operators of surface impoundments and waste piles who intended to remove all hazardous wastes at closure but are required to close as landfills in accordance with subparagraph (14)(k) of this rule. If the amendment to the plan is a Class 1, [1]1, 2, or 3 modification according to the criteria in Rule 0400-12-01-.07(9)(c), the modification to the plan will be approved according to the procedures in subpart 4(iv) of this subparagraph.

(iv) The Commissioner may request modifications to the plan under the conditions described in subpart (i) of this part. An owner or operator with an approved closure plan must submit the modified plan within 60 days of the request from the Commissioner, or within 30 days if the unexpected event occurs during partial or final closure. If the amendment is considered a Class 1, [1]1, 2, or 3 modification according to the criteria in Rule 0400-12-01-.07(9)(c), the modification to the plan will be approved in accordance with the procedures in subpart 4(iv) of this subparagraph.

4. Notification of Partial Closure and Final Closure

(i) The owner or operator must submit the closure plan to the Commissioner at least 180 days prior to the date on which he expects to begin closure of the first surface impoundment, waste pile, land treatment, or landfill unit, or final closure if it involves such a unit, whichever is earlier. The owner or operator must submit the closure plan to the Commissioner at least 45 days prior to the date on which he expects to begin partial or final closure of a boiler or industrial furnace. The owner or operator must submit the closure plan to the Commissioner at least 45 days prior to the date on which he expects to begin final closure of a facility with only tanks, container storage, or incinerator units. Owners or operators with approved closure plans must notify the Commissioner in writing at least 60 days prior to the date on which he expects to begin closure of a surface impoundment, waste pile, landfill, or land treatment unit, or final closure of a facility involving such a unit. Owners or operators with approved closure plans must notify the Commissioner in writing at least 45 days prior to the date on which he expects to begin partial or final closure of a boiler or industrial furnace. Owners or operators with approved closure plans must notify the Commissioner in writing at least 45 days prior to the date on which he expects to begin final closure of a facility with only tanks, container storage, or incinerator units.

(ii) The date when he "expects to begin closure" must be either:

(I) Within 30 days after the date on which any hazardous waste management unit receives the known final volume of hazardous wastes, or, if there is a reasonable possibility that the hazardous waste management unit will receive additional hazardous wastes, no later than one year after the date on which the unit received the most recent volume of hazardous waste. If the owner or operator of a hazardous waste management unit can demonstrate to the Commissioner that the hazardous waste management unit or facility has the capacity to receive additional hazardous wastes and he has taken, and will continue to take, all steps to prevent threats to human health and the environment, including compliance with all interim status requirements, the Commissioner may approve an extension to this one-year limit; or

(II) For units meeting the requirements of part (d)4 of this paragraph, no later than 30 days after the date on which the hazardous waste management unit receives the known final volume of nonhazardous wastes, or if there is a reasonable possibility that the hazardous waste management unit will receive additional nonhazardous wastes, no later than one year after the date on which the unit received the most recent volume of nonhazardous wastes. If the owner or operator can demonstrate to the Commissioner that the hazardous waste management unit has the capacity to receive additional nonhazardous wastes and he has taken, and will continue to take, all steps to prevent threats to human health and the environment, including compliance with all applicable interim status requirements, the Commissioner may approve an extension to this one-year limit.

(iii) The owner or operator must submit at least four (4) copies of his closure plan to the Commissioner no later than 15 days after:

(I) Termination of interim status except when a permit is issued simultaneously with termination of interim status; or

(II) Issuance of a judicial decree or final order under T.C.A. §68-212-111 to cease receiving hazardous wastes or close.

(iv) The Commissioner will provide the owner or operator and the public, through a newspaper notice, published by the owner or operator, as provided for in Rule 0400-12-01-.07(7)(e) and as prepared and required by the Commissioner, the opportunity to submit written comments on the plan and request modifications to the plan no later than 30 days from the date of the notice. The owner or operator shall provide proof of the completion of all notice requirements to the Commissioner within ten (10) days following conclusion of the public notice procedures. The Commissioner will also, in response to a request or at his own discretion, hold a public hearing whenever such a hearing might clarify one or more issues concerning a closure plan. The owner or operator, as provided for in Rule 0400-12-01-.07(7)(e) and as prepared and required by the Commissioner, will give public notice of the hearing at least 30 days before it occurs. (Public notice of the hearing may be given at the same time as notice of the opportunity for the public to submit written comments, and the two notices may be combined.) The Commissioner will approve, modify, or disapprove the plan within 90 days of its receipt. If the Commissioner does not approve the plan he shall provide the owner or operator with a detailed written statement of reasons for the refusal and the owner or operator must modify the plan or submit a new plan [four (4) copies] for approval within 30 days after receiving such written statement. The Commissioner will approve or modify this plan in writing within 60 days. If the Commissioner modifies the plan, this modified plan becomes the approved closure plan. The Commissioner must assure that the approved plan is consistent with subparagraphs (b) through (f) of this paragraph and the applicable requirements of paragraph (6) and subparagraphs (10)(h), (11)(i), (12)(i), (13)(k), (14)(k), (15)(l), (16)(l), (17)(e), and (30)(c) of this rule. A copy of the modified plan with a detailed statement of reasons for the modifications must be mailed to the owner or operator.

5. Removal of Wastes and Decontamination or Dismantling of Equipment

Nothing in this subparagraph shall preclude the owner or operator from removing hazardous wastes and decontaminating or dismantling equipment in accordance with the approved partial or final closure plan at any time before or after notification of partial or final closure.

(d) Closure; Time Allowed for Closure [40 CFR 265.113]

1. Within 90 days after receiving the final volume of hazardous wastes, or the final volume of nonhazardous wastes if the owner or operator complies with all applicable requirements in parts 4 and 5 of this subparagraph, at a hazardous waste management unit or facility, or within 90 days after approval of the closure plan, whichever is later, the owner or operator must treat, remove from the unit or facility, or dispose of on-site, all hazardous wastes in accordance with the approved closure plan. The Commissioner may approve a longer period if the owner or operator demonstrates that:

   (i) (I) The activities required to comply with this part will, of necessity, take longer than 90 days to complete; or

   (II) I. The hazardous waste management unit or facility has the capacity to receive additional hazardous wastes, or has the capacity to receive non-hazardous wastes if the facility owner or operator complies with part 4 and 5 of this subparagraph; and

   II. There is a reasonable likelihood that he or another person will recommence operation of the hazardous waste management unit or the facility within one year; and

   III. Closure of the hazardous waste management unit or facility would be incompatible with continued operation of the site; and

   (ii) He has taken and will continue to take all steps to prevent threats to human health and the environment, including compliance with all applicable interim status requirements.

2. The owner or operator must complete partial and final closure activities in accordance with the approved closure plan and within 180 days after receiving the final volume of hazardous wastes, or the final volume of nonhazardous wastes if the owner or operator complies with all applicable requirements in parts 4 and 5 of this subparagraph, at the hazardous waste management unit or facility, or 180 days after approval of the closure plan, if that is later. The Commissioner may approve an extension to the closure period if the owner or operator demonstrates that:

   (i) (I) The partial or final closure activities will, of necessity, take longer than 180 days to complete; or

   (II) I. The hazardous waste management unit or facility has the capacity to receive additional hazardous wastes, or has the capacity to receive non-hazardous wastes if the facility owner or operator complies with parts 4 and 5 of this subparagraph; and

   II. There is reasonable likelihood that he or another person will recommence operation of the hazardous waste management unit or the facility within one year; and

   III. Closure of the hazardous waste management unit or facility would be incompatible with continued operation of the site; and

   (ii) He has taken and will continue to take all steps to prevent threats to human health and the environment from the unclosed but not operating hazardous waste management unit or facility, including compliance with all applicable interim status requirements.

3. The demonstrations referred to in subparts 1(i) and 2(i) of this subparagraph must be made as follows:

(i) The demonstrations in subpart 1(i) of this subparagraph must be made at least 30 days prior to the expiration of the 90-day period in part 1 of this subparagraph; and

(ii) The demonstration in subpart 2(i) of this subparagraph must be made at least 30 days prior to the expiration of the 180-day period in part 2 of this subparagraph, unless the owner or operator is otherwise subject to the deadlines in part 4 of this subparagraph.

4. The Commissioner may allow an owner or operator to receive non-hazardous wastes in a landfill, land treatment, or surface impoundment unit after the final receipt of hazardous wastes at that unit if:

(i) The owner or operator submits an amended part B application, or a part B application, if not previously required, and demonstrates that:

(I) The unit has the existing design capacity as indicated on the part A application to receive non-hazardous wastes; and

(II) There is a reasonable likelihood that the owner or operator or another person will receive non-hazardous wastes in the unit within one year after the final receipt of hazardous wastes; and

(III) The non-hazardous wastes will not be incompatible with any remaining wastes in the unit or with the facility design and operating requirements of the unit or facility under this part; and

(IV) Closure of the hazardous waste management unit would be incompatible with continued operation of the unit or facility; and

(V) The owner or operator is operating and will continue to operate in compliance with all applicable interim status requirements; and

(ii) The part B application includes an amended waste analysis plan, ground-water monitoring and response program, human exposure assessment required under federal RCRA Section 3019, and closure and post-closure plans, and updated cost estimates and demonstrations of financial assurance for closure and post-closure care as necessary and appropriate to reflect any changes due to the presence of hazardous constituents in the non-hazardous wastes, and changes in closure activities, including the expected year of closure if applicable under subpart (c)2(vii) of this paragraph, as a result of the receipt of non-hazardous wastes following the final receipt of hazardous wastes; and

(iii) The part B application is amended, as necessary and appropriate, to account for the receipt of non-hazardous wastes following receipt of the final volume of hazardous wastes; and

(iv) The part B application and the demonstrations referred to in subparts (i) and (ii) of this part are submitted to the Commissioner no later than 180 days prior to the date on which the owner or operator of the facility receives the known final volume of hazardous wastes, or no later than 90 days after the effective date of this rule in the state in which the unit is located, whichever is later.

5. In addition to the requirements in part 4 of this subparagraph, an owner or operator of a hazardous waste surface impoundment that is not in compliance with the liner and leachate collection system requirements in part (11)(b)3 of this rule must:

(i) Submit with the part B application:

(I) A contingent corrective measures plan; and

(II) A plan for removing hazardous wastes in compliance with subpart (ii) of this part; and

(ii) Remove all hazardous wastes from the unit by removing all hazardous liquids and removing all hazardous sludges to the extent practicable without impairing the integrity of the liner(s), if any.

(iii) Removal of hazardous wastes must be completed no later than 90 days after the final receipt of hazardous wastes. The Commissioner may approve an extension to this deadline if the owner or operator demonstrates that the removal of hazardous wastes will, of necessity, take longer than the allotted period to complete and that an extension will not pose a threat to human health and the environment.

(iv) If a release that is a statistically significant increase (or decrease in the case of pH) in hazardous constituents over background levels is detected in accordance with the requirements in paragraph (6) of this rule, the owner or operator of the unit:

(I) Must implement corrective measures in accordance with the approved contingent corrective measures plan required by subpart (i) of this part no later than one year after detection of the release, or approval of the contingent corrective measures plan, whichever is later;

(II) May receive wastes at the unit following detection of the release only if the approved corrective measures plan includes a demonstration that continued receipt of wastes will not impede corrective action; and

(III) May be required by the Commissioner to implement corrective measures in less than one year or to cease receipt of wastes until corrective measures have been implemented if necessary to protect human health and the environment.

(v) During the period of corrective action, the owner or operator shall provide annual reports to the Commissioner describing the progress of the corrective action program, compile all ground-water monitoring data, and evaluate the effect of the continued receipt of non-hazardous wastes on the effectiveness of the corrective action.

(vi) The Commissioner may require the owner or operator to commence closure of the unit if the owner or operator fails to implement corrective action measures in accordance with the approved contingent corrective measures plan within one year as required in subpart (iv) of this part, or fails to make substantial progress in implementing corrective action and achieving the facility's background levels.

(vii) If the owner or operator fails to implement corrective measures as required in subpart (iv) of this part, or if the Commissioner determines that substantial progress has not been made pursuant to subpart (vi) of this part:

(I) He shall notify the owner or operator in writing that the owner or operator must begin closure in accordance with the deadline in parts 1 and 2 of this subparagraph and provide a detailed statement of reasons for this determination, and

(II) He shall provide the owner or operator and the public, through a newspaper notice, the opportunity to submit written comments on the decision no later than 20 days after the date of the notice.

(III) If the Commissioner receives no written comments, the decision will become final five days after the close of the comment period. The Commissioner will notify the owner or operator that the decision is final, and that a revised closure plan, if necessary, must be submitted within 15 days of the final notice and that closure must begin in accordance with the deadlines in parts 1 and 2 of this subparagraph.

(IV) If the Commissioner receives written comments on the decision, he shall make a final decision within 30 days after the end of the comment period, and provide the owner or operator in writing and the public through a newspaper notice, a detailed statement of reasons for the final decision. If the Commissioner determines that substantial progress has not been made, closure must be initiated in accordance with the deadlines in parts 1 and 2 of this subparagraph.

(V) The final determinations made by the Commissioner under items (III) and (IV) of this subpart are not subject to administrative appeal.

(e) Disposal or Decontamination of Equipment, Structures and Soils [40 CFR 265.114]

During the partial and final closure periods, all contaminated equipment, structures and soil must be properly disposed of, or decontaminated unless specified otherwise in subparagraphs (10)(h), (11)(i), (12)(i), (13)(k), or (14)(k) of this rule. By removing all hazardous wastes or hazardous constituents during partial and final closure, the owner or operator may become a generator of hazardous waste and must handle that hazardous waste in accordance with all applicable requirements of Rule 0400-12-01-.03.

(f) Certification of Closure [40 CFR 265.115]

Within 60 days of completion of closure of each hazardous waste surface impoundment, waste pile, land treatment, and landfill unit, and within 60 days of completion of final closure, the owner or operator must submit to the Commissioner, by registered mail, a certification that the hazardous waste management unit or facility, as applicable, has been closed in accordance with the specifications in the approved closure plan. The certification must be signed by the owner or operator and by a qualified Professional Engineer. Documentation supporting the qualified Professional Engineer's certification must be furnished to the Commissioner upon request until he releases the owner or operator from the financial assurance requirements for closure under part (8)(d)8 of this rule.

As used in this subparagraph, the phrase "hazardous waste surface impoundment, waste pile, land treatment, and landfill unit" shall mean "hazardous waste management unit" as defined in Rule 0400-12-01-.01(2)(a).

(g) Survey Plat [40 CFR 265.116]

No later than the submission of the certification of closure of each hazardous waste disposal unit, an owner or operator must submit to the local zoning authority, or the authority with jurisdiction over local land use, and to the Commissioner, a survey plat (at least four (4) copies) indicating the location and dimensions of landfill cells or other hazardous waste disposal units with respect to permanently surveyed benchmarks. This plat must be prepared and certified by a professional land surveyor. The plat filed with the local zoning authority, or the authority with jurisdiction over local land use must contain a note, prominently displayed, which states the owner's or operator's obligation to restrict disturbance of the hazardous waste disposal unit in accordance with the applicable regulations of this paragraph.

(h) Post-closure Care and Use of Property [40 CFR 265.117]

1. (i) Post-closure care for each hazardous waste management unit subject to the

requirements of subparagraphs (h) through (k) of this paragraph must begin after completion of closure of the unit and continue for 30 years after that date. It must consist of at least the following:

(I) Monitoring and reporting in accordance with the requirements of paragraphs (6), (11), (12), (13), and (14) of this rule; and

(II) Maintenance and monitoring of waste containment systems in accordance with the requirements of paragraphs (6), (11), (12), (13), and (14) of this rule.

(ii) Any time preceding closure of a hazardous waste management unit subject to post-closure care requirements or final closure, or any time during the post-closure period for a particular hazardous waste disposal unit, the Commissioner may:

(I) Shorten the post-closure care period applicable to the hazardous waste management unit, or facility, if all disposal units have been closed, if he finds that the reduced period is sufficient to protect human health and the environment (e.g., leachate or ground-water monitoring results, characteristics of the hazardous waste, application of advanced technology, or alternative disposal, treatment, or re-use techniques indicate that the hazardous waste management unit or facility is secure); or

(II) Extend the post-closure care period applicable to the hazardous waste management unit or facility, if he finds that the extended period is necessary to protect human health and the environment (e.g., leachate or ground-water monitoring results indicate a potential for migration of hazardous wastes at levels which may be harmful to human health and the environment).

2. The Commissioner may require, at partial and final closure, continuation of any of the security requirements of subparagraph (2)(e) of this rule during part or all of the post-closure period when:

(i) Hazardous wastes may remain exposed after completion of partial or final closure; or

(ii) Access by the public or domestic livestock may pose a hazard to human health.

3. Post-closure use of property on or in which hazardous wastes remain after partial or final closure must never be allowed to disturb the integrity of the final cover, liner(s), or any other components of the containment system, or the function of the facility's monitoring systems, unless the Commissioner finds that the disturbance:

(i) Is necessary to the proposed use of the property, and will not increase the potential hazard to human health or the environment; or

(ii) Is necessary to reduce a threat to human health or the environment.

4. All post-closure care activities must be in accordance with the provisions of the approved post-closure plan as specified in subparagraph (i) of this paragraph.

(i) Post-closure Plan; Amendment of Plan [40 CFR 265.118]

1. Written Plan

By May 19, 1981, the owner or operator of a hazardous waste disposal unit must have a

written post-closure plan. An owner or operator of a surface impoundment or waste pile that intends to remove all hazardous wastes at closure must prepare a post-closure plan and submit it to the Commissioner within 90 days of the date that the owner or operator or Commissioner determines that the hazardous waste management unit or facility must be closed as a landfill, subject to the requirements of subparagraphs (h) through (k) of this paragraph.

2. Until final closure of the facility, four (4) copies of the most current post-closure plan must be furnished to the Commissioner upon request, including request by mail. In addition, for facilities without approved post-closure plans, it must also be provided during site inspections, on the day of inspection, to any officer, employee or representative of the Department who is duly designated by the Commissioner. After final closure has been certified, the person or office specified in subpart 3(iii) of this subparagraph must keep the approved post-closure plan during the post-closure period.

3. For each hazardous waste management unit subject to the requirements of this subparagraph, the post-closure plan must identify the activities that will be carried on after closure of each disposal unit and the frequency of these activities, and include at least:

   (i) A description of the planned monitoring activities and frequencies at which they will be performed to comply with paragraphs (6), (11), (12), (13), and (14) of this rule during the post-closure care period; and

   (ii) A description of the planned maintenance activities, and frequencies at which they will be performed, to ensure:

      (I) The integrity of the cap and final cover or other containment systems in accordance with the requirements of paragraphs (11), (12), (13), and (14) of this rule; and

      (II) The function of the monitoring equipment in accordance with the requirements of paragraphs (6), (11), (12), (13), and (14) of this rule; and

   (iii) The name, address, and phone number of the person or office to contact about the hazardous waste disposal unit or facility during the post-closure care period.

   (iv) For facilities subject to subparagraph (I) of this paragraph, provisions that satisfy the requirements of subpart (I)1(i) and (iii) of this paragraph,

   (v) For facilities where the Commissioner has applied alternative requirements at a regulated unit under part (6)(a)6 of this rule, part (a)4 of this paragraph, and/or part (8)(a)4 of this rule, either the alternative requirements that apply to the regulated unit, or a reference to the enforceable document containing those requirements.

4. Amendment of Plan

The owner or operator may amend the post-closure plan any time during the active life of the facility or during the post-closure care period. An owner or operator with an approved post-closure plan must submit a written request to the Commissioner to authorize a change to the approved plan. The written request must include four (4) copies of the amended post-closure plan for approval by the Commissioner.

(i) The owner or operator must amend the post-closure plan whenever:

   (I) Changes in operating plans or facility design affect the post-closure plan, or

(II) Events which occur during the active life of the facility, including partial and final closures, affect the post-closure plan.

(III) The owner or operator requests the Commissioner to apply alternative requirements to a regulated unit under part (6)(a)6 of this rule, part (a)4 of this paragraph, and/or part (8)(a)4 of this rule.

(ii) The owner or operator must amend the post-closure plan at least 60 days prior to the proposed change in facility design or operation, or no later than 60 days after an unexpected event has occurred which has affected the post-closure plan.

(iii) An owner or operator with an approved post-closure plan must submit the modified plan to the Commissioner at least 60 days prior to the proposed change in facility design or operation, or no more than 60 days after an unexpected event has occurred which has affected the post-closure plan. If an owner or operator of a surface impoundment or a waste pile who intended to remove all hazardous wastes at closure in accordance with part (11)(i)2 or (12)(i)1 of this rule is required to close as a landfill in accordance with subparagraph (14)(k) of this rule, the owner or operator must submit a post-closure plan within 90 days of the determination by the owner or operator or Commissioner that the unit must be closed as a landfill. If the amendment to the post-closure plan is a Class 2 or 3 modification according to the criteria in Rule 0400-12-01-.07(9)(c), the modification to the plan will be approved according to the procedures in part 6 of this subparagraph.

(iv) The Commissioner may request modifications to the plan under the conditions described in subpart (i) of this part. An owner or operator with an approved post-closure plan must submit the modified plan no later than 60 days of the request from the Commissioner. If the amendment to the plan is considered a Class 2 or 3 modification according to the criteria in Rule 0400-12-01-.07(9)(c), the modifications to the post-closure plan will be approved in accordance with the procedures in part 6 of this subparagraph. If the Commissioner determines that an owner or operator of a surface impoundment or waste pile who intended to remove all hazardous wastes at closure must close the facility as a landfill, the owner or operator must submit a post-closure plan for approval to the Commissioner within 90 days of the determination.

5. The owner or operator of a facility with hazardous waste management units subject to these requirements must submit at least four (4) copies of his post-closure plan to the Commissioner at least 180 days before the date he expects to begin partial or final closure of the first hazardous waste disposal unit. The date he "expects to begin closure" of the first hazardous waste disposal unit must be either within 30 days after the date on which the hazardous waste management unit receives the known final volume of hazardous waste or, if there is a reasonable possibility that the hazardous waste management unit will receive additional hazardous wastes, no later than one year after the date on which the unit received the most recent volume of hazardous wastes. The owner or operator must submit the post-closure plan (four (4) copies) to the Commissioner no later than 15 days after:

(i) Termination of interim status (except when a permit is issued to the facility simultaneously with termination of interim status); or

(ii) Issuance of a judicial decree or final orders under T.C.A.§ 68-212-111 to cease receiving wastes or close.

6. The Commissioner will provide the owner or operator and the public, through a newspaper notice, published by the owner or operator, as provided for in Rule 0400-12-01-.07(7)(e) and as prepared and required by the Commissioner, the opportunity to submit written comments on the post-closure plan and request modifications to the plan

no later than 30 days from the date of the notice. He will also, in response to a request or at his own discretion, hold a public hearing whenever such a hearing might clarify one or more issues concerning a post-closure plan. The owner or operator will give public notice, as provided for in Rule 0400-12-01-.07(7)(e) and as prepared and required by the Commissioner, of the hearing at least 30 days before it occurs. (Public notice of the hearing may be given at the same time as notice of the opportunity for the public to submit written comments, and the two notices may be combined.) The owner or operator shall provide proof of the completion of all notice requirements to the Commissioner within ten (10) days following conclusion of the public notice procedures. The Commissioner will approve, modify, or disapprove the plan within 90 days of its receipt. If the Commissioner does not approve the plan he shall provide the owner or operator with a detailed written statement of reasons for the refusal and the owner or operator must modify the plan or submit a new plan (four (4) copies) for approval within 30 days after receiving such written statement. The Commissioner will approve or modify this plan in writing within 60 days. If the Commissioner modifies the plan, this modified plan becomes the approved post-closure plan. The Commissioner must ensure that the approved post-closure plan is consistent with subparagraphs (h) through (k) of this paragraph. A copy of the modified plan with a detailed statement of reasons for the modifications must be mailed to the owner or operator.

7. The post-closure plan and length of the post-closure care period may be modified any time prior to the end of the post-closure care period in either of the following two ways:

(i) The owner or operator or any member of the public may petition the Commissioner to extend or reduce the post-closure care period applicable to a hazardous waste management unit or facility based on cause, or alter the requirements of the post-closure care period based on cause.

(I) The petition must include evidence demonstrating that:

I. The secure nature of the hazardous waste management unit or facility makes the post-closure care requirement(s) unnecessary or supports reduction of the post-closure care period specified in the current post-closure plan (e.g., leachate or ground-water monitoring results, characteristics of the wastes, application of advanced technology, or alternative disposal, treatment, or re-use techniques indicate that the facility is secure), or

II. The requested extension in the post-closure care period or alteration of post-closure care requirements is necessary to prevent threats to human health and the environment (e.g., leachate or ground-water monitoring results indicate a potential for migration of hazardous wastes at levels which may be harmful to human health and the environment).

(II) These petitions will be considered by the Commissioner only when they present new and relevant information not previously considered by the Commissioner. Whenever the Commissioner is considering a petition, he will provide the owner or operator and the public, through a newspaper notice, published by the owner or operator, as provided for in Rule 0400-12-01-.07(7)(e) and as prepared and required by the Commissioner, the opportunity to submit written comments within 30 days of the date of the notice. The Commissioner will also, in response to a request or at his own discretion, hold a public hearing whenever a hearing might clarify one or more issues concerning the post-closure plan. The owner or operator will give the public notice, as provided for in Rule 0400-12-01-.07(7)(e) and as prepared and required by the Commissioner, of the hearing at least 30 days before it occurs. (Public notice of the hearing may be given at the same time as notice of the opportunity for written

public comments, and the two notices may be combined.) The owner or operator shall provide proof of the completion of all notice requirements to the Commissioner within ten (10) days following conclusion of the public notice procedures. After considering the comments, the Commissioner will issue a final determination, based upon the criteria set forth in subpart (i) of this part.

(III) If the Commissioner denies the petition, he will send the petitioner a brief written response giving a reason for the denial.

(ii) The Commissioner may tentatively decide to modify the post-closure plan if he deems it necessary to prevent threats to human health and the environment. He may propose to extend or reduce the post-closure care period applicable to a hazardous waste management unit or facility based on cause or alter the requirements of the post-closure care period based on cause.

(I) The Commissioner will provide the owner or operator and the affected public, through a newspaper notice, published by the owner or operator, as provided for in Rule 0400-12-01-.07(7)(e) and as prepared and required by the Commissioner, the opportunity to submit written comments within 30 days of the date of the notice and the opportunity for a public hearing as in item (i)(II) of this part. The owner or operator shall provide proof of the completion of all notice requirements to the Commissioner within ten (10) days following the conclusion of the public notice procedures. After considering the comments, he will issue a final determination.

(II) The Commissioner will base his final determination upon the same criteria as required for petitions under item (i)(I) of this part. A modification of the post-closure plan may include, where appropriate, the temporary suspension rather than permanent deletion of one or more post-closure care requirements. At the end of the specified period of suspension, the Commissioner would then determine whether the requirement(s) should be permanently discontinued or reinstated to prevent threats to human health and the environment.

(j) Post-closure Notices [40 CFR 265.119]

1. No later than 60 days after certification of closure of each hazardous waste disposal unit, the owner or operator must submit to the local zoning authority, or the authority with jurisdiction over local land use, and to the Commissioner (at least four (4) copies), a record of the type, location, and quantity of hazardous wastes disposed of within each cell or other disposal unit of the facility. For hazardous wastes disposed of before January 12, 1981, the owner or operator must identify the type, location and quantity of the hazardous wastes to the best of his knowledge and in accordance with any records he has kept.

2. Within 60 days of certification of closure of the first hazardous waste disposal unit and within 60 days of certification of closure of the last hazardous waste disposal unit, the owner or operator must:

(i) Record, in accordance with State law, a notation on the deed to the facility property -- or on some other instrument which is normally examined during title search -- that will in perpetuity notify any potential purchaser of the property that:

(I) The land has been used to manage hazardous wastes; and

(II) Its use is restricted under paragraph (7) of Rule 0400-12-01-.05; and

(III) The survey plat and record of the type, location, and quantity of hazardous wastes disposed of within each cell or other hazardous waste disposal unit of the facility required by subparagraph (g) of this paragraph and part 1 of this subparagraph have been filed with the local zoning authority or the authority with jurisdiction over local land use and with the Commissioner; and

(II) Submit a certification signed by the owner or operator that he has recorded the notation specified in subpart (I) of this part and a copy of the document in which the notation has been placed, to the Commissioner.

3. If the owner or operator or any subsequent owner of the land upon which a hazardous waste disposal unit was located wishes to remove hazardous wastes and hazardous waste residues, the liner, if any, and all contaminated structures, equipment, and soils, he must request a modification to the approved post-closure plan in accordance with the requirements of part (I)7 of this paragraph. The owner or operator must demonstrate that the removal of hazardous wastes will satisfy the criteria of part (h)3 of this paragraph. By removing hazardous waste, the owner or operator may become a generator of hazardous waste and must manage it in accordance with all applicable requirements of this chapter. If the owner or operator is granted approval to conduct the removal activities, the owner or operator may request that the Commissioner approve either:

(I) The removal of the notation on the deed to the facility property or other instrument normally examined during title search, or

(II) The addition of a notation to the deed or instrument indicating the removal of the hazardous waste.

(k) Certification of Completion of Post-closure Care [40 CFR 265.120]

No later than 60 days after the completion of the established post-closure care period for each hazardous waste disposal unit, the owner or operator must submit to the Commissioner, by registered mail, a certification that the post-closure care period for the hazardous waste disposal unit was performed in accordance with the specifications in the approved post-closure plan. The certification must be signed by the owner or operator and a Professional Engineer. Documentation supporting the qualified Professional Engineer's certification must be furnished to the Commissioner upon request until he releases the owner or operator from the financial assurance requirements for post-closure care under part (8)(f)3 of this rule.

(l) Post-closure Requirements for Facilities that Obtain Enforceable Documents in Lieu of Post-closure Permits [40 CFR 265.121]

1. Owners and operators who are subject to the requirement to obtain a post-closure permit under Rule 0400-12-01-.07(1)(b)2, but who obtain enforceable documents in lieu of post-closure permits, as provided under Rule 0400-12-01-.07(1)(b)9, must comply with the following requirements:

(I) The requirements to submit information about the facility in Rule 0400-12-01-.07(5)(b)14;

(II) The requirements for facility-wide corrective action in Rule 0400-12-01-.06(6)(l);

(III) The requirements of Rules 0400-12-01-.06(6)(b) through (k).

2. (I) The Commissioner, in issuing enforceable documents under this subparagraph in lieu of permits, will assure a meaningful opportunity for public involvement which, at a minimum, includes public notice, published by the owner or operator, as provided for in Rule 0400-12-01-.07(7)(e) and as prepared and required by the Commissioner, and opportunity for public comment (the owner or operator shall

provide proof of the completion of all notice requirements to the Commissioner within ten (10) days following conclusion of the public notice procedures):

(I) When the Department becomes involved in a remediation at the facility as a regulatory or enforcement matter;

(II) On the proposed preferred remedy and the assumptions upon which the remedy is based, in particular those related to land use and site characterization; and

(III) At the time of a proposed decision that remedial action is complete at the facility. These requirements must be met before the Commissioner may consider that the facility has met the requirements of Rule 0400-12-01-.07(1)(b)9, unless the facility qualifies for a modification to these public involvement procedures under subpart (ii) or (iii) of this part.

(ii) If the Commissioner determines that even a short delay in the implementation of a remedy would adversely affect human health or the environment, the Commissioner may delay compliance with the requirements of subpart (i) of this part and implement the remedy immediately. However, the Commissioner must assure involvement of the public at the earliest opportunity, and, in all cases, upon making the decision that additional remedial action is not needed at the facility.

(iii) The Commissioner may allow a remediation initiated prior to the effective date of these regulations to substitute for a corrective action required under a post-closure permit even if the public involvement requirements of subpart (i) of this part have not been met so long as the Commissioner assures that notice and comment on the decision that no further remediation is necessary to protect human health and the environment takes place at the earliest reasonable opportunity after the effective date of these regulations.

(8) Financial Requirements [40 CFR 265 Subpart H]

(a) Applicability [40 CFR 265.140]

1. The requirements of subparagraphs (c), (d) and (h) through (l) apply to owners or operators of all hazardous waste facilities, except as provided otherwise in this subparagraph or in subparagraph (1)(b) of this rule.

2. The requirements of subparagraphs (e) and (f) apply only to owners and operators of:

(i) Disposal facilities;

(ii) Tank systems that are required under subparagraph (10)(h) of this rule to meet the requirements for landfills; and

(iii) Containment buildings that are required under subparagraph (30)(c) of this rule to meet the requirements for landfills.

3. State and Federal governments are exempt from the requirements of this paragraph except for part (f)5. Part (f)5 of this paragraph shall be applicable to permitted facilities or any site that otherwise will eventually cease to operate while containing, storing, or otherwise treating hazardous wastes.

4. The Commissioner may replace all or part of the requirements of this paragraph applying to a regulated unit with alternative requirements for financial assurance set out in the permit or in an enforceable document (as defined in Rule 0400-12-01-.07(1)(b)9), where the Commissioner:

(i) Prescribes alternative requirements for the regulated unit under part (6)(a)6 and/or subparagraph (7)(a) of this rule, and

(ii) Determines that it is not necessary to apply the requirements of this paragraph because the alternative financial assurance requirements will protect human health and the environment.

(b) Definitions of Terms as Used in this Paragraph [40 CFR 265.141]

1. "Closure plan" means the plan for closure prepared in accordance with the requirements of subparagraph (7)(c) of this rule.

2. "Current closure cost estimate" means the most recent of the estimates prepared in accordance with parts (c)1, 2, and 3 of this paragraph.

3. "Current post-closure cost estimate" means the most recent of the estimates prepared in accordance with parts (e)1, 2, and 3 of this paragraph.

4. "Division Director" means the Director of the Division of Solid Waste Management of the Department. This person also serves as the Technical Secretary to the Board, and functions as the chief of staff to both the Commissioner and the Board in matters relating to these rules and their implementation.

5. "Parent corporation" means a corporation which directly owns at least 50 percent of the voting stock of the corporation which is the facility owner or operator; the latter corporation is deemed a "subsidiary" of the parent corporation.

6. "Post-closure plan" means the plan for post-closure care prepared in accordance with the requirements of subparagraphs (7)(h) through (k) of this rule.

7. The following terms are used in the specifications for the financial tests for closure, post-closure care, and liability coverage. The definitions are intended to assist in the understanding of these regulations and are not intended to limit the meanings of terms in a way that conflicts with generally accepted accounting practices.

"Assets" means all existing and all probable future economic benefits obtained or controlled by a particular entity.

"Current assets" means cash or other assets or resources commonly identified as those which are reasonably expected to be realized in cash or sold or consumed during the normal operating cycle of the business.

"Current liabilities" means obligations whose liquidation is reasonably expected to require the use of existing resources properly classifiable as current assets or the creation of other current liabilities.

"Current plugging and abandonment cost estimate" means the most recent of the estimates prepared in accordance with Tennessee Rule 1200-04-06-.09(10) or 40 CFR 144.62(a), (b), and (c) (as this federal regulation exists on the effective date of this rulemaking), whichever is greater.

"Independently audited" refers to an audit performed by an independent certified public accountant in accordance with generally accepted auditing standards.

"Liabilities" means probable future sacrifices of economic benefits arising from present obligations to transfer assets or provide services to other entities in the future as a result of past transactions or events.

"Net working capital" means current assets minus current liabilities.

"Net worth" means total assets minus total liabilities and is equivalent to owner's equity.

"Tangible net worth" means the tangible assets that remain after deducting liabilities; such assets would not include intangibles such as goodwill and rights to patents or royalties.

8. In the liability insurance requirements the terms "bodily injury" and "property damage" shall have the meanings given these terms by applicable Tennessee law. However, these terms do not include those liabilities which, consistent with standard industry practice, are excluded from coverage in liability policies for bodily injury and property damage. The Department intends the meanings of other terms used in the liability insurance requirements to be consistent with their common meanings within the insurance industry. The definitions given below of several of the terms are intended to assist in the understanding of these regulations and are not intended to limit their meanings in a way that conflicts with general insurance industry usage.

"Accidental occurrence" means an accident, including continuous or repeated exposure to conditions, which results in bodily injury or property damage neither expected nor intended from the standpoint of the insured.

"Legal defense costs" means any expenses that an insurer incurs in defending against claims of third parties brought under the terms and conditions of an insurance policy.

"Nonsudden accidental occurrence" means an occurrence which takes place over time and involves continuous or repeated exposure.

"Sudden accidental occurrence" means an occurrence which is not continuous or repeated in nature.

9. "Substantial business relationship" means the extent of a business relationship necessary under applicable Tennessee law to make a guarantee contract issued incident to that relationship valid and enforceable. A "substantial business relationship" must arise from a pattern of recent or ongoing business transactions, in addition to the guarantee itself, such that a currently existing business relationship between the guarantor and the owner or operator is demonstrated to the satisfaction of the Commissioner.

(c) Cost Estimate for Closure [40 CFR 265.142]

1. The owner or operator must have a detailed written estimate, in current dollars, of the cost of closing the facility in accordance with the requirements in subparagraphs (7)(b) through (f) and applicable closure requirements in subparagraphs (10)(h), (11)(i), (12)(i), (13)(k), (14)(k), (15)(l), (16)(l), (17)(e), and (30)(c) of this rule.

(i) The estimate must equal the cost of final closure at the point in the facility's active life when the extent and manner of its operation would make closure the most expensive, as indicated by its closure plan (see part (7)(c)2 of this rule); and

(ii) The closure cost estimate must be based on the costs to the owner or operator of hiring a third party to close the facility. A third party is a party who is neither a parent nor a subsidiary of the owner or operator. (See definition of parent corporation in part (b)5 of this paragraph.) The owner or operator may use costs for on-site disposal if he can demonstrate that on-site disposal capacity will exist at all times over the life of the facility.

(iii) The closure cost estimate may not incorporate any salvage value that may be realized with the sale of hazardous wastes, or non-hazardous wastes if

applicable under part (7)(d)4 of this rule, facility structures or equipment, land, or other assets associated with the facility at the time of partial or final closure.

(iv) The owner or operator may not incorporate a zero cost for hazardous wastes, or non-hazardous wastes if applicable under part (7)(d)4 of this rule, that might have economic value.

2. During the active life of the facility, the owner or operator must adjust the closure cost estimate for inflation within 60 days prior to the anniversary date of the establishment of the financial instrument(s) used to comply with subparagraph (d) of this paragraph. For owners and operators using the financial test or corporate guarantee, the closure cost estimate must be updated for inflation within 30 days after the close of the firm's fiscal year and before submission of updated information to the Division Director as specified in subpart (g)5(v) of this paragraph. The adjustment may be made by recalculating the closure cost estimate in current dollars, or by using an inflation factor derived from the most recent Implicit Price Deflator for Gross National Product published by the U.S. Department of Commerce in its Survey of Current Business, as specified in subparts (i) and (ii) of this part. The inflation factor is the result of dividing the latest published annual Deflator by the Deflator for the previous year.

(i) The first adjustment is made by multiplying the closure cost estimate by the inflation factor. The result is the adjusted closure cost estimate.

(ii) Subsequent adjustments are made by multiplying the latest adjusted closure cost estimate by the latest inflation factor.

3. During the active life of the facility, the owner or operator must revise the closure cost estimate no later than 30 days after a revision has been made to the closure plan which increases the cost of closure. If the owner or operator has an approved closure plan, the closure cost estimate must be revised no later than 30 days after the Commissioner has approved the request to modify the closure plan, if the change in the closure plan increases the cost of closure. The revised closure cost estimate must be adjusted for inflation as specified in part 2 of this subparagraph.

4. The owner or operator must keep the following at the facility during the operating life of the facility: The latest closure cost estimate prepared in accordance with parts 1 and 3 of this subparagraph and, when this estimate has been adjusted in accordance with part 2 of this subparagraph, the latest adjusted closure cost estimate.

(d) Financial Assurance for Closure [40 CFR 265.143]

By 90 days after the effective date of these regulations, an owner or operator of each facility must file and maintain with the Division Director financial assurance for closure of the facility in accordance with the requirements of this subparagraph.

1. The owner or operator must choose from the financial assurance mechanisms as specified in subparagraph (g) of this paragraph.

(Note: See also subparagraphs (h), (i), (j) and (k) of this paragraph.)

2. The owner or operator must file and maintain financial assurance in an amount at least equal to the current closure cost estimate.

(i) Whenever the closure cost estimate increases to an amount greater than the amount of financial assurance currently filed with the Division Director, the owner or operator must, within 60 days after the increase, file additional financial assurance at least equal to this increase.

(ii) Whenever the current closure cost estimate decreases, and upon the written

request of the owner or operator, the Division Director shall, provided he validates the decrease, reduce the amount of financial assurance required for the facility to the amount of the current closure cost estimate. Upon such occurrence, the Division Director shall, as appropriate considering the financial assurance mechanism(s) on file, either cause to be released to the owner or operator cash or collateral equal to this reduction or allow the owner or operator to substitute for the mechanism(s) on file a new mechanism(s) in the reduced amount.

3. The financial assurance must be maintained until the Commissioner or Board releases the owner or operator from the requirements of this subparagraph, as specified in this part, or until the Commissioner or Board orders forfeiture of the financial assurance as provided in part 4 of this subparagraph.

(i) Release of the owner or operator from the requirements of this subparagraph

Within 60 days after receiving certifications from the owner or operator and a qualified Professional Engineer that final closure has been completed in accordance with the approved closure plan, the Division Director will notify the owner or operator in writing that he is no longer required by this subparagraph to maintain financial assurance for final closure of the facility, unless the Commissioner or Board has reason to believe that final closure has not been in accordance with the approved closure plan. The Division Director shall provide the owner or operator a detailed written statement of any such reason to believe that closure has not been in accordance with the approved closure plan.

(ii) Financial assurance will normally be released in the form(s) it was submitted. However, where such release involves an amount equal to only a portion of the funds assured by a financial assurance mechanism (see subparagraphs (i) and (j) of this paragraph), the Commissioner shall, as appropriate considering the type of mechanism involved, either cause to be released to the owner or operator cash or collateral equal to that amount or allow the owner or operator to substitute for the mechanism on file a new mechanism(s) reduced by that amount.

4. The Commissioner or Board, as appropriate, may order that any financial assurance filed by an owner or operator pursuant to this subparagraph be forfeited to the State if the Commissioner or Board determines that the owner or operator has failed to perform final closure in accordance with the approved closure plan when required to do so. Any such forfeiture action shall follow the procedures provided in subparagraphs (l) and (m) of this paragraph.

(Note: The original effective date of these regulations was October 31, 1980).

(e) Cost Estimate for Post-closure Care [40 CFR 265.144]

1. The owner or operator of a hazardous waste disposal unit must have a detailed written estimate, in current dollars, of the annual cost of post-closure monitoring and maintenance of the facility in accordance with the applicable post-closure regulations in subparagraphs (7)(h) through (k), (11)(i), (12)(i), (13)(k) and (14)(k) of this rule.

(i) The post-closure cost estimate must be based on the costs to the owner or operator of hiring a third party to conduct post-closure care activities. A third party is a party who is neither a parent nor subsidiary of the owner or operator. (See definition of parent corporation at part (b)5 of this paragraph.)

(ii) The post-closure cost estimate is calculated by multiplying the annual post-closure cost estimate by the number of years of post-closure care required under subparagraph (7)(h) of this rule.

2. During the active life of the facility, the owner or operator must adjust the post-closure cost estimate for inflation within 60 days prior to the anniversary date of the establishment of the financial instrument(s) used to comply with subparagraph (f) of this paragraph. For owners or operators using the financial test or corporate guarantee, the post-closure care cost estimate must be updated for inflation no later than 30 days after the close of the firm's fiscal year and before submission of updated information to the Division Director as specified in subpart (g)4(v) of this paragraph. The adjustment may be made by recalculating the post-closure cost estimate in current dollars or by using an inflation factor derived from the most recent Implicit Price Deflator for Gross National Product published by the U.S. Department of Commerce in its Survey of Current Business as specified in subparts (i) and (ii) of this part. The inflation factor is the result of dividing the latest published annual Deflator by the Deflator for the previous year.

   (i) The first adjustment is made by multiplying the post-closure cost estimate by the inflation factor. The result is the adjusted post-closure cost estimate.

   (ii) Subsequent adjustments are made by multiplying the latest adjusted post-closure cost estimate by the latest inflation factor.

3. During the active life of the facility, the owner or operator must revise the post-closure cost estimate no later than 30 days after a revision to the post-closure plan which increases the cost of post-closure care. If the owner or operator has an approved post-closure plan, the post-closure cost estimate must be revised no later than 30 days after the Commissioner has approved the request to modify the plan, if the change in the post-closure plan increases the cost of post-closure care. The revised post-closure cost estimate must be adjusted for inflation as specified in part 2 of this subparagraph.

4. The owner or operator must keep the following at the facility during the operating life of the facility: the latest post-closure cost estimate prepared in accordance with parts 1 and 3 of this subparagraph and, when this estimate has been adjusted in accordance with part 2 of this subparagraph, the latest adjusted post-closure cost estimate.

(f) Additional Procedures for Financial Assurance for Post-Closure Care [40 CFR 265.145]

By 90 days after the effective date of these regulations, an owner or operator of a facility with a hazardous waste disposal unit must file and maintain with the Division Director financial assurance for post-closure care of the disposal unit(s) in accordance with the requirements of this subparagraph.

1. The owner or operator must choose from the financial assurance mechanisms as specified in subparagraph (g) of this paragraph.

   (Note: See also subparagraphs (h), (i), (j) and (k) of this paragraph.)

2. The owner or operator must file and maintain financial assurance in an amount at least equal to the current post-closure cost estimate.

   (i) Whenever the current post-closure cost estimate increases to an amount greater than the amount of financial assurance currently filed with the Division Director, the owner or operator must, within 60 days after the increase, file additional financial assurance at least equal to this increase.

   (ii) Whenever the current post-closure cost estimate decreases during the operating life of the facility, and upon the written request of the owner or operator, the Division Director shall, provided he or she validates the decrease, reduce the amount of financial assurance required for the facility to the amount of the current post-closure cost estimate. Upon such occurrence, the Division Director shall, as appropriate considering the financial assurance mechanism(s) on file, either cause to be released to the owner or operator cash or collateral equal to this

reduction or allow the owner or operator to substitute for the mechanism(s) on file a new mechanism(s) in the reduced amount.

(iii) During the period of post-closure care, the Division Director may reduce the amount of financial assurance required for the facility if the owner or operator demonstrates to the Division Director that the amount currently filed exceeds the remaining cost of post-closure care. Upon such occurrence, the Division Director shall, as appropriate considering the financial assurance mechanism(s) on file, either cause to be released to the owner or operator cash or collateral equal to this reduction or allow the owner or operator to substitute for the mechanism(s) on file a new mechanism(s) in the reduced amount.

3. The financial assurance must be maintained until the Commissioner or Board releases the owner or operator from the requirements of this subparagraph, as specified in this part, or until the Commissioner or Board orders forfeiture of the financial assurance as provided in part 4 of this subparagraph.

(i) Release of the owner or operator from the requirements of the subparagraph

Within 60 days after receiving certifications from the owner or operator and a qualified Professional Engineer that the post-closure care period has been completed for a hazardous waste disposal unit in accordance with the approved post-closure plan, the Division Director will notify the owner or operator in writing that he is no longer required to maintain financial assurance for post-closure care of that unit, unless the Commissioner or Board has reason to believe that post-closure care has not been in accordance with the approved post-closure plan. The Division Director shall provide the owner or operator a detailed written statement of any such reason to believe that post-closure care has not been in accordance with the approved post-closure plan.

(ii) Financial assurance will normally be released in the form(s) it was submitted. However, where such release involves an amount equal to only a portion of the funds assured by a financial assurance mechanism (see subparagraphs (i) and (j) of this paragraph), the Commissioner shall, as appropriate considering the type of mechanism involved, either cause to be released to the owner or operator cash or collateral equal to that amount or allow the owner or operator to substitute for the mechanism on file a new mechanism(s) reduced by that amount.

4. The Commissioner or Board, as appropriate, may order that any financial assurance filed by an owner or operator pursuant to this subparagraph be forfeited to the State if the Commissioner or Board determines that the owner or operator has failed to perform post-closure care in accordance with the approved post- closure plan. Any such forfeiture action shall follow the procedures provided in subparagraphs (l) and (m) of this paragraph.

5. If the Commissioner determines that there is a reasonable probability that a facility or site will cease to operate while hazardous waste constituents remain on or in the facility or site, the Commissioner may require the posting of financial assurance or the payment of a disposal fee for the perpetual care of the facility or site. This financial assurance or fee shall be in addition to any other financial assurance or fee. The amount of the financial assurance or fee shall be based upon the estimated cost of maintaining the facility or site in perpetuity. The Commissioner may institute the requirement to pay this financial assurance or fee through a permit modification or through the issuance of an order. Such permit modification or order shall specify the manner of payment and the terms for use of the funds paid.

(Note: The original effective date of these regulations was October 31, 1980.)

(g) Mechanisms for Financial Assurance [40 CFR 265.143 and 265.145]

By the effective date of these regulations, an owner or operator of each facility must establish and maintain with the Division Director financial assurance for closure of the facility. He must choose from the options as specified in parts 1 through 5 of this subparagraph.

1. Closure and/or Post-closure Care Trust Fund

An owner or operator may satisfy the requirements of subparagraphs (d) and/or (f) of this paragraph by establishing and maintaining a closure trust fund which conforms to the requirements of this part and submitting an originally signed duplicate of the trust agreement to the Division Director.

(i) The trustee of the trust fund must be licensed to do business as a trustee in Tennessee.

(ii) The wording of the trust agreement must be identical to the wording specified in Rule 0400-12-01-.06(8)(p)1(i), and the trust agreement must be accompanied by a formal certification of acknowledgment (for example, see Rule 0400-12-01-.06(8)(p)1(ii)). Schedule A of the trust agreement must be updated within 60 days after a change in the amount of the current closure and/or post-closure care cost estimate covered by the agreement.

(iii) Payments into the trust fund must be made annually by the owner or operator over the 20 years beginning with the effective date of these regulations or over the remaining operating life of the facility as estimated in the closure plan, whichever period is shorter; this period is hereafter referred to as the "pay-in period." The payments into the closure and/or post-closure care trust fund must be made as follows:

(I) The first payment must be made by the effective date of these regulations, except as provided in subpart (v) of this part. The first payment must be at least equal to the current closure and/or post-closure care cost estimate, except as provided in part 6 of this subparagraph, divided by the number of years in the pay-in period.

(II) Subsequent payments must be made no later than 30 days after each anniversary date of the first payment. The amount of each subsequent payment must be determined by this formula:

$$\text{Next payment} = \frac{CE - CV}{Y}$$

where CE is the current closure and/or post-closure care cost estimate, CV is the current value of the trust fund, and Y is the number of years remaining in the pay-in period.

(iv) The owner or operator may accelerate payments into the trust fund or he may deposit the full amount of the current closure and/or post-closure care cost estimate at the time the fund is established. However, he must maintain the value of the fund at no less than the value that the fund would have if annual payments were made as specified in subpart (iii) of this part.

(v) If the owner or operator establishes a closure and/or post-closure care trust fund after having used one or more alternate mechanisms specified in this paragraph, his first payment must be in at least the amount that the fund would contain if the trust fund were established initially and annual payments made as specified in subpart (iii) of this part.

(vi) After the pay-in period is completed, whenever the current closure and/or post-closure care cost estimate changes, the owner or operator must compare the new estimate with the trustee's most recent annual valuation of the trust fund. If the value of the fund is less than the amount of the new estimate, the owner or operator, within 60 days after the change in the cost estimate, must either deposit an amount into the fund so that its value after this deposit at least equals the amount of the current closure and/or post-closure care cost estimate, or obtain other financial assurance as specified in this paragraph to cover the difference.

(vii) If the value of the trust fund is greater than the total amount of the current closure and/or post-closure care cost estimate, the owner or operator may submit a written request to the Division Director for release of the amount in excess of the current closure and/or post-closure care cost estimate.

(viii) If an owner or operator substitutes other financial assurance as specified in this paragraph for all or part of the trust fund, he may submit a written request to the Division Director for release of the amount in excess of the current closure and/or post-closure care cost estimate covered by the trust fund.

(ix) Within 60 days after receiving a request from the owner or operator for release of funds as specified in subpart (vii) or (viii) of this part, the Commissioner will instruct the trustee to release to the owner or operator such funds as the Commissioner specifies in writing.

(x) After beginning partial or final closure and/or post-closure care, an owner or operator or another person authorized to conduct partial or final closure may request reimbursements for partial or final closure and/or post-closure care expenditures by submitting itemized bills to the Division Director. The owner or operator may request reimbursements for partial closure and/or post-closure care only if sufficient funds are remaining in the trust fund to cover the maximum costs of closing the facility over its remaining operating life and/or remaining costs of post-closure care of the facility. No later than 60 days after receiving bills for partial or final closure and/or post-closure care activities, the Commissioner will instruct the trustee to make reimbursements in those amounts as the Commissioner specifies in writing, if the Division Director determines that the partial or final closure and/or post-closure care expenditures are in accordance with the approved closure and/or post-closure care plan, or otherwise justified. If the Commissioner has reason to believe that the maximum cost of closure and/or post-closure care over the remaining life of the facility and/or post-closure care period will be significantly greater than the value of the trust fund, he may withhold reimbursements of such amounts as he deems prudent until he determines, in accordance with part (d)4 and/or part (f)4 of this paragraph that the owner or operator is no longer required to maintain financial assurance for final closure and/or post-closure care of the facility. If the Commissioner does not instruct the trustee to make such reimbursements, he will provide to the owner or operator a detailed written statement of reasons.

(xi) The Commissioner will agree to termination of the trust when:

(I) An owner or operator substitutes alternate financial assurance as specified in this paragraph; or

(II) The Commissioner releases the owner or operator from the requirements of subparagraphs (d) and/or (f) of this paragraph in accordance with part (d)4 and/or part (f)4 of this paragraph.

2. Surety Bond Guaranteeing Payment into a Closure and/or Post-closure Trust Fund

An owner or operator may satisfy the requirements of subparagraphs (d) and/or (f) of this paragraph by obtaining a surety bond which conforms to the requirements of this part and submitting the bond to the Division Director.

(i) The surety company issuing the bond must be licensed to do business as a surety in Tennessee and must be among those listed as acceptable sureties by the Commissioner.

(ii) The wording of the surety bond must be identical to the wording specified in Rule 0400-12-01-.06(8)(p)2.

(iii) The owner or operator who uses a surety bond to satisfy the requirements of subparagraphs (d) and/or (f) of this paragraph must also establish a standby trust fund. Under the terms of the bond, all payments made thereunder will be deposited by the surety directly into the standby trust fund in accordance with instructions from the Commissioner. This standby trust fund must meet the requirements specified in part 1 of this subparagraph, except that:

(I) An originally signed duplicate of the trust agreement must be submitted to the Division Director with the surety bond; and

(II) Until the standby trust fund is funded pursuant to the requirements of this paragraph, the following are not required by these regulations:

I. Payments into the trust fund as specified in part 1 of this subparagraph;

II. Updating of Schedule A of the trust agreement (see Rule 0400-12-01-.06(8)(p)1) to show current closure and/ or post-closure care cost estimates;

III. Annual valuations as required by the trust agreement; and

IV. Notices of nonpayment as required by the trust agreement.

(iv) The bond must guarantee that the owner or operator will:

(I) Fund the standby trust fund in an amount equal to the penal sum of the bond before the beginning of final closure and/or post-closure care of the facility; or

(II) Fund the standby trust fund in an amount equal to the penal sum within 15 days after an administrative order to begin final closure and/or post-closure care issued by the Commissioner becomes final, or within 15 days after an order to begin final closure and/or post-closure care is issued by the Commissioner, the Board or court of competent jurisdiction; or

(III) Provide alternate financial assurance as specified in this paragraph, and obtain the Division Director's written approval of the assurance provided, within 90 days after receipt by both the owner or operator and the Division Director of a notice of cancellation of the bond from the surety.

(v) Under the terms of the bond, the surety will become liable on the bond obligation when the owner or operator fails to perform as guaranteed by the bond.

(vi) The penal sum of the bond must be in an amount at least equal to the current closure and/or post-closure care estimate, except as provided in subparagraph

(h) of this paragraph.

(vii) Under the terms of the bond, the surety may cancel the bond by sending notice of cancellation by certified mail to the owner or operator and to the Division Director. Cancellation may not occur, however, during the 120 days beginning on the date of receipt of the notice of cancellation by both the owner or operator and the Division Director, as evidenced by the return receipts.

(viii) The owner or operator may cancel the bond if the Commissioner has given prior written consent based on his receipt of evidence of alternate financial assurance as specified in this paragraph.

3. Closure and/or Post-closure Letter of Credit

An owner or operator may satisfy the requirements of subparagraph (d) and/or (f) of this paragraph by obtaining an irrevocable standby letter of credit which conforms to the requirements of this part and submitting the letter to the Division Director.

(i) The issuing institution must be an entity which has the authority to issue letters of credit and whose letter-of-credit operations are regulated and examined by a Federal or State agency.

(ii) The wording of the letter of credit must be identical to the wording specified in Rule 0400-12-01-.06(8)(p)4.

(iii) The letter of credit must be accompanied by a letter from the owner or operator referring to the letter of credit by number, issuing institution, and date, and providing the following information: The Installation Identification Number, name, and address of the facility, and the amount of funds assured for closure and/or post-closure care of the facility by the letter of credit.

(iv) The letter of credit must be irrevocable and issued for a period of at least 1 year. The letter of credit must provide that the expiration date will be automatically extended for a period of at least 1 year unless, at least 120 days before the current expiration date, the issuing institution notifies both the owner or operator and the Division Director by certified mail of a decision not to extend the expiration date. Under the terms of the letter of credit, the 120 days will begin on the date when both the owner or operator and the Division Director have received the notice, as evidenced by the return receipts.

(v) The Division Director may draw on the Letter of Credit upon forfeiture as provided in parts (d)4 and/or (f)4 of this paragraph. If the owner or operator does not establish alternate financial assurance as specified in this paragraph and obtain written approval of such alternate assurance from the Division Director within 90 days after receipt by both the owner or operator and the Division Director of a notice from the issuing institution that it has decided not to extend the letter of credit beyond the current expiration date, the Division Director will also draw on the letter of credit. The Division Director may delay the drawing if the issuing institution grants an extension of the term of the credit. During the last 30 days of any such extension the Division Director will draw on the letter of credit if the owner or operator has failed to provide alternate financial assurance as specified in this paragraph and obtain written approval of such assurance from the Division Director.

(vi) The Commissioner will return the letter of credit to the issuing institution for termination when:

(I) An owner or operator substitutes alternate financial assurance as specified in this paragraph; or

(II) The Commissioner releases the owner or operator from the requirements of this paragraph in accordance with parts (d)4 and/or (f)4 of this paragraph.

4. Closure and/or Post-closure Care Insurance

An owner or operator may satisfy the requirements of subparagraphs (d) and/or (f) of this paragraph by obtaining closure and/or post-closure care insurance which conforms to the requirements of this part and submitting a certificate of such insurance to the Division Director. By the effective date of these regulations the owner or operator must submit to the Division Director a letter from an insurer stating that the insurer is considering issuance of closure and/or post-closure care insurance conforming to the requirements of this part to the owner or operator. Within 90 days after the effective date of these regulations, the owner or operator must submit the certificate of insurance to the Division Director or establish other financial assurance as specified in this paragraph.

(i) The insurer must be licensed to transact the business of insurance, or eligible to provide insurance as an excess or surplus lines insurer, in the State of Tennessee and have an A. M. Best rating of at least A or A- or have special approval from the Commissioner. An insurer that is a "captive insurance company", as that term is used in T.C.A. sections 56-13-106 through 56-13-133, may not be utilized unless the Commissioner determines that such captive insurance company offers coverage that is equivalent in protection to other insurance companies or other allowable financial assurance mechanisms.

(ii) The wording of the certificate of insurance must be identical to the wording specified in Rule 0400-12-01-.06(8)(p)5.

(iii) The insurance policy must be issued for a face amount at least equal to the current closure and/or post-closure care cost estimate, except as provided in subparagraph (h) of this paragraph. The term "face amount" means the total amount the insurer is obligated to pay under the policy. Actual payments by the insurer will not change the face amount, although the insurer's future liability will be lowered by the amount of the payments.

(iv) The insurance policy must guarantee that funds will be available to close the facility whenever final closure occurs and/or to provide post-closure care of the facility whenever the post-closure period begins. The policy must also guarantee that once final closure and/or the post-closure care period begins, the insurer will be responsible for paying out funds, up to an amount equal to the face amount of the policy, upon the direction of the Division Director, to such party or parties as the Division Director specifies.

(v) Under an insurance policy which guarantees the availability of funds for final closure and/or post-closure care, after beginning partial or final closure, an owner or operator or any other person authorized to conduct closure and/or post-closure care may request reimbursements for closure and/or post-closure care expenditures by submitting itemized bills to the Division Director. The owner or operator may request reimbursements for partial closure only if the remaining value of the policy is sufficient to cover the maximum costs of closing the facility over its remaining operating life. Within 60 days after receiving bills for closure and/or post-closure care activities, the Division Director will instruct the insurer to make reimbursements in such amounts as the Division Director specifies in writing if the Division Director determines that the partial or final closure and/or post-closure care expenditures are in accordance with the approved closure plan or otherwise justified. If the Division Director has reason to believe that the maximum cost of closure and/or post-closure care over the remaining life of the facility will be significantly greater than the face amount of the policy, he may

withhold reimbursement of such amounts as he deems prudent until the owner or operator is released from the financial assurance requirement as provided in part (d)3 and/or (f)3 of this paragraph. If the Division Director does not instruct the insurer to make such reimbursements, he will provide to the owner or operator a detailed written statement of reasons.

(vi) Upon forfeiture of financial assurance as provided in parts (d)4 and (f)4 of this paragraph, the Division Director will direct the insurer to pay the full face amount to the State.

(vii) The owner or operator must maintain the policy in full force and effect until the Division Director, Commissioner, or Board releases the financial assurance mechanism as provided in this paragraph. Failure to pay the premium, without substitution of alternate financial assurance as specified in this paragraph, will constitute a significant violation of these regulations, warranting such remedy as the Commissioner deems necessary. Such violation will be deemed to begin upon receipt by the Division Director of a notice of future cancellation, termination, or failure to renew due to nonpayment of the premium, rather than upon the date of expiration.

(viii) Each policy must contain a provision allowing assignment of the policy to a successor owner or operator. Such assignment may be conditional upon consent of the insurer, provided such consent is not unreasonably refused.

(ix) The policy must provide that the insurer may not cancel, terminate, or fail to renew the policy except for failure to pay the premium. The automatic renewal of the policy must, at a minimum, provide the insured with the option of renewal at the face amount of the expiring policy. If there is a failure to pay the premium, the insurer may elect to cancel, terminate, or fail to renew the policy by sending notice by certified mail to the owner or operator and the Division Director. Cancellation, termination, or failure to renew may not occur, however, during the 120 days beginning with the date of receipt of the notice by both the Division Director and the owner or operator, as evidenced by the return receipts. Cancellation, termination, or failure to renew may not occur and the policy will remain in full force and effect in the event that on or before the date of expiration:

(I) The Division Director deems the facility abandoned; or

(II) Interim status is terminated or revoked; or

(III) Closure is ordered by the Commissioner, the Board, or a court of competent jurisdiction; or

(IV) The owner or operator is named as debtor in a voluntary or involuntary proceeding under Title 11 (Bankruptcy), U.S. Code; or

(V) The premium due is paid.

(x) The Commissioner will give written consent to the owner or operator that he may terminate the insurance policy when:

(I) An owner or operator substitutes alternate financial assurance as specified in this paragraph; or

(II) The Commissioner releases the owner or operator from the requirements of this paragraph in accordance with part (d)3 and/or part (f)3 of this paragraph.

5. Personal Bond Supported by Securities

An owner or operator may satisfy the requirements of subparagraph (d) and/or (f) of this paragraph by filing his personal performance guarantee accompanied by collateral in the form of securities. He must guarantee to perform final closure in accordance with the closure plan and other requirements of interim status whenever required to do so, and/or guarantee to perform post-closure care in accordance with the post-closure plan and other requirements of interim status. The wording of the personal bond supported by securities must be identical to the wording specified in Rule 0400-12-01-.06(8)(p)15. The securities supporting this guarantee must be fully registered as to principal and interest in such manner as to identify the State and the Department as holder of such collateral and to also identify that person filing such collateral. These securities must have a current market value at least adequate to provide the necessary financial assurance, and must be included among the following types:

(i) Negotiable certificates of deposit assigned irrevocably to the State.

(I) Such certificates of deposit must be automatically renewable and must be assigned to the State in writing and recorded as such in the records of the financial institution issuing such certificate.

(II) Such certificates of deposit must also include a statement signed by an officer of the issuing financial institution which waives all rights of lien which the institution has or might have against the certificate.

(ii) Negotiable United States Treasury securities assigned irrevocably to the State.

(iii) Negotiable general obligation municipal or corporate bonds which have at least an "A" rating by Moody's and/or Standard and Poor's rating services and which are assigned irrevocably to the State.

6. Personal Bond Supported by Cash

An owner or operator may satisfy the requirements of subparagraph (d) and/or (f) of this paragraph by filing his personal performance guarantee accompanied by cash in an amount at least adequate to provide the necessary financial assurance. He must guarantee to perform final closure in accordance with the closure plan and other requirements of interim status whenever required to do so and/or guarantee to perform post-closure care in accordance with the post-closure plan and other requirements of interim status.

7. Financial Test and Corporate Guarantee for Closure and/or Post-closure Care

(i) An owner or operator may satisfy the requirements of subparagraphs (d) and/or (f) of this paragraph by demonstrating that he passes a financial test as specified in this part. To pass this test the owner or operator must meet the criteria of either item (I) or (II) of this subpart as follows:

(I) The owner or operator must have:

I. Two of the following three ratios: A ratio of total liabilities to net worth less than 2.0; a ratio of the sum of net income plus depreciation, depletion, and amortization to total liabilities greater than 0.1; and a ratio of current assets to current liabilities greater than 1.5; and

II. Net working capital and tangible net worth each at least six times the sum of the current closure and post-closure cost estimates and the current plugging and abandonment cost estimates; and

III. Tangible net worth of at least $10 million; and

IV. Assets located in the United States amounting to at least 90 percent of total assets or at least six times the sum of the current closure and post-closure cost estimates and the current plugging and abandonment cost estimates.

(II) The owner or operator must have:

I. A current rating for his most recent bond issuance of AAA, AA, A, or BBB as issued by Standard and Poor's or Aaa, Aa, A, or Baa as issued by Moody's; and

II. Tangible net worth at least six times the sum of the current closure and post-closure cost estimates and the current plugging and abandonment cost estimates; and

III. Tangible net worth of at least $10 million; and

IV. Assets located in the United States amounting to at least 90 percent of total assets or at least six times the sum of the current closure and post-closure cost estimates and the current plugging and abandonment cost estimates.

(ii) The phrase "current closure and post-closure cost estimates" as used in subpart (i) of this part refers to the cost estimates required to be shown in paragraphs 1 through 4 of the letter from the owner's or operator's chief financial officer (Rule 0400-12-01-.06(8)(p)6). The phrase "current plugging and abandonment cost estimates" as used in subpart (i) of this part refers to the cost estimates required to be shown in paragraphs 1 through 4 of the letter from the owner's or operator's chief financial officer (See 40 CFR 144.70(f), as that Federal regulation exists on the effective date of this rulemaking, or equivalent State requirement under Chapter 1200-04-06).

(iii) To demonstrate that he meets this test, the owner or operator must submit the following items to the Division Director:

(I) A letter signed by the owner's or operator's chief financial officer and worded as specified in Rule 0400-12-01-.06(8)(p)6; and

(II) A copy of the independent certified public accountant's report on examination of the owner's or operator's financial statements for the latest completed fiscal year; and

(III) A special report from the owner's or operator's independent certified public accountant to the owner or operator stating that:

I. He has compared the data which the letter from the chief financial officer specifies as having been derived from the independently audited, year-end financial statements for the latest fiscal year with the amounts in such financial statements; and

II. In connection with that procedure, no matters came to his attention which caused him to believe that the specified data should be adjusted.

(iv) The owner or operator may obtain a one time extension of the time allowed in subparagraph (d) and (f) of this paragraph for submission of the documents

specified in subpart (iii) of this part if the fiscal year of the owner or operator ends during the 90 days prior to the effective date of these regulations and if the year-end financial statements for that fiscal year will be audited by an independent certified public accountant. The extension will end no later than 90 days after the end of the owner's or operator's fiscal year. To obtain the extension, the owner's or operator's chief financial officer must send, by 90 days after the effective date of these regulations, a letter to the Division Director which must:

(I) Request the extension;

(II) Certify that he has grounds to believe that the owner or operator meets the criteria of the financial test;

(III) Specify for each facility to be covered by the test the Installation Identification Number, name, address, and current closure and post-closure cost estimates to be covered by the test;

(IV) Specify the date ending the owner's or operator's last complete fiscal year before the date 90 days after the effective date of these regulations;

(V) Specify the date, no later than 90 days after the end of such fiscal year, when he will submit the documents specified in subpart (iii) of this part; and

(VI) Certify that the year-end financial statements of the owner or operator for such fiscal year will be audited by an independent certified public accountant.

(v) After the initial submission of items specified in subpart (iii) of this part, the owner or operator must send updated information to the Division Director within 90 days after the close of each succeeding fiscal year. This information must consist of all three items specified in subpart (iii) of this part.

(vi) If the owner or operator no longer meets the requirements of subpart (i) of this part, he must send notice to the Division Director of intent to establish alternate financial assurance as specified in this paragraph. The notice must be sent by certified mail within 90 days after the end of the fiscal year for which the year-end financial data show that the owner or operator no longer meets the requirements. The owner or operator must provide the alternate financial assurance within 120 days after the end of such fiscal year.

(vii) The Division Director may, based on a reasonable belief that the owner or operator may no longer meet the requirements of subpart (i) of this part, require reports of financial condition at any time from the owner or operator in addition to those specified in subpart (iii) of this part. If the Division Director finds, on the basis of such reports or other information, that the owner or operator no longer meets the requirements of subpart (i) of this part, the owner or operator must provide alternate financial assurance as specified in this paragraph within 30 days after notification of such a finding.

(viii) The Commissioner may disallow use of this test on the basis of qualifications in the opinion expressed by the independent certified public accountant in his report on examination of the owner's or operator's financial statements (see item (iii)(II) of this part). An adverse opinion or a disclaimer of opinion will be cause for disallowance. The Commissioner will evaluate other qualifications on an individual basis. The owner or operator must provide alternate financial assurance as specified in this paragraph within 30 days after notification of the disallowance.

(ix) The owner or operator is no longer required to submit the items specified in subpart (iii) of this part when:

(I) An owner or operator substitutes alternate financial assurance as specified in this paragraph; or

(II) The Commissioner or Board releases the owner or operator from the requirements of this paragraph in accordance with part (d)3 and/or (f)3 of this paragraph.

(x) An owner or operator may meet the requirements of subparagraphs (d) and/or (f) of this paragraph by obtaining a written guarantee, hereafter referred to as "corporate guarantee". The guarantor must be the direct or higher-tier parent corporation of the owner or operator, a firm whose parent corporation is also the parent corporation of the owner or operator, or a firm with a "substantial business relationship" with the owner or operator. The guarantor must meet the requirements for owners or operators in subpart (i) through (viii) of this part and must comply with the terms of the guarantee. The wording of the guarantee must be identical to the wording specified in Rule 0400-12-01-.06(8)(p)8. A certified copy of the guarantee must accompany the items sent to the Division Director as specified in subpart (iii) of this part. One of these items must be the letter from the guarantor's chief financial officer. If the guarantor's parent corporation is also the parent corporation of the owner or operator, the letter must describe the value received in consideration of the guarantee. If the guarantor is a firm with a "substantial business relationship" with the owner or operator, this letter must describe this "substantial business relationship" and the value received in consideration of the guarantee. The terms of the guarantee must provide that:

(I) If the owner or operator fails to perform final closure of a facility covered by the corporate guarantee in accordance with the closure and/or post-closure plan and other interim status requirements whenever required to do so, the guarantor will do so or establish a trust fund as specified in part 1 of this subparagraph in the name of the owner or operator or forfeit to the State monies in an amount equal to the current closure and/or post-closure cost estimate for the facility as provided in part (d)4 and/or (f)4 of this paragraph as directed by the Commissioner.

(II) The corporate guarantee will remain in force unless the guarantor sends notice of cancellation by certified mail to the owner or operator and to the Division Director. Cancellation may not occur, however, during the 120 days beginning on the date of receipt of the notice of cancellation by both the owner or operator and the Division Director, as evidenced by the return receipts.

(III) If the owner or operator fails to provide alternate financial assurance as specified in this paragraph and obtain the written approval of such alternate assurance from the Division Director within 90 days after receipt by both the owner or operator and the Division Director of a notice of cancellation of the corporate guarantee from the guarantor, the guarantor will provide such alternate financial assurance in the name of the owner or operator.

(h) Use of Multiple Financial Mechanisms

An owner or operator may satisfy the requirements of subparagraphs (d) and/or (f) of this paragraph by establishing more than one financial mechanism per facility. These mechanisms are limited to trust funds, surety bonds, letters of credit, insurance, and personal bonds supported by securities or cash. The mechanisms must be as specified in subparagraph (g) of this paragraph, except that it is the combination of mechanisms, rather than the single mechanism,

which must provide financial assurance for an amount at least equal to the current closure cost and/or post-closure care estimate. If an owner or operator uses a trust fund in combination with a surety bond or a letter of credit, he may use the trust fund as the standby trust fund for the other mechanisms. A single standby trust fund may be established for two or more mechanisms. The Commissioner may use any or all of the mechanisms to provide for closure and/or post-closure care of the facility.

(i) Use of a Financial Mechanism for Multiple Facilities

An owner or operator may use a financial assurance mechanism specified in subparagraph (g) of this paragraph to meet the requirements of subparagraph (d) and/or (f) of this paragraph for more than one facility. Evidence of financial assurance submitted to the Division Director must include a list showing, for each facility, the Installation Identification Number, name, address, and the amount of funds for closure assured by the mechanism. The amount of funds available through the mechanism must be no less than the sum of funds that would be available if a separate mechanism had been established and maintained for each facility. In a financial assurance forfeiture action taken under parts (d)4 and/or (f)4 of this paragraph for closure and/or post-closure care of any of the facilities covered by the mechanism, the Commissioner may order forfeiture of only the amount of funds designated for that facility, unless the owner or operator agrees to the use of additional funds available under the mechanism.

(j) Use of a Mechanism for Financial Assurance of Both Closure and Post-closure Care [40 CFR 265.146]

An owner or operator may satisfy the requirements for financial assurance for both closure and post-closure care for one or more facilities by using a mechanism from subparagraph (g) of this paragraph which meets the requirements of both subparagraphs (d) and (f) of this paragraph. The amount of funds available through the mechanism must be no less than the sum of funds that would be available if a separate mechanism had been established and maintained for financial assurance for closure and for post-closure care.

(k) Substituting Alternate Financial Assurance

In meeting the requirements of subparagraphs (d) or (f) of this paragraph, an owner or operator may substitute alternate financial assurance meeting the requirements of this paragraph for the financial assurance already filed with the Division Director for the facility. However, the existing financial assurance shall not be released by the Division Director until the substitute financial assurance has been received and approved by him or her.

(l) Procedures for Forfeiture of Financial Assurance

1. Upon his or her determination that the owner or operator has failed to perform final closure in accordance with the approved closure plan when required to do so, or has failed to perform post-closure care in accordance with the approved post-closure plan, the Division Director shall cause a notice of non-compliance to be served upon the owner or operator. Such notice shall be hand delivered or forwarded by certified mail. The notice of non-compliance shall specify in what respects the owner or operator has failed to perform as required, and shall establish a schedule of compliance leading to compliance with the plan and other permit requirements as soon as possible.

2. If the Division Director determines that the owner or operator has failed to perform as specified in the notice of non-compliance, or as specified in any subsequent compliance agreement which may have been reached by the owner or operator and the Division Director, the Division Director shall cause a notice of show cause meeting to be served upon the owner or operator. Such notice shall be signed by the Division Director and either hand-delivered or forwarded by certified mail to the owner or operator. The notice of show cause meeting shall establish the date, time, and location of a meeting scheduled to provide the owner or operator with the opportunity to show cause why the Division Director should not pursue forfeiture of the financial assurance filed to guarantee

such performance.

3. If no mutual compliance agreement is reached at the show cause meeting, or upon the Division Director's determination that the owner or operator has failed to perform as specified in such agreement that was reached, the Division Director shall request the Commissioner or Board, as appropriate, to order forfeiture of the financial assurance filed to guarantee such performance.

4. The Commissioner or Board, as appropriate, shall order forfeiture of the financial assurance upon his/her or its validation of the Division Director's determinations and upon his/her or its determination that the procedures of this subparagraph have been followed. The Commissioner or Board may, however, at his/her or its discretion, provide opportunity for the owner or operator to be heard before issuing such order. Upon issuance, a copy of the order shall be hand delivered or forwarded by certified mail to the owner or operator. Any such order issued by the Commissioner or Board shall become effective 30 days after receipt by the owner or operator unless it is appealed to the Board as provided in T.C.A. Section 68-212-113 of the Act.

5. If necessary, upon the effective date of the order of forfeiture, the Commissioner shall give notice to the State Attorney General who shall collect the forfeiture.

6. All forfeited funds shall be deposited in a special account entitled "the hazardous waste trust fund," for use by the Commissioner as set forth in T.C.A. Section 68-212-108(c)(6) of the Act.

(m) Management of Collateral Filed With the State

The Division Director shall obtain possession of, and deposit with the Treasurer of the State of Tennessee, all collateral filed under this paragraph, in accordance with Tennessee Code Annotated Section 8-5-110. At the owner or operator's request, the State Treasurer shall release to the operator any interest income from deposited securities as the same becomes due and payable.

(n) Liability Requirements [40 CFR 265.147]

1. Coverage for Sudden Accidental Occurrences

An owner or operator of a hazardous waste treatment, storage, or disposal facility, or a group of such facilities, must demonstrate financial responsibility for bodily injury and property damage to third parties caused by sudden accidental occurrences arising from operations of the facility or group of facilities. The owner or operator must have and maintain liability coverage for sudden accidental occurrences in the amount of at least $1 million per occurrence with an annual aggregate of at least $2 million, exclusive of legal defense costs. This liability coverage may be demonstrated as specified in subpart (i), (ii), (iii), (iv), (v), or (vi) of this part:

(i) An owner or operator may demonstrate the required liability coverage by having liability insurance as specified in this subpart.

(I) Each insurance policy must be amended by attachment of the Hazardous Waste Facility Liability Endorsement, or evidenced by a Certificate of Liability Insurance. The wording of the endorsement must be identical to the wording specified in Rule 0400-12-01-.06(8)(p)9. The wording of the certificate of insurance must be identical to the wording specified in Rule 0400-12-01-.06(8)(p)10. The owner or operator must submit a signed duplicate original of the endorsement or the certificate of insurance to the Division Director. If requested by the Division Director, the owner or operator must provide a signed duplicate original of the insurance policy.

(II) Each insurance policy must be issued by an insurer which, at a minimum, is licensed to transact the business of insurance, or eligible to provide insurance as an excess or surplus lines insurer, in Tennessee. An insurer that is a "captive insurance company", as that term is used in T.C.A. sections 56-13-106 through 56-13-133, may not be utilized unless the Commissioner determines that such captive insurance company offers coverage that is equivalent in protection to other insurance companies or other allowable financial assurance mechanisms.

(ii) An owner or operator may meet the requirements of this subparagraph by passing a financial test or using the guarantee for liability coverage as specified in parts 6 and 7 of this subparagraph.

(iii) An owner or operator may meet the requirements of this subparagraph by obtaining a letter of credit for liability coverage as specified in part 8 of this subparagraph.

(iv) An owner or operator may meet the requirements of this subparagraph by obtaining a surety bond for liability coverage as specified in part 9 of this subparagraph.

(v) An owner or operator may meet the requirements of this subparagraph by obtaining a trust fund for liability coverage as specified in part 10 of this subparagraph.

(vi) An owner or operator may demonstrate the required liability coverage through the use of combinations of insurance, financial test, guarantee, letter of credit, surety bond, and trust fund, except that the owner or operator may not combine a financial test covering part of the liability coverage requirement with a guarantee unless the financial statement of the owner or operator is not consolidated with the financial statement of the guarantor. The amounts of coverage demonstrated must total at least the minimum amounts required by this subparagraph. If the owner or operator demonstrates the required coverage through the use of a combination of financial assurances under this paragraph, the owner or operator shall specify at least one such assurance as "primary" coverage and shall specify other assurance as "excess" coverage.

(vii) An owner or operator shall notify the Division Director in writing within 30 days whenever:

(I) A claim results in a reduction in the amount of financial assurance for liability coverage provided by a financial instrument authorized in subparts (i) through (vi) of this part; or

(II) A Certification of Valid Claim for bodily injury or property damages caused by a sudden or non-sudden accidental occurrence arising from the operation of a hazardous waste treatment, storage, or disposal facility is entered between the owner or operator and third-party claimant for liability coverage under subparts (i) through (vi) of this part; or

(III) A final court order establishing a judgment for bodily injury or property damage caused by a sudden or non-sudden accidental occurrence arising from the operation of a hazardous waste treatment, storage, or disposal facility is issued against the owner or operator or an instrument that is providing financial assurance for liability coverage under subparts (i) through (vi) of this part.

2. Coverage for Nonsudden Accidental Occurrences

An owner or operator of a surface impoundment, landfill, or land treatment facility which is used to manage hazardous waste, or a group of such facilities, must demonstrate financial responsibility for bodily injury and property damage to third parties caused by nonsudden accidental occurrences arising from operations of the facility or group of facilities. The owner or operator must have and maintain liability coverage for nonsudden accidental occurrences in the amount of at least $3 million per occurrence with an annual aggregate of at least $6 million, exclusive of legal defense costs. An owner or operator who must meet the requirements of this subparagraph may combine the required per-occurrence coverage levels for sudden and nonsudden accidental occurrences into a single per-occurrence level, and combine the required annual aggregate coverage levels for sudden and nonsudden accidental occurrences into a single annual aggregate level. Owners or operators who combine coverage levels for sudden and nonsudden accidental occurrences must maintain liability coverage in the amount of at least $4 million per occurrence and $8 million annual aggregate. This liability coverage may be demonstrated as specified in subpart (i), (ii), (iii), (iv), (v), or (vi) of this part:

(i) An owner or operator may demonstrate the required liability coverage by having liability insurance as specified in subpart 1(i) of this subparagraph.

(ii) An owner or operator may meet the requirements of this subparagraph by passing a financial test or using the guarantee for liability coverage as specified in parts 6 and 7 of this subparagraph.

(iii) An owner or operator may meet the requirements of this subparagraph by obtaining a letter of credit for liability coverage as specified in part 8 of this subparagraph.

(iv) An owner or operator may meet the requirements of this subparagraph by obtaining a surety bond for liability coverage as specified in part 9 of this subparagraph.

(v) An owner or operator may meet the requirements of this subparagraph by obtaining a trust fund for liability coverage as specified in part 10 of this subparagraph.

(vi) An owner or operator may demonstrate the required liability coverage through the use of combinations of insurance, financial test, guarantee, letter of credit, surety bond, and trust fund, except that the owner or operator may not combine a financial test covering part of the liability coverage requirement with a guarantee unless the financial statement of the owner or operator is not consolidated with the financial statement of the guarantor. The amounts of coverage demonstrated must total at least the minimum amounts required by this subparagraph. If the owner or operator demonstrates the required coverage through the use of a combination of financial assurances under this part, the owner or operator shall specify at least one such assurance as "primary" coverage and shall specify other assurance as "excess" coverage.

(vii) An owner or operator shall notify the Division Director in writing within 30 days whenever:

(I) A claim results in a reduction in the amount of financial assurance for liability coverage provided by a financial instrument authorized in subparts (i) through (vi) of this part; or

(II) A Certification of Valid Claim for bodily injury or property damages caused by a sudden or non-sudden accidental occurrence arising from the operation of a hazardous waste treatment, storage, or disposal facility is entered between the owner or operator and third-party claimant

for liability coverage under subparts (i) through (vi) of this part; or

(III) A final court order establishing a judgment for bodily injury or property damage caused by a sudden or non-sudden accidental occurrence arising from the operation of a hazardous waste treatment, storage, or disposal facility is issued against the owner or operator or an instrument that is providing financial assurance for liability coverage under subparts (i) through (vi) of this part.

3. Request for Variance

If an owner or operator can demonstrate to the satisfaction of the Commissioner that the levels of financial responsibility required by part 1 or 2 of this subparagraph are not consistent with the degree and duration of risk associated with treatment, storage, or disposal at the facility or group of facilities, the owner or operator may obtain a variance from the Commissioner. The request for a variance must be submitted in writing to the Commissioner. If granted, the variance will take the form of an adjusted level of required liability coverage, such level to be based on the Commissioner's assessment of the degree and duration of risk associated with the ownership or operation of the facility or group of facilities. The Commissioner may require an owner or operator who requests a variance to provide such technical and engineering information as is deemed necessary by the Commissioner to determine a level of financial responsibility other than that required by part 1 or 2 of this subparagraph. The Commissioner will process a variance request as if it were a permit modification request under Rule 0400-12-01-.07(9)(c)3(xiii) and subject to the procedures of Rule 0400-12-01-.07(9)(c)2. Notwithstanding any other provision, the Commissioner may hold a public hearing at his discretion or whenever he finds, on the basis of requests for a public hearing, a significant degree of pubic interest in a tentative decision to grant a variance.

4. Adjustments by the Commissioner

If the Commissioner determines that the levels of financial responsibility required by part 1 or 2 of this subparagraph are not consistent with the degree and duration of risk associated with treatment, storage, or disposal at the facility or group of facilities, the Commissioner may adjust the level of financial responsibility required under part 1 or 2 of this subparagraph as may be necessary to protect human health and the environment. This adjusted level will be based on the Commissioner's assessment of the degree and duration of risk associated with the ownership or operation of the facility or group of facilities. In addition, if the Commissioner determines that there is a significant risk to human health and the environment from nonsudden accidental occurrences resulting from the operations of a facility that is not a surface impoundment, landfill, or land treatment facility, he may require that an owner or operator of the facility comply with part 2 of this subparagraph. An owner or operator must furnish to the Division Director, within a reasonable time, any information which the Commissioner requests to determine whether cause exists for such adjustments of level or type of coverage. The Commissioner will process an adjustment of the level of required coverage as if it were a permit modification under Rule 0400-12-01-.07(9)(c)3(xiii) and subject to the procedures of Rule 0400-12-01-.07(9)(c)2. Notwithstanding any other provision, the Commissioner may hold a public hearing at his discretion or whenever he finds, on the basis of requests for a public hearing, a significant degree of public interest in a tentative decision to adjust the level or type of required coverage.

5. Period of Coverage

Within 60 days after receiving certifications from the owner or operator and a qualified Professional Engineer that final closure has been completed in accordance with the approved closure plan, the Division Director will notify the owner or operator in writing that he is no longer required by this subparagraph to maintain liability coverage for that facility, unless the Commissioner or Board has reason to believe that closure has not

been in accordance with the approved closure plan. The Division Director shall provide the owner or operator a detailed written statement of any such reason to believe that closure has not been in accordance with the approved closure plan.

6. Financial Test for Liability Coverage

(i) An owner or operator may satisfy the requirements of this subparagraph by demonstrating that he passes a financial test as specified in this part. To pass this test the owner or operator must meet the criteria of items (I) or (II) of this subpart:

(I) The owner or operator must have:

I. Net working capital and tangible net worth each at least six times the amount of liability coverage to be demonstrated by this test; and

II. Tangible net worth of at least $10 million; and

III. Assets in the United States amounting to either:

A. At least 90 percent of his total assets; or

B. At least six times the amount of liability coverage to be demonstrated by this test.

(II) The owner or operator must have:

I. A current rating for his most recent bond issuance of AAA, AA, A, or BBB as issued by Standard and Poor's, or Aaa, Aa, A, or Baa as issued by Moody's; and

II. Tangible net worth of at least $10 million; and

III. Tangible net worth at least six times the amount of liability coverage to be demonstrated by this test; and

IV. Assets in the United States amounting to either:

A. At least 90 percent of his total assets; or

B. At least six times the amount of liability coverage to be demonstrated by this test.

(ii) The phrase "amount of liability coverage" as used in subpart (i) of this part refers to the annual aggregate amounts for which coverage is required under parts 1 and 2 of this subparagraph.

(iii) To demonstrate that he meets this test, the owner or operator must submit the following three items to the Division Director:

(I) A letter signed by the owner's or operator's chief financial officer and worded as specified in Rule 0400-12-01-.06(8)(p)7. If an owner or operator is using the financial test to demonstrate both assurance for closure or post-closure care, as specified by Rule 0400-12-01-.06(8)(d),(f) and (g)8 and subparagraphs (d) and (f) and part (g)7 of this paragraph, and liability coverage, he must submit the letter specified in Rule 0400-12-01-.06(8)(p)7 to cover both forms of financial responsibility; a separate letter as specified in Rule 0400-12-01-

.06(8)(p)6 is not required.

(II) A copy of the independent certified public accountant's report on examination of the owner's or operator's financial statements for the latest completed fiscal year.

(III) A special report from the owner's or operator's independent certified public accountant to the owner or operator stating that:

I. He has compared the data which the letter from the chief financial officer specifies as having been derived from the independently audited, year-end financial statements for the latest fiscal year with the amounts in such financial statements; and

II. In connection with that procedure, no matters came to his attention which caused him to believe that the specified data should be adjusted.

(iv) The owner or operator may obtain a one-time extension of the time allowed in subparagraph (d) and (f) of this paragraph for submission of the documents specified in subpart (iii) of this part if the fiscal year of the owner or operator ends during the 90 days prior to the effective date of these regulations and if the year-end financial statements for that fiscal year will be audited by an independent certified public accountant. The extension will end no later than 90 days after the end of the owner's or operator's fiscal year. To obtain the extension, the owner's or operator's chief financial officer must send, by 90 days after the effective date of these regulations, a letter to the Division Director which must:

(I) Request the extension;

(II) Certify that he has grounds to believe that the owner or operator meets the criteria of the financial test;

(III) Specify for each facility to be covered by the test the Installation Identification Number, name, address, the amount of liability coverage and, when applicable, current closure and post-closure cost estimates to be covered by the test;

(IV) Specify the date ending the owner's or operator's last complete fiscal year before the date 90 days after the effective date of these regulations;

(V) Specify the date, no later than 90 days after the end of such fiscal year, when he will submit the documents specified in subpart (iii) of this part; and

(VI) Certify that the year-end financial statements of the owner or operator for such fiscal year will be audited by an independent certified public accountant.

(v) After the initial submission of items specified in subpart (iii) of this part, the owner or operator must send updated information to the Division Director within 90 days after the close of each succeeding fiscal year. This information must consist of all three items specified in subpart (iii) of this part.

(vi) If the owner or operator no longer meets the requirements of subpart (i) of this part, he must obtain insurance, a letter of credit, a surety bond, a trust fund, or a guarantee for the entire amount of required liability coverage as specified in this subparagraph. Evidence of liability coverage must be submitted to the Division

Director within 90 days after the end of the fiscal year for which the year-end financial data show that the owner or operator no longer meets the test requirements.

(vii) The Commissioner may disallow use of this test on the basis of qualifications in the opinion expressed by the independent certified public accountant in his report on examination of the owner's or operator's financial statements (see item (iii)(II) of this part). An adverse opinion or a disclaimer of opinion will be cause for disallowance. The Commissioner will evaluate other qualifications on an individual basis. The owner or operator must provide evidence of insurance for the entire amount of required liability coverage as specified in this subparagraph within 30 days after notification of disallowance.

7. Guarantee for Liability Coverage

(i) Subject to subpart (ii) of this part, an owner or operator may meet the requirements of this subparagraph obtaining a written guarantee, hereinafter referred to as "guarantee." The guarantor must be the direct or higher-tier parent corporation of the owner or operator, a firm whose parent corporation is also the parent corporation of the owner or operator, or a firm with a "substantial business relationship" with the owner or operator. The guarantor must meet the requirements for owners or operators in subparts 6(i) through 6(vi) of this subparagraph. The wording of the guarantee must be identical to the wording specified in Rule 0400-12-01-.06(8)(p)8(ii). A certified copy of the guarantee must accompany the items sent to the Division Director as specified in subpart 6(iii) of this subparagraph. One of these items must be the letter from the guarantor's chief financial officer. If the guarantor's parent corporation is also the parent corporation of the owner or operator, this letter must describe the value received in consideration of the guarantee. If the guarantor is a firm with a "substantial business relationship" with the owner or operator, this letter must describe this "substantial business relationship" and the value received in consideration of the guarantee.

(I) If the owner or operator fails to satisfy a judgment based on a determination of liability for bodily injury or property damage to third parties caused by sudden or nonsudden accidental occurrences (or both as the case may be), arising from the operation of facilities covered by this corporate guarantee, or fails to pay an amount agreed to in settlement of claims arising from or alleged to arise from such injury or damage, the guarantor will do so up to the limits of coverage.

(II) (Reserved)

(ii) (I) In the case of corporations incorporated in the United States, a guarantee may be used to satisfy the requirements of this subparagraph only if the Attorneys General or Insurance Commissioners of

I. the State in which the guarantor is incorporated, and

II. each State in which a facility covered by the guarantee is located have submitted a written statement to the Division Director that a guarantee executed as described in this part and Rule 0400-12-01-.06(8)(p)8(ii) is a legally valid and enforceable obligation in that State.

(II) In the case of corporations incorporated outside the United States, a guarantee may be used to satisfy the requirements of this subparagraph only if

I. the non-U.S. corporation has identified a registered agent for service of process in each State in which a facility covered by the guarantee is located and in the State in which it has its principal place of business, and if

II. the Attorney General or Insurance Commissioner of each State in which a facility covered by the guarantee is located and the State in which the guarantor corporation has its principal place of business, has submitted a written statement to the Division Director that a guarantee executed as described in this part and Rule 0400-12-01-.06(8)(p)8(ii) is a legally valid and enforceable obligation in that State.

8. Letter of Credit for Liability Coverage

(i) An owner or operator may satisfy the requirements of this subparagraph by obtaining an irrevocable standby letter of credit that conforms to the requirements of this part and submitting a copy of the letter of credit to the Division Director.

(ii) The financial institution issuing the letter of credit must be an entity that has the authority to issue letters of credit and whose letter of credit operations are regulated and examined by a Federal or State agency.

(iii) The wording of the letter of credit must be identical to the wording specified in Rule 0400-12-01-.06(8)(p)11.

9. Surety Bond for Liability Coverage

(i) An owner or operator may satisfy the requirements of this subparagraph by obtaining a surety bond that conforms to the requirements of this part and submitting a copy of the bond to the Division Director.

(ii) The surety company issuing the bond must be licensed to do business as a surety in Tennessee.

(iii) The wording of the surety bond must be identical to the wording specified in Rule 0400-12-01-.06(8)(p)12.

(iv) A surety bond may be used to satisfy the requirements of this subparagraph only if the Attorneys General or Insurance Commissioners of

(I) the State in which the surety is incorporated, and

(II) each State in which a facility covered by the surety bond is located have submitted a written statement to the Division Director that a surety bond executed as described in this subparagraph and Rule 0400-12-01-.06(8)(p)12 is a legally valid and enforceable obligation in that State.

10. Trust Fund for Liability Coverage

(i) An owner or operator may satisfy the requirements of this subparagraph by establishing a trust fund that conforms to the requirements of this part and submitting an originally signed duplicate of the trust agreement to the Division Director.

(ii) The trustee must be an entity which has the authority to act as a trustee and whose trust operations are regulated and examined by a Federal or State agency.

(iii) The trust fund for liability coverage must be funded for the full amount of the liability coverage to be provided by the trust fund before it may be relied upon to satisfy the requirements of this subparagraph. If at any time after the trust fund is created the amount of funds in the trust fund is reduced below the full amount of the liability coverage to be provided, the owner or operator, by the anniversary date of the establishment of the Fund, must either add sufficient funds to the trust fund to cause its value to equal the full amount of liability coverage to be provided, or obtain other financial assurance as specified in this subparagraph to cover the difference. For purposes of this part, "the full amount of the liability coverage to be provided" means the amount of coverage for sudden and/or nonsudden occurrences required to be provided by the owner or operator by this subparagraph, less the amount of financial assurance for liability coverage that is being provided by other financial assurance mechanisms being used to demonstrate financial assurance by the owner or operator.

(iv) The wording of the trust fund must be identical to the wording specified in Rule 0400-12-01-.06(8)(p)13.

11. (Reserved) [40 CFR 265.147(k)]

(o) Incapacity of Owners or Operators, Guarantors, or Financial Institutions [40 CFR 265.148]

1. An owner or operator must notify the Division Director by certified mail of the commencement of a voluntary or involuntary proceeding under Title 11 (Bankruptcy), U.S. Code, naming the owner or operator as debtor, within 10 days after commencement of the proceeding. A guarantor of a corporate guarantee as specified in part (g)7 of this paragraph must make such a notification if he is named as debtor, as required under the terms of the corporate guarantee (Rule 0400-12-01-.06(8)(p)8).

2. An owner or operator who fulfills the requirements of subparagraphs (d), (f) or (n) of this paragraph by obtaining a trust fund, surety bond, letter of credit, or insurance policy will be deemed to be without the required financial assurance or liability coverage in the event of bankruptcy of the trustee or issuing institution, or a suspension or revocation of the authority of the trustee institution to act as trustee or of the institution issuing the surety bond, letter of credit, or insurance policy to issue such instruments. The owner or operator must establish other financial assurance or liability coverage within 60 days after such an event.

(9) Use and Management of Containers [40 CFR 265 Subpart I]

(a) Applicability [40 CFR 265.170]

The regulations in this paragraph apply to owners and operators of all hazardous waste facilities that store containers of hazardous waste, except as paragraph (1) of this rule provides otherwise.

(b) Condition of Containers [40 CFR 265.171]

If a container holding hazardous waste is not in good condition, or if it begins to leak, the owner or operator must transfer the hazardous waste from this container to a container that is in good condition, or manage the waste in some other way that complies with the requirements of this rule.

(c) Compatibility of Waste with Container [40 CFR 265.172]

The owner or operator must use a container made of or lined with materials which will not react with, and are otherwise compatible with, the hazardous waste to be stored, so that the ability of the container to contain the waste is not impaired.

(d) Management of Containers [40 CFR 265.I73]

1. A container holding hazardous waste must always be closed during storage, except when it is necessary to add or remove waste.

2. A container holding hazardous waste must not be opened, handled, or stored in a manner which may rupture the container or cause it to leak.

(Comment: Re-use of containers in transportation is governed by U.S. Department of Transportation regulations, including those set forth in 49 CFR 173.28.)

(e) Inspections [40 CFR 265.174]

At least weekly, the owner or operator must inspect areas where containers are stored. The owner or operator must look for leaking containers and for deterioration of containers caused by corrosion or other factors.

(Comment: See subparagraph (b) of this paragraph for remedial action required if deterioration or leaks are detected.)

(f) (RESERVED) [40 CFR 265.175]

(g) Special Requirements for Ignitable or Reactive Waste [40 CFR 265.176]

Containers holding ignitable or reactive waste must be located at least 15 meters (50 feet) from the facility's property line.

(Comment: See part (2)(h)1 of this rule for additional requirements.)

(h) Special Requirements for Incompatible Wastes [40 CFR 265.177]

1. Incompatible wastes, or incompatible wastes and materials, (see Appendix V, paragraph (53) of this rule for examples) must not be placed in the same container, unless part (2)(h)2 of this rule is complied with.

2. Hazardous waste must not be placed in an unwashed container that previously held an incompatible waste or material (see paragraph (53) appendix V of this rule for examples), unless part (2)(h)2 of this rule is complied with.

3. A storage container holding a hazardous waste that is incompatible with any waste or other materials stored nearby in other containers, piles, open tanks, or surface impoundments must be separated from the other materials or protected from them by means of a dike, berm, wall, or other device.

(Comment: The purpose of this is to prevent fires, explosions, gaseous emissions, leaching, or other discharge of hazardous waste or hazardous waste constituents which could result from the mixing of incompatible wastes or materials if containers break or leak.)

(i) Air Emission Standards [40 CFR 265.178]

The owner or operator shall manage all hazardous waste placed in a container in accordance with the applicable requirements of paragraphs (27), (28), and (29) of this rule.

(10) Tank Systems [40 CFR 265 Subpart J]

(a) Applicability [40 CFR 265.190]

The requirements of this paragraph apply to owners and operators of facilities that use tank systems for storing or treating hazardous waste except as otherwise provided in parts 1, 2, and 3 of this subparagraph or in paragraph (1) of this rule.

1. Tank systems that are used to store or treat hazardous waste which contains no free liquids and that are situated inside a building with an impermeable floor are exempted from the requirements in subparagraph (d) of this paragraph. To demonstrate the absence or presence of free liquids in the stored/treated waste, the following test must be used: Method 9095B (Paint Filter Liquids Test) as described in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA Publication SW-846. (See 40 CFR 260.11; Rule 0400-12-01-.01(2)(b)1.)

2. Tank systems, including sumps, as defined in Rule 0400-12-01-.01(2)(a), that serve as part of a secondary containment system to collect or contain releases of hazardous wastes are exempted from the requirements in part (d)1 of this paragraph.

3. Tanks, sumps, and other collection devices used in conjunction with drip pads, as defined in Rule 0400-12-01-.01(2)(a) and regulated under paragraph (23) of this rule, must meet the requirements of this paragraph.

(b) Assessment of Existing Tank System's Integrity [40 CFR 265.191]

1. For each existing tank system that does not have secondary containment meeting the requirements of subparagraph (d) of this paragraph, the owner or operator must determine that the tank system is not leaking or is unfit for use. Except as provided in part 3 of this subparagraph, the owner or operator must obtain and keep on file at the facility a written assessment reviewed and certified by a qualified Professional Engineer in accordance with Rule 0400-12-01-.07(2)(a)10, that attests to the tank system's integrity by January 12, 1988.

2. This assessment must determine that the tank system is adequately designed and has sufficient structural strength and compatibility with the waste(s) to be stored or treated to ensure that it will not collapse, rupture, or fail. At a minimum, this assessment must consider the following:

(i) Design standard(s), if available, according to which the tank and ancillary equipment were constructed;

(ii) Hazardous characteristics of the waste(s) that have been or will be handled;

(iii) Existing corrosion protection measures;

(iv) Documented age of the tank system, if available (otherwise, an estimate of the age); and

(v) Results of a leak test, internal inspection, or other tank integrity examination such that:

(I) For non-enterable underground tanks, this assessment must consist of a leak test that is capable of taking into account the effects of temperature variations, tank end deflection, vapor pockets, and high water table effects,

(II) For other than non-enterable underground tanks and for ancillary equipment, this assessment must be either a leak test, as described above, or an internal inspection and/or other tank integrity examination certified by a qualified Professional Engineer in accordance with Rule 0400-12-01-.07(2)(a)10 that addresses cracks, leaks, corrosion, and erosion.

(Note: The practices described in the American Petroleum Institute (API) Publication, Guide for Inspection of Refinery Equipment, Chapter XIII,

"Atmospheric and Low-Pressure Storage Tanks," 4th edition, 1981, may be used, where applicable, as guidelines in conducting the integrity examination of an other than non-enterable underground tank system.)

3. Tank systems that store or treat materials that become hazardous wastes subsequent to July 14, 1986 must conduct this assessment within 12 months after the date that the waste becomes a hazardous waste.

4. If, as a result of the assessment conducted in accordance with part 1 of this subparagraph, a tank system is found to be leaking or unfit for use, the owner or operator must comply with the requirements of subparagraph (g) of this paragraph.

(c) Design and Installation of New Tank Systems or Components [40 CFR 265.192]

1. Owners or operators of new tank systems or components must ensure that the foundation, structural support, seams, connections, and pressure controls (if applicable) are adequately designed and that the tank system has sufficient structural strength, compatibility with the waste(s) to be stored or treated, and corrosion protection so that it will not collapse, rupture, or fail. The owner or operator must obtain a written assessment reviewed and certified by a qualified Professional Engineer in accordance with Rule 0400-12-01-.07(2)(a)10 attesting that the system has sufficient structural integrity and is acceptable for the storing and treating of hazardous waste. This assessment must include, at a minimum, the following information:

(i) Design standard(s) according to which the tank(s) and ancillary equipment is or will be constructed.

(ii) Hazardous characteristics of the waste(s) to be handled.

(iii) For new tank systems or components in which the external shell of a metal tank or any external metal component of the tank system is or will be in contact with the soil or with water, a determination by a corrosion expert of:

(I) Factors affecting the potential for corrosion, including but not limited to:

I. Soil moisture content;

II. Soil pH;

III. Soil sulfides level;

IV. Soil resistivity;

V. Structure to soil potential;

VI. Influence of nearby underground metal structures (e.g., piping);

VII. Stray electric current; and

VIII. Existing corrosion-protection measures (e.g., coating, cathodic protection); and

(II) The type and degree of external corrosion protection that are needed to ensure the integrity of the tank system during the use of the tank system or component, consisting of one or more of the following:

I. Corrosion-resistant materials of construction such as special alloys or fiberglass-reinforced plastic;

II. Corrosion-resistant coating (such as epoxy or fiberglass) with cathodic protection (e.g., impressed current or sacrificial anodes); and

III. Electrical isolation devices such as insulating joints and flanges.

(Note: The practices described in the National Association of Corrosion Engineers (NACE) standard, "Recommended Practice (RP-02-85) -- Control of External Corrosion on Metallic Buried, Partially Buried, or Submerged Liquid Storage Systems," and the American Petroleum Institute (API) Publication 1632, "Cathodic Protection of Underground Petroleum Storage Tanks and Piping Systems," may be used, where applicable, as guidelines in providing corrosion protection for tank systems.)

(iv) For underground tank system components that are likely to be affected by vehicular traffic, a determination of design or operational measures that will protect the tank system against potential damage; and

(v) Design considerations to ensure that:

(I) Tank foundations will maintain the load of a full tank;

(II) Tank systems will be anchored to prevent flotation or dislodgement where the tank system is placed in a saturated zone, or is located within a seismic fault zone; and

(III) Tank systems will withstand the effects of frost heave.

2. The owner or operator of a new tank system must ensure that proper handling procedures are adhered to in order to prevent damage to the system during installation. Prior to covering, enclosing, or placing a new tank system or component in use, an independent, qualified installation inspector or a qualified Professional Engineer, either of whom is trained and experienced in the proper installation of tank systems, must inspect the system or component for the presence of any of the following items:

(i) Weld breaks;

(ii) Punctures;

(iii) Scrapes of protective coatings;

(iv) Cracks;

(v) Corrosion;

(vi) Other structural damage or inadequate construction or installation.

All discrepancies must be remedied before the tank system is covered, enclosed, or placed in use.

3. New tank systems or components and piping that are placed underground and that are backfilled must be provided with a backfill material that is a noncorrosive, porous, homogeneous substance and that is carefully installed so that the backfill is placed completely around the tank and compacted to ensure that the tank and piping are fully and uniformly supported.

4. All new tanks and ancillary equipment must be tested for tightness prior to being covered, enclosed or placed in use. If a tank system is found not to be tight, all repairs necessary to remedy the leak(s) in the system must be performed prior to the tank system being

covered, enclosed, or placed in use.

5. Ancillary equipment must be supported and protected against physical damage and excessive stress due to settlement, vibration, expansion or contraction.

(Note: The piping system installation procedures described in American Petroleum Institute (API) Publication 1615 (November 1979), "Installation of Underground Petroleum Storage Systems," or ANSI Standard B31.3, "Petroleum Refinery System," may be used, where applicable, as guidelines for proper installation of piping systems.)

6. The owner or operator must provide the type and degree of corrosion protection necessary, based on the information provided under subpart 1(iii) of this subparagraph, to ensure the integrity of the tank system during use of the tank system. The installation of a corrosion protection system that is field fabricated must be supervised by an independent corrosion expert to ensure proper installation.

7. The owner or operator must obtain and keep on file at the facility written statements by those persons required to certify the design of the tank system and supervise the installation of the tank system in accordance with the requirements of parts 2 through 6 of this subparagraph to attest that the tank system was properly designed and installed and that repairs, pursuant to parts 2 and 4 of this subparagraph were performed. These written statements must also include the certification statement as required in Rule 0400-12-01-.07(2)(a)10.

(d) Containment and Detection of Releases [40 CFR 265.193]

1. In order to prevent the release of hazardous waste or hazardous constituents to the environment, secondary containment that meets the requirements of this subparagraph must be provided (except as provided in parts 6 and 7 of this subparagraph):

   (i) For all new and existing tank systems or components, prior to their being put into service;

   (ii) For tank systems that store or treat materials that become hazardous wastes, within 2 years of the hazardous waste listing, or when the tank system has reached 15 years of age, whichever comes later.

2. Secondary containment systems must be:

   (i) Designed, installed, and operated to prevent any migration of wastes or accumulated liquid out of the system to the soil, ground water, or surface water at any time during the use of the tank system; and

   (ii) Capable of detecting and collecting releases and accumulated liquids until the collected material is removed.

3. To meet the requirements of part 2 of this subparagraph, secondary containment systems must be at a minimum:

   (i) Constructed of or lined with materials that are compatible with the waste(s) to be placed in the tank system and must have sufficient strength and thickness to prevent failure due to pressure gradients (including static head and external hydrological forces), physical contact with the waste to which they are exposed, climatic conditions, the stress of installation, and the stress of daily operation (including stresses from nearby vehicular traffic);

   (ii) Placed on a foundation or base capable of providing support to the secondary containment system and resistance to pressure gradients above and below the system and capable of preventing failure due to settlement, compression, or

uplift;

(iii) Provided with a leak detection system that is designed and operated so that it will detect the failure of either the primary and secondary containment structure or any release of hazardous waste or accumulated liquid in the secondary containment system within 24 hours, or at the earliest practicable time if the existing detection technology or site conditions will not allow detection of a release within 24 hours;

(iv) Sloped or otherwise designed or operated to drain and remove liquids resulting from leaks, spills, or precipitation. Spilled or leaked waste and accumulated precipitation must be removed from the secondary containment system within 24 hours, or in as timely a manner as is possible to prevent harm to human health or the environment, if removal of the released waste or accumulated precipitation cannot be accomplished within 24 hours.

(Note: If the collected material is a hazardous waste under Rule 0400-12-01-.02, it is subject to management as a hazardous waste in accordance with all applicable requirements of Rule 0400-12-01-.03 through .06. If the collected material is discharged through a point source to waters of the United States, it is subject to the requirements of sections 301, 304, and 402 of the Clean Water Act, as amended. If discharged to Publicly Owned Treatment Works (POTWs), it is subject to the requirements of T.C.A. Section 69-3-101 et seq. and/or section 307 of the Clean Water Act, as amended. If the collected material is released to the environment, it may be subject to the reporting requirements of 40 CFR part 302.)

4. Secondary containment for tanks must include one or more of the following devices:

(i) A liner (external to the tank);

(ii) A vault;

(iii) A double-walled tank; or

(iv) An equivalent device as approved by the Commissioner.

5. In addition to the requirements of parts 2, 3, and 4 of this subparagraph, secondary containment systems must satisfy the following requirements:

(i) External liner systems must be:

(I) Designed or operated to contain 100 percent of the capacity of the largest tank within its boundary;

(II) Designed or operated to prevent run-on or infiltration of precipitation into the secondary containment system unless the collection system has sufficient excess capacity to contain run-on or infiltration. Such additional capacity must be sufficient to contain precipitation from a 25-year, 24-hour rainfall event;

(III) Free of cracks or gaps; and

(IV) Designed and installed to completely surround the tank and to cover all surrounding earth likely to come into contact with the waste if released from the tank(s) (i.e., capable of preventing lateral as well as vertical migration of the waste).

(ii) Vault systems must be:

(I) Designed or operated to contain 100 percent of the capacity of the largest tank within its boundary;

(II) Designed or operated to prevent run-on or infiltration of precipitation into the secondary containment system unless the collection system has sufficient excess capacity to contain run-on or infiltration. Such additional capacity must be sufficient to contain precipitation from a 25-year, 24-hour rainfall event;

(III) Constructed with chemical-resistant water stops in place at all joints (if any);

(IV) Provided with an impermeable interior coating or lining that is compatible with the stored waste and that will prevent migration of waste into the concrete;

(V) Provided with a means to protect against the formation of and ignition of vapors within the vault, if the waste being stored or treated:

I. Meets the definition of ignitable waste under Rule 0400-12-01-.02(3)(b), or

II. Meets the definition of reactive waste under Rule 0400-12-01-.02(3)(d) and may form an ignitable or explosive vapor; and

(VI) Provided with an exterior moisture barrier or be otherwise designed or operated to prevent migration of moisture into the vault if the vault is subject to hydraulic pressure.

(iii) Double-walled tanks must be:

(I) Designed as an integral structure (i.e., an inner tank within an outer shell) so that any release from the inner tank is contained by the outer shell;

(II) Protected, if constructed of metal, from both corrosion of the primary tank interior and the external surface of the outer shell; and

(III) Provided with a built-in, continuous leak detection system capable of detecting a release within 24 hours or at the earliest practicable time, if the owner or operator can demonstrate to the Commissioner, and the Commissioner concurs, that the existing leak detection technology or site conditions will not allow detection of a release within 24 hours.

(Note: The provisions outlined in the Steel Tank Institute's (STI) "Standard for Dual Wall Underground Steel Storage Tank" may be used as guidelines for aspects of the design of underground steel double-walled tanks.)

6. Ancillary equipment must be provided with full secondary containment (e.g., trench, jacketing, double-walled piping) that meets the requirements of parts 2 and 3 of this subparagraph except for:

(i) Aboveground piping (exclusive of flanges, joints, valves, and connections) that are visually inspected for leaks on a daily basis;

(ii) Welded flanges, welded joints, and welded connections that are visually inspected for leaks on a daily basis;

(iii) Sealless or magnetic coupling pumps and sealless valves, that are visually inspected for leaks on a daily basis; and

(iv) Pressurized aboveground piping systems with automatic shut-off devices (e.g., excess flow check valves, flow metering shutdown devices, loss of pressure actuated shut-off devices) that are visually inspected for leaks on a daily basis.

7. The owner or operator may obtain a variance from the requirements of this paragraph if the Commissioner finds, as a result of a demonstration by the owner or operator, either: that alternative design and operating practices, together with location characteristics, will prevent the migration of hazardous waste or hazardous constituents into the ground water or surface water at least as effectively as secondary containment during the active life of the tank system or that in the event of a release that does migrate to ground water or surface water, no substantial present or potential hazard will be posed to human health or the environment. New underground tank systems may not, per a demonstration in accordance with subpart (ii) of this part, be exempted from the secondary containment requirements of this paragraph. Application for a variance as allowed in this part does not waive compliance with the requirements of this subparagraph for new tank systems.

(i) In deciding whether to grant a variance based on a demonstration of equivalent protection of ground water and surface water, the Commissioner will consider:

(I) The nature and quantity of the waste;

(II) The proposed alternate design and operation;

(III) The hydrogeologic setting of the facility, including the thickness of soils between the tank system and ground water; and

(IV) All other factors that would influence the quality and mobility of the hazardous constituents and the potential for them to migrate to ground water or surface water.

(ii) In deciding whether to grant a variance, based on a demonstration of no substantial present or potential hazard, the Commissioner will consider:

(I) The potential adverse effects on ground water, surface water, and land quality taking into account:

I. The physical and chemical characteristics of the waste in the tank system, including its potential for migration,

II. The hydrogeological characteristics of the facility and surrounding land,

III. The potential for health risks caused by human exposure to waste constituents,

IV. The potential for damage to wildlife, crops, vegetation, and physical structures caused by exposure to waste constituents, and

V. The persistence and permanence of the potential adverse effects;

(II) The potential adverse effects of a release on ground-water quality, taking into account:

I. The quantity and quality of ground water and the direction of

ground-water flow,

II. The proximity and withdrawal rates of water in the area,

III. The current and future uses of ground water in the area, and

IV. The existing quality of ground water, including other sources of contamination and their cumulative impact on the ground-water quality;

(III) The potential adverse effects of a release on surface water quality, taking into account:

I. The quantity and quality of ground water and the direction of ground-water flow,

II. The patterns of rainfall in the region,

III. The proximity of the tank system to surface waters,

IV. The current and future uses of surface waters in the area and any water quality standards established for those surface waters, and

V. The existing quality of surface water, including other sources of contamination and the cumulative impact on surface-water quality; and

(IV) The potential adverse effects of a release on the land surrounding the tank system, taking into account:

I. The patterns of rainfall in the region, and

II. The current and future uses of the surrounding land.

(iii) The owner or operator of a tank system, for which a variance from secondary containment had been granted in accordance with the requirements of subpart (i) of this part, at which a release of hazardous waste has occurred from the primary tank system but has not migrated beyond the zone of engineering control (as established in the variance), must:

(I) Comply with the requirements of subparagraph (g) of this paragraph, except part 4; and

(II) Decontaminate or remove contaminated soil to the extent necessary to:

I. Enable the tank system, for which the variance was granted, to resume operation with the capability for the detection of and response to releases at least equivalent to the capability it had prior to the release, and

II. Prevent the migration of hazardous waste or hazardous constituents to ground water or surface water; and

(III) If contaminated soil cannot be removed or decontaminated in accordance with item (II) of this subpart, comply with the requirements of part (h)2 of this paragraph;

(iv) The owner or operator of a tank system, for which a variance from secondary

containment had been granted in accordance with the requirements of subpart (i) of this part, at which a release of hazardous waste has occurred from the primary tank system and has migrated beyond the zone of engineering control (as established in the variance), must:

(I) Comply with the requirements of parts (g)1 through 4 of this paragraph; and

(II) Prevent the migration of hazardous waste or hazardous constituents to ground water or surface water, if possible, and decontaminate or remove contaminated soil. If contaminated soil cannot be decontaminated or removed, or if ground water has been contaminated, the owner or operator must comply with the requirements of part (h)2 of this paragraph; and

(III) If repairing, replacing, or reinstalling the tank system, provide secondary containment in accordance with the requirements of parts 1 through 6 of this subparagraph or reapply for a variance from secondary containment and meet the requirements for new tank systems in subparagraph (c) of this paragraph if the tank system is replaced. The owner or operator must comply with these requirements even if contaminated soil can be decontaminated or removed, and ground water or surface water has not been contaminated.

8. The following procedures must be followed in order to request a variance from secondary containment:

(i) The Commissioner must be notified in writing by the owner or operator that he intends to conduct and submit a demonstration for a variance from secondary containment as allowed in part 7 of this subparagraph according to the following schedule:

(I) For existing tank systems, at least 24 months prior to the date that secondary containment must be provided in accordance with part 1 of this subparagraph; and

(II) For new tank systems, at least 30 days prior to entering into a contract for installation of the tank system.

(ii) As part of the notification, the owner or operator must also submit to the Commissioner a description of the steps necessary to conduct the demonstration and a timetable for completing each of the steps. The demonstration must address each of the factors listed in subparts 7(i) or (ii) of this subparagraph.

(iii) The demonstration for a variance must be completed and submitted to the Commissioner within 180 days after notifying the Commissioner of intent to conduct the demonstration.

(iv) The Commissioner will inform the public, through a newspaper notice, of the availability of the demonstration for a variance. The owner of operator shall place the notice, as provided for in Rule 0400-12-01-.07(7)(e) and as prepared and required by the Commissioner, in a daily or weekly local newspaper of general circulation and shall provide at least 30 days from the date of the notice for the public to review and comment on the demonstration for a variance. The Commissioner also will hold a public hearing, in response to a request or at his own discretion, whenever such a hearing might clarify one or more issues concerning the demonstration for a variance. Public notice of the hearing will be given by the owner or operator, as prepared and required by the Commissioner, at least 30 days prior to the date of the hearing and may be given at the same

time as notice of the opportunity for the public to review and comment on the demonstration. These two notices may be combined. The owner or operator shall provide proof of the completion of all notice requirements to the Commissioner within ten (10) days following conclusion of the public notice procedures.

(v) The Commissioner will approve or disapprove the request for a variance within 90 days of receipt of the demonstration from the owner or operator and will notify in writing the owner or operator and each person who submitted written comments or requested notice of the variance decision. If the demonstration for a variance is incomplete or does not include sufficient information, the 90-day time period will begin when the Commissioner receives a complete demonstration, including all information necessary to make a final determination. If the public comment period in subpart (iv) of this part is extended, the 90-day time period will be similarly extended.

9. All tank systems, until such time as secondary containment meeting the requirements of this subparagraph is provided, must comply with the following:

(i) For non-enterable underground tanks, a leak test that meets the requirements of subpart (b)2(v) of this paragraph must be conducted at least annually;

(ii) For other than non-enterable underground tanks and for all ancillary equipment, the owner or operator must conduct either a leak test as in subpart (i) of this part or an internal inspection or other tank integrity examination by a qualified Professional Engineer that addresses cracks, leaks, corrosion or erosion at least annually. The owner or operator must remove the stored waste from the tank, if necessary, to allow the condition of all internal tank surfaces to be assessed.

(Note: The practices described in the American Petroleum Institute (API) Publication Guide for Inspection of Refining Equipment, Chapter XIII, "Atmospheric and Low Pressure Storage Tanks," 4th edition, 1981, may be used, when applicable, as guidelines for assessing the overall condition of the tank system.)

(iii) The owner or operator must maintain on file at the facility a record of the results of the assessments conducted in accordance with subparts (i) through (iii) of this part.

(iv) If a tank system or component is found to be leaking or unfit-for-use as a result of the leak test or assessment in subparts (i) through (iii) of this part, the owner or operator must comply with the requirements of subparagraph (g) of this paragraph.

(e) General Operating Requirements [40 CFR 265.194]

1. Hazardous wastes or treatment reagents must not be placed in a tank system if they could cause the tank, its ancillary equipment, or the secondary containment system to rupture, leak, corrode, or otherwise fail.

2. The owner or operator must use appropriate controls and practices to prevent spills and overflows from tank or secondary containment systems. These include at a minimum:

(i) Spill prevention controls (e.g., check valves, dry disconnect couplings);

(ii) Overfill prevention controls (e.g., level sensing devices, high level alarms, automatic feed cutoff, or bypass to a standby tank); and

(iii) Maintenance of sufficient freeboard in uncovered tanks to prevent overtopping by wave or wind action or by precipitation.

3. The owner or operator must comply with the requirements of subparagraph (g) of this paragraph if a leak or spill occurs in the tank system.

(f) Inspections [40 CFR 265.195]

1. The owner or operator must inspect, where present, at least once each operating day, data gathered from monitoring and leak detection equipment (e.g., pressure or temperature gauges, monitoring wells) to ensure that the tank system is being operated according to its design.

(Note: Part (2)(f)3 of this rule requires the owner or operator to remedy any deterioration or malfunction he finds. Subparagraph (g) of this paragraph requires the owner or operator to notify the Commissioner within 24 hours of confirming a release. Also, 40 CFR part 302 may require the owner or operator to notify the National Response Center of a release and Section 304 of Title III of the Superfund Amendments and Reauthorization Act of 1986 may require notification of the Tennessee Emergency Management Agency.)

2. Except as noted under part 3 of this subparagraph, the owner or operator must inspect at least once each operating day:

(i) Overfill/spill control equipment (e.g., waste-feed cutoff systems, bypass systems, and drainage systems) to ensure that it is in good working order;

(ii) Above ground portions of the tank system, if any, to detect corrosion or release of waste; and

(iii) The construction materials and the area immediately surrounding the externally accessible portion of the tank system, including the secondary containment system (e.g., dikes) to detect erosion or signs of releases of hazardous waste (e.g., wet spots, dead vegetation).

3. Owners or operators of tank systems that either use leak detection equipment to alert facility personnel to leaks, or implement established workplace practices to ensure leaks are promptly identified, must inspect at least weekly those areas described in subparts 2(i) through (iii) of this subparagraph. Use of the alternate inspection schedule must be documented in the facility's operating record. This documentation must include a description of the established workplace practices at the facility.

4. (Reserved)

5. Ancillary equipment that is not provided with secondary containment, as described in subparts (10)(d)6(i) through (iv) of this rule, must be inspected at least once each operating day.

6. The owner or operator must inspect cathodic protection systems, if present, according to, at a minimum, the following schedule to ensure that they are functioning properly:

(i) The proper operation of the cathodic protection system must be confirmed within six months after initial installation, and annually thereafter; and

(ii) All sources of impressed current must be inspected and/or tested, as appropriate, at least bimonthly (i.e., every other month).

(Note: The practices described in the National Association of Corrosion Engineers (NACE) standard, "Recommended Practice (RP-02-85) -- Control of External Corrosion on Metallic Buried, Partially Buried, or Submerged Liquid Storage Systems," and the American Petroleum Institute (API) Publication 1632, "Cathodic Protection of

Underground Petroleum Storage Tanks and Piping Systems," may be used, where applicable, as guidelines in maintaining and inspecting cathodic protection systems.)

7. The owner or operator must document in the operating record of the facility an inspection of those items in parts 1 and 2 of this subparagraph.

(g) Response to Leaks or Spills and Disposition of Leaking or Unfit-for-Use Tank Systems [40 CFR 265.196]

A tank system or secondary containment system from which there has been a leak or spill, or which is unfit for use, must be removed from service immediately, and the owner or operator must satisfy the following requirements:

1. Cessation of Use; Prevent Flow or Addition of Wastes

The owner or operator must immediately stop the flow of hazardous waste into the tank system or secondary containment system and inspect the system to determine the cause of the release.

2. Removal of Waste from Tank System or Secondary Containment System

(i) If the release was from the tank system, the owner or operator must, within 24 hours after detection of the leak or, if the owner or operator demonstrates that that is not possible, at the earliest practicable time remove as much of the waste as is necessary to prevent further release of hazardous waste to the environment and to allow inspection and repair of the tank system to be performed.

(ii) If the release was to a secondary containment system, all released materials must be removed within 24 hours or in as timely a manner as is possible to prevent harm to human health and the environment.

3. Containment of Visible Releases to the Environment

The owner or operator must immediately conduct a visual inspection of the release and, based upon that inspection:

(i) Prevent further migration of the leak or spill to soils or surface water; and

(ii) Remove, and properly dispose of, any visible contamination of the soil or surface water.

4. Notifications, Reports

(i) Any release to the environment, except as provided in subpart (ii) of this part, must be reported to the Commissioner within 24 hours of detection. If the release has been reported to the Tennessee Emergency Management Agency or to the National Response Center pursuant to 40 CFR Part 302, that report will satisfy this requirement.

(ii) A leak or spill of hazardous waste that is:

(I) Less than or equal to a quantity of one (1) pound, and

(II) Immediately contained and cleaned-up is exempted from the requirements of this part.

(iii) Within 30 days of detection of a release to the environment, a report containing the following information must be submitted to the Division Director:

(I) Likely route of migration of the release;

(II) Characteristics of the surrounding soil (soil composition, geology, hydrogeology, climate);

(III) Results of any monitoring or sampling conducted in connection with the release, (if available). If sampling or monitoring data relating to the release are not available within 30 days, these data must be submitted to the Division Director as soon as they become available;

(IV) Proximity to downgradient drinking water, surface water, and population areas; and

(V) Description of response actions taken or planned.

5. Provision of Secondary Containment, Repair, or Closure

(i) Unless the owner or operator satisfies the requirements of subparts (ii) through (iv) of this part, the tank system must be closed in accordance with subparagraph (h) of this paragraph.

(ii) If the cause of the release was a spill that has not damaged the integrity of the system, the owner/operator may return the system to service as soon as the released waste is removed and repairs, if necessary, are made.

(iii) If the cause of the release was a leak from the primary tank system into the secondary containment system, the system must be repaired prior to returning the tank system to service.

(iv) If the source of the release was a leak to the environment from a component of a tank system without secondary containment, the owner/operator must provide the component of the system from which the leak occurred with secondary containment that satisfies the requirements of subparagraph (d) of this paragraph before it can be returned to service, unless the source of the leak is an aboveground portion of a tank system. If the source is an aboveground component that can be inspected visually, the component must be repaired and may be returned to service without secondary containment as long as the requirements of part 6 of this subparagraph are satisfied. If a component is replaced to comply with the requirements of this subparagraph, that component must satisfy the requirements for new tank systems or components in subparagraphs (c) and (d) of this paragraph. Additionally, if a leak has occurred in any portion of a tank system component that is not readily accessible for visual inspection (e.g., the bottom of an inground or onground tank), the entire component must be provided with secondary containment in accordance with subparagraph (d) of this paragraph prior to being returned to use.

6. Certification of Major Repairs

If the owner or operator has repaired a tank system in accordance with part 5 of this subparagraph, and the repair has been extensive (e.g., installation of an internal liner; repair of a ruptured primary containment or secondary containment vessel), the tank system must not be returned to service unless the owner/operator has obtained a certification by a qualified Professional Engineer in accordance with Rule 0400-12-01-.07(2)(a)10 that the repaired system is capable of handling hazardous wastes without release for the intended life of the system. This certification is to be placed in the operating record and maintained until closure of the facility.

(Note: The Commissioner may, on the basis of any information received that there is or has been a release of hazardous waste or hazardous constituents into the environment,

issue an order under T.C.A. §68-212-111 requiring corrective action or such other response as deemed necessary to protect human health or the environment.)

(Note: See part (2)(f)3 of this rule for the requirements necessary to remedy a failure. Also, 40 CFR part 302 requires the owner or operator to notify the National Response Center of a release of any "reportable quantity" and Section 304 of Title III of the Superfund Amendment and Reauthorization Act of 1986 may require notification of the Tennessee Emergency Management Agency.)

(h) Closure and Post-closure Care [40 CFR 265.197]

1. At closure of a tank system, the owner or operator must remove or decontaminate all waste residues, contaminated containment system components (liners, etc.), contaminated soils, and structures and equipment contaminated with waste, and manage them as hazardous waste, unless Rule 0400-12-01-.02(1)(c)4 applies. The closure plan, closure activities, cost estimates for closure, and financial responsibility for tank systems must meet all of the requirements specified in paragraphs (7) and (8) of this rule.

2. If the owner or operator demonstrates that not all contaminated soils can be practicably removed or decontaminated as required in part 1 of this subparagraph, then the owner or operator must close the tank system and perform post-closure care in accordance with the closure and post-closure care requirements that apply to landfills (subparagraph (14)(k) of this rule). In addition, for the purposes of closure, post-closure, and financial responsibility, such a tank system is then considered to be a landfill, and the owner or operator must meet all of the requirements for landfills specified in paragraphs (7) and (8) of this rule.

3. If an owner or operator has a tank system which does not have secondary containment that meets the requirements of parts (d)2 through 6 of this paragraph and which is not exempt from the secondary containment requirements in accordance with part (d)7 of this paragraph; then,

   (i) The closure plan for the tank system must include both a plan for complying with part 1 of this subparagraph and a contingent plan for complying with part 2 of this subparagraph.

   (ii) A contingent post-closure plan for complying with part 2 of this subparagraph must be prepared and submitted as part of the permit application.

   (iii) The cost estimates calculated for closure and post-closure care must reflect the costs of complying with the contingent closure plan and the contingent post-closure plan, if these costs are greater than the costs of complying with the closure plan prepared for the expected closure under part 1 of this subparagraph.

   (iv) Financial assurance must be based on the cost estimates in subpart (iii) of this part.

   (v) For the purposes of the contingent closure and post-closure plans, such a tank system is considered to be a landfill, and the contingent plans must meet all of the closure, post-closure, and financial responsibility requirements for landfills under paragraphs (7) and (8) of this rule.

(i) Special Requirements for Ignitable or Reactive Wastes [40 CFR 265.198]

1. Ignitable or reactive waste must not be placed in a tank system, unless:

   (i) The waste is treated, rendered, or mixed before or immediately after placement in the tank system so that:

(I) The resulting waste, mixture, or dissolved material no longer meets the definition of ignitable or reactive waste under Rule 0400-12-01-.02(3)(b) or (d); and

(II) Part (2)(h)2 of this rule is complied with; or

(ii) The waste is stored or treated in such a way that it is protected from any material or conditions that may cause the waste to ignite or react; or

(iii) The tank system is used solely for emergencies.

2. The owner or operator of a facility where ignitable or reactive waste is stored or treated in tanks must comply with the requirements for the maintenance of protective distances between the waste management area and any public ways, streets, alleys, or an adjoining property line that can be built upon as required in Tables 2-1 through 2-6 of the National Fire Protection Association's "Flammable and Combustible Liquids Code," (1977 or 1981) (see Rule 0400-12-01-.01(2)(b)).

(j) Special Requirements for Incompatible Wastes [40 CFR 265.199]

1. Incompatible wastes, or incompatible waste and materials, must not be placed in the same tank system, unless part (2)(h)2 of this rule is complied with.

2. Hazardous waste must not be placed in a tank system that has not been decontaminated and that previously held an incompatible waste or material, unless part (2)(h)2 of this rule is complied with.

(k) Waste Analysis and Trial Tests [40 CFR 265.200]

In addition to performing the waste analysis required by subparagraph (2)(d) of this rule, the owner or operator must, whenever a tank system is to be used to treat chemically or to store a hazardous waste that is substantially different from waste previously treated or stored in that tank system; or treat chemically a hazardous waste with a substantially different process than any previously used in that tank system:

1. Conduct waste analyses and trial treatment or storage tests (e.g., bench-scale or pilot-plant scale tests); or

2. Obtain written, documented information on similar waste under similar operating conditions to show that the proposed treatment or storage will meet the requirements of part (e)1 of this paragraph.

(Note: Subparagraph (2)(d) of this rule requires the waste analysis plan to include analyses needed to comply with subparagraphs (i) and (j) of this paragraph. Subparagraph (5)(d) of this rule requires the owner or operator to place the results from each waste analysis and trial test, or the documented information, in the operating record of the facility.)

(l) Special Requirements for Generators of Between 100 and 1,000 kg/mo that Accumulate Hazardous Waste in Tanks [40 CFR 265.201]

1. The requirements of this subparagraph apply to small quantity generators of more than 100 kg but less than 1,000 kg of hazardous waste in a calendar month, that accumulate hazardous waste in tanks for less than 180 days (or 270 days if the generator must ship the waste greater than 200 miles), and do not accumulate over 6,000 kg on-site at any time.

2. Generators of between 100 and 1,000 kg/mo hazardous waste must comply with the following general operating requirements:

(i) Treatment or storage of hazardous waste in tanks must comply with part (2)(h)2 of this rule.

(ii) Hazardous wastes or treatment reagents must not be placed in a tank if they could cause the tank or its inner liner to rupture, leak, corrode, or otherwise fail before the end of its intended life.

(iii) Uncovered tanks must be operated to ensure at least 60 centimeters (2 feet) of freeboard, unless the tank is equipped with a containment structure (e.g., dike or trench), a drainage control system, or a diversion structure (e.g., standby tank) with a capacity that equals or exceeds the volume of the top 60 centimeters (2 feet) of the tank.

(iv) Where hazardous waste is continuously fed into a tank, the tank must be equipped with a means to stop this inflow (e.g., waste feed cutoff system or by-pass system to a stand-by tank).

(Note: These systems are intended to be used in the event of a leak or overflow from the tank due to a system failure (e.g., a malfunction in the treatment process, a crack in the tank, etc.).)

3. Except as noted in part 4 of this subparagraph, generators who accumulate between 100 and 1,000 kg/mo hazardous waste in tanks must inspect, where present:

(i) Discharge control equipment (e.g., waste feed cutoff systems, by-pass systems, and drainage systems) at least once each operating day, to ensure that it is in good working order;

(ii) Data gathered from monitoring equipment (e.g., pressure and temperature gauges) at least once each operating day to ensure that the tank is being operated according to its design;

(iii) The level of waste in the tank at least once each operating day to ensure compliance with subpart 2(iii) of this subparagraph;

(iv) The construction materials of the tank at least weekly to detect corrosion or leaking of fixtures or seams; and

(v) The construction materials of, and the area immediately surrounding, discharge confinement structures (e.g., dikes) at least weekly to detect erosion or obvious signs of leakage (e.g., wet spots or dead vegetation).

(Note: As required by part (2)(f)3 of this rule, the owner or operator must remedy any deterioration or malfunction he finds.)

4. Generators who accumulate between 100 and 1,000 kg/mo of hazardous waste in tanks or tank systems that have full secondary containment and that either use leak detection equipment to alert facility personnel to leaks, or implement established workplace practices to ensure leaks are promptly identified, must inspect at least weekly, where applicable, the areas identified in subparts 3(i) through (v) of this subparagraph. Use of the alternate inspection schedule must be documented in the facility's operating record. This documentation must include a description of the established workplace practices at the facility.

5. (Reserved)

6. Generators of between 100 and 1,000 kg/mo accumulating hazardous waste in tanks must, upon closure of the facility, remove all hazardous waste from tanks, discharge control equipment, and discharge confinement structures.

(Note: At closure, as throughout the operating period, unless the owner or operator can demonstrate, in accordance with Rule 0400-12-01-.02(1)(c)3 or 4, that any solid waste removed from his tank is not a hazardous waste, the owner or operator becomes a generator of hazardous waste and must manage it in accordance with all applicable requirements of Rules 0400-12-01-.03, .04, and this rule.)

7. Generators of between 100 and 1,000 kg/mo must comply with the following special requirements for ignitable or reactive waste:

(i) Ignitable or reactive waste must not be placed in a tank, unless:

(I) The waste is treated, rendered, or mixed before or immediately after placement in a tank so that

I. the resulting waste, mixture, or dissolution of material no longer meets the definition of ignitable or reactive waste under Rule 0400-12-01-.02(3)(b) or (d), and

II. part (2)(h)2 of this rule is complied with; or

(II) The waste is stored or treated in such a way that it is protected from any material or conditions that may cause the waste to ignite or react; or

(III) The tank is used solely for emergencies.

(ii) The owner or operator of a facility which treats or stores ignitable or reactive waste in covered tanks must comply with the buffer zone requirements for tanks contained in Tables 2-1 through 2-6 of the National Fire Protection Association's "Flammable and Combustible Liquids Code," (1977 or 1981) (listed in Rule 0400-12-01-.01(2)(b)).

8. Generators of between 100 and 1,000 kg/mo must comply with the following special requirements for incompatible wastes:

(i) Incompatible wastes, or incompatible wastes and materials, (see paragraph (53) Appendix V of this rule for examples) must not be placed in the same tank, unless part (2)(h)2 of this rule is complied with.

(ii) Hazardous waste must not be placed in an unwashed tank which previously held an incompatible waste or material, unless part (2)(h)2 of this rule is complied with.

(m) Air Emission Standards [40 CFR 265.202]

The owner or operator shall manage all hazardous waste placed in a tank in accordance with the applicable requirements of paragraphs (27), (28), and (29) of this rule.

(11) Surface Impoundments [40 CFR 265 Subpart K]

(a) Applicability [40 CFR 265.220]

The regulations in this paragraph apply to owners and operators of facilities that use surface impoundments to treat, store, or dispose of hazardous waste, except as subparagraph (1)(b) of this rule provides otherwise.

(b) Design and Operating Requirements [40 CFR 265.221]

1. The owner or operator of each new surface impoundment unit, each lateral expansion of

a surface impoundment unit, and each replacement of an existing surface impoundment unit must install two or more liners and a leachate collection and removal system above and between the liners, and operate the leachate collection and removal system, in accordance with Rule 0400-12-01-.06(11)(b)3, unless exempted under Rule 0400-12-01-.06(11)(b)4, 5, or 6.

2. The owner or operator of each unit referred to in part 1 of this subparagraph must notify the Commissioner at least sixty days prior to receiving waste. The owner or operator of each facility submitting notice must file a part B application within six months of the receipt of such notice.

3. The owner or operator of any replacement surface impoundment unit is exempt from part 1 of this subparagraph if:

   (i) The existing unit was constructed in compliance with the design standards of Rule 0400-12-01-.06(11)(b)3; and

   (ii) There is no reason to believe that the liner is not functioning as designed.

4. The double liner requirement set forth in part 1 of this subparagraph may be waived by the Commissioner for any monofill, if:

   (i) The monofill contains only hazardous wastes from foundry furnace emission controls or metal casting molding sand, and such wastes do not contain constituents which would render the wastes hazardous for reasons other than the Toxicity Characteristic in Rule 0400-12-01-.02(3)(e), with Hazardous Waste Codes D004 through D017; and

   (ii) (I) I. The monofill has at least one liner for which there is no evidence that such liner is leaking. For the purposes of this paragraph the term "liner" means a liner designed, constructed, installed, and operated to prevent hazardous waste from passing into the liner at any time during the active life of the facility, or a liner designed, constructed, installed, and operated to prevent hazardous waste from migrating beyond the liner to adjacent subsurface soil, ground water, or surface water at any time during the active life of the facility. In the case of any surface impoundment which has been exempted from the requirements of part 1 of this subparagraph on the basis of a liner designed, constructed, installed, and operated to prevent hazardous waste from passing beyond the liner, at the closure of such impoundment the owner or operator must remove or decontaminate all waste residues, all contaminated liner material, and contaminated soil to the extent practicable. If all contaminated soil is not removed or decontaminated, the owner or operator of such impoundment must comply with appropriate post-closure requirements, including but not limited to ground-water monitoring and corrective action;

   II. The monofill is located more than one-quarter mile from an "underground source of drinking water" (as that term is defined in Rule 0400-12-01-.01(2)(a)); and

   III. The monofill is in compliance with generally applicable ground-water monitoring requirements for facilities with permits under T.C.A. Section 68-212-108 of the Act; or

   (II) The owner or operator demonstrates that the monofill is located, designed and operated so as to assure that there will be no migration of

any hazardous constituent into ground water or surface water at any future time.

5. In the case of any unit in which the liner and leachate collection system has been installed pursuant to the requirements of part 1 of this subparagraph and in good faith compliance with part 1 of this subparagraph and with guidance documents governing liners and leachate collection systems under part 1 of this subparagraph, no liner or leachate collection system which is different from that which was so installed pursuant to part 1 of this subparagraph will be required for such unit by the Commissioner when issuing the first permit to such facility, except that the Commissioner will not be precluded from requiring installation of a new liner when the Commissioner has reason to believe that any liner installed pursuant to the requirements of part 1 of this subparagraph is leaking.

6. A surface impoundment must maintain enough freeboard to prevent any overtopping of the dike by overfilling, wave action, or a storm. Except as provided in part 2 of this subparagraph, there must be at least 60 centimeters (two feet) of freeboard.

7. A freeboard level less than 60 centimeters (two feet) may be maintained if the owner or operator obtains certification by a qualified engineer that alternate design features or operating plans will, to the best of his knowledge and opinion, prevent overtopping of the dike. The certification, along with a written identification of alternate design features or operating plans preventing overtopping, must be maintained at the facility.

8. Surface impoundments that are newly subject to T.C.A. §68-212-108 due to the promulgation of additional listings or characteristics for the identification of hazardous waste must be in compliance with parts 1, 3, and 4 of this subparagraph not later than 48 months after the promulgation of the additional listing or characteristic. This compliance period shall not be cut short as the result of the promulgation of land disposal prohibitions under Rule 0400-12-01-.10 or the granting of an extension to the effective date of a prohibition pursuant to Rule 0400-12-01-.10(1)(e), within this 48-month period.

(c) Action Leakage Rate [40 CFR 265.222]

1. The owner or operator of surface impoundment units subject to part (b)1 of this paragraph must submit a proposed action leakage rate to the Commissioner when submitting the notice required under part (b)2 of this paragraph. Within 60 days of receipt of the notification, the Commissioner will: Establish an action leakage rate, either as proposed by the owner or operator or modified using the criteria in this subparagraph; or extend the review period for up to 30 days. If no action is taken by the Commissioner before the original 60 or extended 90 day review periods, the action leakage rate will be approved as proposed by the owner or operator.

2. The Commissioner shall approve an action leakage rate for surface impoundment units subject to part (b)1 of this paragraph. The action leakage rate is the maximum design flow rate that the leak detection system (LDS) can remove without the fluid head on the bottom liner exceeding 1 foot. The action leakage rate must include an adequate safety margin to allow for uncertainties in the design (e.g., slope, hydraulic conductivity, thickness of drainage material), construction, operation, and location of the LDS, waste and leachate characteristics, likelihood and amounts of other sources of liquids in the LDS, and proposed response actions (e.g., the action leakage rate must consider decreases in the flow capacity of the system over time resulting from siltation and clogging, rib layover and creep of synthetic components of the system, overburden pressures, etc.).

3. To determine if the action leakage rate has been exceeded, the owner or operator must convert the weekly or monthly flow rate from the monitoring data obtained under part (h)2 of this paragraph, to an average daily flow rate (gallons per acre per day) for each sump. Unless the Commissioner approves a different calculation, the average daily flow rate for

each sump must be calculated weekly during the active life and closure period, and if the unit closes in accordance with subpart (j)1(ii) of this paragraph, monthly during the post-closure care period when monthly monitoring is required under part (h)2 of this paragraph.

(d) Containment System [40 CFR 265.223]

All earthen dikes must have a protective cover, such as grass, shale, or rock, to minimize wind and water erosion and to preserve their structural integrity.

(e) Response Actions [40 CFR 265.224]

1. The owner or operator of surface impoundment units subject to part (b)1 of this paragraph must develop and keep on site until closure of the facility a response action plan. The response action plan must set forth the actions to be taken if the action leakage rate has been exceeded. At a minimum, the response action plan must describe the actions specified in part 2 of this subparagraph.

2. If the flow rate into the leak detection system exceeds the action leakage rate for any sump, the owner or operator must:

   (i) Notify the Commissioner in writing of the exceedance within 7 days of the determination;

   (ii) Submit a preliminary written assessment to the Commissioner within 14 days of the determination, as to the amount of liquids, likely sources of liquids, possible location, size, and cause of any leaks, and short-term actions taken and planned;

   (iii) Determine to the extent practicable the location, size, and cause of any leak;

   (iv) Determine whether waste receipt should cease or be curtailed, whether any waste should be removed from the unit for inspection, repairs, or controls, and whether or not the unit should be closed;

   (v) Determine any other short-term and longer-term actions to be taken to mitigate or stop any leaks; and

   (vi) Within 30 days after the notification that the action leakage rate has been exceeded, submit to the Commissioner the results of the analyses specified in subparts (iii), (iv), and (v) of this part, the results of actions taken, and actions planned. Monthly thereafter, as long as the flow rate in the leak detection system exceeds the action leakage rate, the owner or operator must submit to the Commissioner a report summarizing the results of any remedial actions taken and actions planned.

3. To make the leak and/or remediation determinations in subparts 2(iii), (iv), and (v) of this subparagraph, the owner or operator must:

   (i) (I) Assess the source of liquids and amounts of liquids by source,

   (II) Conduct a fingerprint, hazardous constituent, or other analysis of the liquids in the leak detection system to identify the source of liquids and possible location of any leaks, and the hazard and mobility of the liquid; and

   (III) Assess the seriousness of any leaks in terms of potential for escaping into the environment; or

   (ii) Document why such assessments are not needed.

(f) (RESERVED)

(g) Waste Analysis and Trial Tests [40 CFR 265.225]

1. In addition to the waste analyses required by subparagraph (2)(d) of this rule, whenever a surface impoundment is to be used to:

(i) Chemically treat a hazardous waste which is substantially different from waste previously treated in that impoundment; or

(ii) Chemically treat hazardous waste with a substantially different process than any previously used in that impoundment; the owner or operator must, before treating the different waste or using the different process:

(I) Conduct waste analyses and trial treatment tests (e.g., bench scale or pilot plant scale tests); or

(II) Obtain written, documented information on similar treatment of similar waste under similar operating conditions; to show that this treatment will comply with part (2)(h)2 of this rule.

(Comment: As required by subparagraph (2)(d) of this rule, the waste analysis plan must include analyses needed to comply with subparagraphs (k) and (l) of this paragraph. As required by subparagraph (5)(d) of this rule, the owner or operator must place the results from each waste analysis and trial test, or the documented information, in the operating record of the facility.)

(h) Monitoring and Inspection [40 CFR 265.226]

1. The owner or operator must inspect:

(i) The freeboard level at least once each operating day to ensure compliance with subparagraph (c) of this paragraph, and

(ii) The surface impoundment, including dikes and vegetation surrounding the dike, at least once a week to detect any leaks, deterioration, or failures in the impoundment.

2. (i) An owner or operator required to have a leak detection system under part (b)1 of this paragraph must record the amount of liquids removed from each leak detection system sump at least once each week during the active life and closure period.

(ii) After the final cover is installed, the amount of liquids removed from each leak detection system sump must be recorded at least monthly. If the liquid level in the sump stays below the pump operating level for two consecutive months, the amount of liquids in the sumps must be recorded at least quarterly. If the liquid level in the sump stays below the pump operating level for two consecutive quarters, the amount of liquids in the sumps must be recorded at least semi-annually. If at any time during the post-closure care period the pump operating level is exceeded at units on quarterly or semi-annual recording schedules, the owner or operator must return to monthly recording of amounts of liquids removed from each sump until the liquid level again stays below the pump operating level for two consecutive months.

(iii) "Pump operating level" is a liquid level proposed by the owner or operator and approved by the Commissioner based on pump activation level, sump dimensions, and level that avoids backup into the drainage layer and minimizes

head in the sump. The timing for submission and approval of the proposed "pump operating level" will be in accordance with part (c)1 of this paragraph.

(Comment: As required by part (2)(f)3 of this rule, the owner or operator must remedy any deterioration or malfunction he finds.)

(i) (RESERVED) [40 CFR 265.227]

(j) Closure and Post-closure Care [40 CFR 265.228]

1. At closure, the owner or operator must:

(i) Remove or decontaminate all waste residues, contaminated containment system components (liners, etc.), contaminated subsoils, and structures and equipment contaminated with waste and leachate, and manage them as hazardous waste unless Rule 0400-12-01-.02(1)(c)4 applies; or

(ii) Close the impoundment and provide post-closure care for a landfill under paragraph (7) and subparagraph (14)(k) of this rule, including the following:

(I) Eliminate free liquids by removing liquid wastes or solidifying the remaining wastes and waste residues;

(II) Stabilize remaining wastes to a bearing capacity sufficient to support the final cover; and

(III) Cover the surface impoundment with a final cover designed and constructed to:

I. Provide long-term minimization of the migration of liquids through the closed impoundment;

II. Function with minimum maintenance;

III. Promote drainage and minimize erosion or abrasion of the cover;

IV. Accommodate settling and subsidence so that the cover's integrity is maintained; and

V. Have a permeability less than or equal to the permeability of any bottom liner system or natural subsoils present.

2. In addition to the requirements of paragraph (7) and subparagraph (14)(k) of this rule, during the post-closure care period, the owner or operator of a surface impoundment in which wastes, waste residues, or contaminated materials remain after closure in accordance with the provisions of subpart 1(ii) of this subparagraph must:

(i) Maintain the integrity and effectiveness of the final cover, including making repairs to the cover as necessary to correct the effects of settling, subsidence, erosion, or other events;

(ii) Maintain and monitor the leak detection system in accordance with item (11)(b)3(ii)(IV) and subpart (11)(b)3(iii) of Rule 0400-12-01-.06 and part (h)2 of this paragraph and comply with all other applicable leak detection system requirements of this rule;

(iii) Maintain and monitor the ground-water monitoring system and comply with all other applicable requirements of paragraph (6) of this rule; and

(iv) Prevent run-on and run-off from eroding or otherwise damaging the final cover.

(k) Special Requirements for Ignitable or Reactive Waste [40 CFR 265.229]

Ignitable or reactive waste must not be placed in a surface impoundment, unless the waste and impoundment satisfy all applicable requirements of Rule 0400-12-01-.10, and:

1. The waste is treated, rendered, or mixed before or immediately after placement in the impoundment so that:

   (i) The resulting waste, mixture, or dissolution of material no longer meets the definition of ignitable or reactive waste under subparagraph (3)(b) or (3)(d) of Rule 0400-12-01-.02; and

   (ii) Part (2)(h)2 of this rule is complied with; or

2. (i) The waste is managed in such a way that it is protected from any material or conditions which may cause it to ignite or react; and

   (ii) The owner or operator obtains a certification from a qualified chemist or engineer that, to the best of his knowledge and opinion, the design features or operating plans of the facility will prevent ignition or reaction; and

   (iii) The certification and the basis for it are maintained at the facility; or

3. The surface impoundment is used solely for emergencies.

(l) Special Requirements for Incompatible Wastes [40 CFR 265.230]

Incompatible wastes, or incompatible wastes and materials, (see paragraph (53) Appendix V of this rule for examples) must not be placed in the same surface impoundment, unless part (2)(h)2 of this rule is complied with.

(m) Air Emission Standards [40 CFR 265.231]

The owner or operator shall manage all hazardous waste placed in a surface impoundment in accordance with the applicable requirements of paragraphs (28) and (29) of this rule.

(12) Waste Piles [40 CFR 265 Subpart L]

(a) Applicability [40 CFR 265.250]

The regulations in this paragraph apply to owners and operators of facilities that treat or store hazardous waste in piles, except as paragraph (1) of this rule provides otherwise. Alternatively, a pile of hazardous waste may be managed as a landfill under paragraph (14) of this rule.

(b) Protection from Wind [40 CFR 265.251]

The owner or operator of a pile containing hazardous waste which could be subject to dispersal by wind must cover or otherwise manage the pile so that wind dispersal is controlled.

(c) Waste Analysis [40 CFR 265.252]

In addition to the waste analyses required by subparagraph (2)(d) of this rule, the owner or operator must analyze a representative sample of waste from each incoming movement before adding the waste to any existing pile, unless

1. The only wastes the facility receives which are amenable to piling are compatible with each other, or

2. The waste received is compatible with the waste in the pile to which it is to be added. The analysis conducted must be capable of differentiating between the types of hazardous waste the owner or operator places in piles, so that mixing of incompatible waste does not inadvertently occur. The analysis must include a visual comparison of color and texture.

(Comment: As required by subparagraph (2)(d) of this rule, the waste analysis plan must include analyses needed to comply with subparagraphs (g) and (h) of this paragraph. As required by subparagraph (5)(d) of this rule, the owner or operator must place the results of this analysis in the operating record of the facility.)

(d) Containment [40 CFR 265.253]

If leachate or run-off from a pile is a hazardous waste, then either:

1. (i) The pile must be placed on an impermeable base that is compatible with the waste under the conditions of treatment or storage;

(ii) The owner or operator must design, construct, operate, and maintain a run-on control system capable of preventing flow onto the active portion of the pile during peak discharge from at least a 25-year storm;

(iii) The owner or operator must design, construct, operate, and maintain a run-off management system to collect and control at least the water volume resulting from a 24-hour, 25-year storm; and

(iv) Collection and holding facilities (e.g., tanks or basins) associated with run-on and run-off control systems must be emptied or otherwise managed expeditiously to maintain design capacity of the system; or

2. (i) The pile must be protected from precipitation and run-on by some other means; and

(ii) No liquids or wastes containing free liquids may be placed in the pile.

(Comment: If collected leachate or run-off is discharged through a point source to waters of the United States, it is subject to the requirements of T.C.A. Section 69-3-101 et seq. and/or section 402 of the Clean Water Act, as amended.)

(e) Design and Operating Requirements [40 CFR 265.254]

The owner or operator of each new waste pile on which construction commences after January 29, 1992, each lateral expansion of a waste pile unit on which construction commences after July 29, 1992, and each such replacement of an existing waste pile unit that is to commence reuse after July 29, 1992 must install two or more liners and a leachate collection and removal system above and between such liners, and operate the leachate collection and removal systems, in accordance with Rule 0400-12-01-.06(12)(b)3, unless exempted under Rule 0400-12-01-.06(12)(b)4, 5, or 6; and must comply with the procedures of part (11)(b)2 of this rule. "Construction commences" is as defined in Rule 0400-12-01-.01(2)(a) under "existing facility".

(f) Action Leakage Rates [40 CFR 265.255]

1. The owner or operator of waste pile units subject to subparagraph (e) of this paragraph must submit a proposed action leakage rate to the Commissioner when submitting the notice required under subparagraph (e) of this paragraph. Within 60 days of receipt of the notification, the Commissioner will: Establish an action leakage rate, either as proposed by the owner or operator or modified using the criteria in this subparagraph; or extend the review period for up to 30 days. If no action is taken by the Commissioner before the

original 60 or extended 90 day review periods, the action leakage rate will be approved as proposed by the owner or operator.

2. The Commissioner shall approve an action leakage rate for waste pile units subject to subparagraph (e) of this paragraph. The action leakage rate is the maximum design flow rate that the leak detection system (LDS) can remove without the fluid head on the bottom liner exceeding 1 foot. The action leakage rate must include an adequate safety margin to allow for uncertainties in the design (e.g., slope, hydraulic conductivity, thickness of drainage material), construction, operation, and location of the LDS, waste and leachate characteristics, likelihood and amounts of other sources of liquids in the LDS, and proposed response actions (e.g., the action leakage rate must consider decreases in the flow capacity of the system over time resulting from siltation and clogging, rib layover and creep of synthetic components of the system, overburden pressures, etc.).

3. To determine if the action leakage rate has been exceeded, the owner or operator must convert the weekly flow rate from the monitoring data obtained under subparagraph (k) of this paragraph, to an average daily flow rate (gallons per acre per day) for each sump. Unless the Commissioner approves a different calculation, the average daily flow rate for each sump must be calculated weekly during the active life and closure period.

(g) Special Requirements for Ignitable or Reactive Waste [40 CFR 265.256]

1. Ignitable or reactive waste must not be placed in a pile unless the waste and pile satisfy all applicable requirements of Rule 0400-12-01-.10, and:

(i) Addition of the waste to an existing pile

(I) results in the waste or mixture no longer meeting the definition of ignitable or reactive waste under Rule 0400-12-01-.02(3)(b) or (d), and

(II) complies with part (2)(h)2 of this rule; or

(ii) The waste is managed in such a way that it is protected from any material or conditions which may cause it to ignite or react.

(h) Special Requirements for Incompatible Wastes [40 CFR 265.257]

1. Incompatible wastes, or incompatible wastes and materials, (see paragraph (53), Appendix V of this rule for examples) must not be placed in the same pile, unless part (2)(h)2 of this rule is complied with.

2. A pile of hazardous waste that is incompatible with any waste or other material stored nearby in other containers, piles, open tanks, or surface impoundments must be separated from the other materials, or protected from them by means of a dike, berm, wall, or other device.

(Comment: The purpose of this is to prevent fires, explosions, gaseous emissions, leaching, or other discharge of hazardous waste or hazardous waste constituents which could result from the contact or mixing of incompatible wastes or materials.)

3. Hazardous waste must not be piled on the same area where incompatible wastes or materials were previously piled, unless that area has been decontaminated sufficiently to ensure compliance with part (2)(h)2 of this rule.

(i) Closure and Post-closure Care [40 CFR 265.258]

1. At closure, the owner or operator must remove or decontaminate all waste residues, contaminated containment system components (liners, etc.), contaminated subsoils, and

structures and equipment contaminated with waste and leachate, and manage them as hazardous waste unless Rule 0400-12-01-.02(1)(c)4 applies; or

2. If, after removing or decontaminating all residues and making all reasonable efforts to effect removal or decontamination of contaminated components, subsoils, structures, and equipment as required in part 1 of this subparagraph, the owner or operator finds that not all contaminated subsoils can be practicably removed or decontaminated, he must close the facility and perform post-closure care in accordance with the closure and post-closure requirements that apply to landfills (subparagraph (14)(k) of this rule).

(j) Response Actions [40 CFR 265.259]

1. The owner or operator of waste pile units subject to subparagraph (e) of this paragraph must develop and keep on-site until closure of the facility a response action plan. The response action plan must set forth the actions to be taken if the action leakage rate has been exceeded. At a minimum, the response action plan must describe the actions specified in part 2 of this subparagraph.

2. If the flow rate into the leak determination system exceeds the action leakage rate for any sump, the owner or operator must:

(i) Notify the Commissioner in writing of the exceedance within 7 days of the determination;

(ii) Submit a preliminary written assessment to the Commissioner within 14 days of the determination, as to the amount of liquids, likely sources of liquids, possible location, size, and cause of any leaks, and short-term actions taken and planned;

(iii) Determine to the extent practicable the location, size, and cause of any leak;

(iv) Determine whether waste receipts should cease or be curtailed, whether any waste should be removed from the unit for inspection, repairs, or controls, and whether or not the unit should be closed;

(v) Determine any other short-term and longer-term actions to be taken to mitigate or stop any leaks; and

(vi) Within 30 days after the notification that the action leakage rate has been exceeded, submit to the Commissioner the results of the analyses specified in subparts (iii), (iv), and (v) of this part, the results of actions taken, and actions planned. Monthly thereafter, as long as the flow rate in the leak detection system exceeds the action leakage rate, the owner or operator must submit to the Commissioner a report summarizing the results of any remedial actions taken and actions planned.

3. To make the leak and/or remediation determinations in subparts 2(iii), (iv), and (v) of this subparagraph, the owner or operator must:

(i) (I) Assess the source of liquids and amounts of liquids by source,

(II) Conduct a fingerprint, hazardous constituent, or other analysis of the liquids in the leak detection system to identify the source of liquids and possible location of any leaks, and the hazard and mobility of the liquid; and

(III) Assess the seriousness of any leaks in terms of potential for escaping into the environment; or

(ii) Document why such assessments are not needed.

(k) Monitoring and Inspection [40 CFR 265.260]

An owner or operator required to have a leak detection system under subparagraph (e) of this paragraph must record the amount of liquids removed from each leak detection system sump at least once each week during the active life and closure period.

(13) Land Treatment [40 CFR 265 Subpart M]

(a) Applicability

The regulations in this subpart apply to owners and operators of hazardous waste land treatment facilities, except as subparagraph (1) of this rule provides otherwise.

(b) (RESERVED) [40 CFR 265.271]

(c) General Operating Requirements [40 CFR 265.272]

1. Hazardous waste must not be placed in or on a land treatment facility unless the waste can be made less hazardous or nonhazardous by degradation, transformation, or immobilization processes occurring in or on the soil.

2. The owner or operator must design, construct, operate, and maintain a run-on control system capable of preventing flow onto the active portions of the facility during peak discharge from at least a 25-year storm.

3. The owner or operator must design, construct, operate, and maintain a run-off management system capable of collecting and controlling a water volume at least equivalent to a 24-hour, 25-year storm.

4. Collection and holding facilities (e.g., tanks or basins) associated with run-on and run-off control systems must be emptied or otherwise managed expeditiously after storms to maintain design capacity of the system.

5. If the treatment zone contains particulate matter which may be subject to wind dispersal, the owner or operator must manage the unit to control wind dispersal.

(d) Waste Analysis [40 CFR 265.273]

In addition to the waste analyses required by subparagraph (2)(d) of this rule, before placing a hazardous waste in or on a land treatment facility, the owner or operator must:

1. Determine the concentrations in the waste of any substances which equal or exceed the maximum concentrations contained in Table 1 of Rule 0400-12-01-.02(3)(e) that cause a waste to exhibit the Toxicity Characteristic;

2. For any waste listed in Rule 0400-12-01-.02(4), determine the concentrations of any substances which caused the waste to be listed as a hazardous waste; and

3. If food chain crops are grown, determine the concentrations in the waste of each of the following constituents: arsenic, cadmium, lead, and mercury, unless the owner or operator has written, documented data that show that the constituent is not present.

(Comment: Rule 0400-12-01-.02 specifies the substances for which a waste is listed as a hazardous waste. As required by subparagraph (2)(d) of this rule, the waste analysis plan must include analyses needed to comply with subparagraphs (l) and (m) of this paragraph. As required by subparagraph (5)(d) of this rule, the owner or operator must place the results from each waste analysis, or the documented information, in the operating record of the facility.)

(e) (RESERVED) [40 CFR 265.274]

(f) (RESERVED) [40 CFR 265.275]

(g) Food Chain Crops [40 CFR 265.276]

1. An owner or operator of a hazardous waste land treatment facility on which food chain crops are being grown, or have been grown and will be grown in the future, must notify the Commissioner within 60 days after the effective date of this part.

(Comment: The growth of food chain crops at a facility which has never before been used for this purpose is a significant change in process under Rule 0400-12-01-.07(3)(c)3. Owners or operators of such land treatment facilities who propose to grow food chain crops after the effective date of this rule must comply with Rule 0400-12-01-.07(3)(c)3.)

2. (i) Food chain crops must not be grown on the treated area of a hazardous waste land treatment facility unless the owner or operator can demonstrate, based on field testing, that any arsenic, lead, mercury, or other constituents identified under part (d)2 of this paragraph:

(I) Will not be transferred to the food portion of the crop by plant uptake or direct contact, and will not otherwise be ingested by food chain animals (e.g., by grazing); or

(II) Will not occur in greater concentrations in the crops grown on the land treatment facility than in the same crops grown on untreated soils under similar conditions in the same region.

(ii) The information necessary to make the demonstration required by subpart (i) of this part must be kept at the facility and must, at a minimum:

(I) Be based on tests for the specific waste and application rates being used at the facility; and

(II) Include descriptions of crop and soil characteristics, sample selection criteria, sample size determination, analytical methods, and statistical procedures.

3. Food chain crops must not be grown on a land treatment facility receiving waste that contains cadmium unless all requirements of items (i)(I) through (III) of this part or all requirements of items (ii)(I) through (IV) of this part are met.

(i) (I) The pH of the waste and soil mixture is 6.5 or greater at the time of each waste application, except for waste containing cadmium at concentrations of 2 mg/kg (dry weight) or less;

(II) The annual application of cadmium from waste does not exceed 0.5 kilograms per hectare (kg/ha) on land used for production of tobacco, leafy vegetables, or root crops grown for human consumption. For other food chain crops, the annual cadmium application rate does not exceed:

Time Period	Annual Cd Application Rate (kg/ha)
Present to June 30, 1984	2.0
July 1, 1984 to December 31, 1986	1.25
Beginning January 1, 1987	0.5

(III) The cumulative application of cadmium from waste does not exceed the levels in either subitem I or II of this item.

I.

Soil Caption Exchange Capacity (meq/100g)	Maximum Cumulative Application (kg/ha)	
	Background Soil pH Less than 6.5	Background Soil pH Greater than 6.5
Less than 5	5	5
5 to 15	5	10
Greater than 15	5	20

II. For soils with a background pH of less than 6.5, the cumulative cadmium application rate does not exceed the levels below: provided, that the pH of the waste and soil mixture is adjusted to and maintained at 6.5 or greater whenever food chain crops are grown.

Soil Caption Exchange Capacity (meq/100g)	Maximum Cumulative Application (kg/ha)
Less than 5	5
5 to 15	10
Greater than 15	20

(ii) (I) The only food chain crop produced is animal feed.

(II) The pH of the waste and soil mixture is 6.5 or greater at the time of waste application or at the time the crop is planted, whichever occurs later, and this pH level is maintained whenever food chain crops are grown.

(III) There is a facility operating plan which demonstrates how the animal feed will be distributed to preclude ingestion by humans. The facility operating plan describes the measures to be taken to safeguard against possible health hazards from cadmium entering the food chain, which may result from alternative land uses.

(IV) Future property owners are notified by a stipulation in the land record or property deed which states that the property has received waste at high cadmium application rates and that food chain crops must not be grown except in compliance with this subpart.

(Comment: As required by subparagraph (5)(d) of this rule, if an owner or operator grows food chain crops on his land treatment facility, he must place the information developed in this subparagraph in the operating record of the facility.)

(h) (RESERVED) [40 CFR 265.277]

(i) Unsaturated Zone (Zone of Aeration) Monitoring [40 CFR 265.278]

1. The owner or operator must have in writing, and must implement, an unsaturated zone monitoring plan which is designed to:

(i) Detect the vertical migration of hazardous waste and hazardous waste constituents under the active portion of the land treatment facility, and

(ii) Provide information on the background concentrations of the hazardous waste and hazardous waste constituents in similar but untreated soils nearby; this background monitoring must be conducted before or in conjunction with the

monitoring required under subpart (i) of this part.

2. The unsaturated zone monitoring plan must include, at a minimum:

   (i) Soil monitoring using soil cores, and

   (ii) Soil-pore water monitoring using devices such as lysimeters.

3. To comply with subpart 1(i) of this subparagraph, the owner or operator must demonstrate in his unsaturated zone monitoring plan that:

   (i) The depth at which soil and soil-pore water samples are to be taken is below the depth to which the waste is incorporated into the soil;

   (ii) The number of soil and soil-pore water samples to be taken is based on the variability of:

      (I) The hazardous waste constituents (as identified in part (d)1 and 2 of this paragraph) in the waste and in the soil; and

      (II) The soil type(s); and

   (iii) The frequency and timing of soil and soil-pore water sampling is based on the frequency, time, and rate of waste application, proximity to ground water, and soil permeability.

4. The owner or operator must keep at the facility his unsaturated zone monitoring plan and the rationale used in developing this plan.

5. The owner or operator must analyze the soil and soil-pore water samples for the hazardous waste constituents that were found in the waste during the waste analysis under part (d)1 and 2 of this paragraph.

(Comment: As required by subparagraph (5)(d) of this rule, all data and information developed by the owner or operator under this subparagraph must be placed in the operating record of the facility.)

(j) Recordkeeping [40 CFR 265.279]

The owner or operator must include hazardous waste application dates and rates in the operating record required under subparagraph (5)(d) of this rule.

(k) Closure and Post-closure [40 CFR 265.280]

1. In the closure plan under subparagraph (7)(c) of this rule and the post-closure plan under subparagraph (7)(i) of this rule, the owner or operator must address the following objectives and indicate how they will be achieved:

   (i) Control of the migration of hazardous waste and hazardous waste constituents from the treated area into the ground water;

   (ii) Control of the release of contaminated run-off from the facility into surface water;

   (iii) Control of the release of airborne particulate contaminants caused by wind erosion; and

   (iv) Compliance with subparagraph (g) of this paragraph concerning the growth of food-chain crops.

2. The owner or operator must consider at least the following factors in addressing the closure and post-closure care objectives of part 1 of this subparagraph:

(i) Type and amount of hazardous waste and hazardous waste constituents applied to the land treatment facility;

(ii) The mobility and the expected rate of migration of the hazardous waste and hazardous waste constituents;

(iii) Site location, topography, and surrounding land use, with respect to the potential effects of pollutant migration (e.g., proximity to ground water, surface water and drinking water sources);

(iv) Climate, including amount, frequency, and pH of precipitation;

(v) Geological and soil profiles and surface and subsurface hydrology of the site, and soil characteristics, including cation exchange capacity, total organic carbon, and pH;

(vi) Unsaturated zone monitoring information obtained under subparagraph (i) of this paragraph; and

(vii) Type, concentration, and depth of migration of hazardous waste constituents in the soil as compared to their background concentrations.

3. The owner or operator must consider at least the following methods in addressing the closure and post-closure care objectives of part 1 of this subparagraph:

(i) Removal of contaminated soils;

(ii) Placement of a final cover, considering:

(I) Functions of the cover (e.g., infiltration control, erosion and run-off control, and wind erosion control); and

(II) Characteristics of the cover, including material, final surface contours, thickness, porosity and permeability, slope, length of run of slope, and type of vegetation on the cover; and

(iii) Monitoring of ground water.

4. In addition to the requirements of paragraph (7) of this rule, during the closure period the owner or operator of a land treatment facility must:

(i) Continue unsaturated zone monitoring in a manner and frequency specified in the closure plan, except that soil pore liquid monitoring may be terminated 90 days after the last application of waste to the treatment zone;

(ii) Maintain the run-on control system required under part (c)2 of this paragraph;

(iii) Maintain the run-off management system required under part (c)3 of this paragraph; and

(iv) Control wind dispersal of particulate matter which may be subject to wind dispersal.

5. For the purpose of complying with subparagraph (7)(f) of this rule, when closure is completed the owner or operator may submit to the Commissioner certification both by the owner or operator and by an independent qualified soil scientist, in lieu of a qualified

Professional Engineer, that the facility has been closed in accordance with the specifications in the approved closure plan.

6. In addition to the requirements of subparagraph (7)(h) of this rule, during the post-closure care period the owner or operator of a land treatment unit must:

(i) Continue soil-core monitoring by collecting and analyzing samples in a manner and frequency specified in the post-closure plan;

(ii) Restrict access to the unit as appropriate for its post-closure use;

(iii) Assure that growth of food chain crops complies with subparagraph (g) of this paragraph; and

(iv) Control wind dispersal of hazardous waste.

(l) Special Requirements for Ignitable or Reactive Waste [40 CFR 265.281]

The owner or operator must not apply ignitable or reactive waste to the treatment zone unless the waste and treatment zone meet all applicable requirements of Rule 0400-12-01-.10, and:

1. The waste is immediately incorporated into the soil so that:

(i) The resulting waste, mixture, or dissolution of material no longer meets the definition of ignitable or reactive waste under Rule 0400-12-01-.02(3)(b) or (d); and

(ii) Part (2)(h)2 of this rule is complied with; or

2. The waste is managed in such a way that it is protected from any material or conditions which may cause it to ignite or react.

(m) Special Requirements for Incompatible Wastes [40 CFR 265.282]

Incompatible wastes, or incompatible wastes and materials (see paragraph (53), Appendix V of this rule for examples), must not be placed in the same land treatment area, unless part (2)(h)2 of this rule is complied with.

(14) Landfills [40 CFR 265 Subpart N]

(a) Applicability [40 CFR 265.300]

The regulations in this subpart apply to owners and operators of facilities that dispose of hazardous waste in landfills, except as subparagraph (1) of this rule provides otherwise. A waste pile used as a disposal facility is a landfill and is governed by this paragraph.

(b) Design and Operating Requirements [40 CFR 265.301]

1. The owner or operator of each new landfill unit, each lateral expansion of a landfill unit, and each replacement of an existing landfill unit must install two or more liners and a leachate collection and removal system above and between such liners, and operate the leachate collection and removal system, in accordance with part (14)(b)3 of Rule 0400-12-01-.06, unless exempted under part (14)(b)4, 5, or 6 of Rule 0400-12-01-.06.

2. The owner or operator of each unit referred to in part 1 of this subparagraph must notify the Commissioner at least sixty days prior to receiving waste. The owner or operator of each facility submitting notice must file a part B application within six months of the receipt of such notice.

3. The owner or operator of any replacement landfill unit is exempt from part 1 of this subparagraph if:

   (i) The existing unit was constructed in compliance with the design standards of this paragraph; and

   (ii) There is no reason to believe that the liner is not functioning as designed.

4. The double liner requirement set forth in part 1 of this subparagraph may be waived by the Commissioner for any monofill, if:

   (i) The monofill contains only hazardous wastes from foundry furnace emission controls or metal casting molding sand, and such wastes do not contain constituents which would render the wastes hazardous for reasons other than the Toxicity Characteristic in Rule 0400-12-01-.02(3)(d), with Hazardous Waste Codes D004 through D017; and

   (ii) (I) I. The monofill has at least one liner for which there is no evidence that such liner is leaking;

   II. The monofill is located more than one-quarter mile from an underground source of drinking water (as that term is defined in Rule 0400-12-01-.01(2)(a)); and

   III. The monofill is in compliance with generally applicable ground-water monitoring requirements for facilities with permits under T.C.A. Section 68-212-108 of the Act; or

   (II) The owner or operator demonstrates that the monofill is located, designed and operated so as to assure that there will be no migration of any hazardous constituent into ground water or surface water at any future time.

5. In the case of any unit in which the liner and leachate collection system has been installed pursuant to the requirements of part 1 of this subparagraph and in good faith compliance with that part and with guidance documents governing liners and leachate collection systems under that part, no liner or leachate collection system which is different from that which was so installed pursuant to part 1 of this subparagraph will be required for such unit by the Commissioner when issuing the first permit to such facility, except that the Commissioner will not be precluded from requiring installation of a new liner when the Commissioner has reason to believe that any liner installed pursuant to the requirements of part 1 of this subparagraph is leaking.

6. The owner or operator must design, construct, operate, and maintain a run-on control system capable of preventing flow onto the active portion of the landfill during peak discharge from at least a 25-year storm.

7. The owner or operator must design, construct, operate and maintain a run-off management system to collect and control at least the water volume resulting from a 24-hour, 25-year storm.

8. Collection and holding facilities (e.g., tanks or basins) associated with run-on and run-off control systems must be emptied or otherwise managed expeditiously after storms to maintain design capacity of the system.

9. The owner or operator of a landfill containing hazardous waste which is subject to dispersal by wind must cover or otherwise manage the landfill so that wind dispersal of the hazardous waste is controlled.

(Comment: As required by subparagraph (2)(d) of this rule, the waste analysis plan must include analyses needed to comply with subparagraphs (m), (n), and (o) of this paragraph. As required by subparagraph (5)(d) of this rule, the owner or operator must place the results of these analyses in the operating record of the facility.)

(c) Action Leakage Rate [40 CFR 265.302]

1. The owner or operator of landfill units subject to part (b)1 of this paragraph must submit a proposed action leakage rate to the Commissioner when submitting the notice required under part (b)2 of this paragraph. Within 60 days of receipt of the notification, the Commissioner will: Establish an action leakage rate, either as proposed by the owner or operator or modified using the criteria in this subparagraph; or extend the review period for up to 30 days. If no action is taken by the Commissioner before the original 60 or extended 90 day review periods, the action leakage rate will be approved as proposed by the owner or operator.

2. The Commissioner shall approve an action leakage rate for landfill units subject to part (b)1 of this paragraph. The action leakage rate is the maximum design flow rate that the leak detection system (LDS) can remove without the fluid head on the bottom liner exceeding 1 foot. The action leakage rate must include an adequate safety margin to allow for uncertainties in the design (e.g., slope, hydraulic conductivity, thickness of drainage material), construction, operation, and location of the LDS, waste and leachate characteristics, likelihood and amounts of other sources of liquids in the LDS, and proposed response actions (e.g., the action leakage rate must consider decreases in the flow capacity of the system over time resulting from siltation and clogging, rib layover and creep of synthetic components of the system, overburden pressures, etc.).

3. To determine if the action leakage rate has been exceeded, the owner or operator must convert the weekly or monthly flow rate from the monitoring data obtained under subparagraph (e) of this paragraph to an average daily flow rate (gallons per acre per day) for each sump. Unless the Commissioner approves a different calculation, the average daily flow rate for each sump must be calculated weekly during the active life and closure period, and monthly during the post-closure care period when monthly monitoring is required under part (e)2 of this paragraph.

(d) Response Actions [40 CFR 265.303]

1. The owner or operator of landfill units subject to part (b)1 of this paragraph must develop and keep on-site until closure of the facility a response action plan. The response action plan must set forth the actions to be taken if the action leakage rate has been exceeded. At a minimum, the response action plan must describe the actions specified in part 2 of this subparagraph.

2. If the flow rate into the leak detection system exceeds the action leakage rate for any sump, the owner or operator must:

   (i) Notify the Commissioner in writing of the exceedance within 7 days of the determination;

   (ii) Submit a preliminary written assessment to the Commissioner within 14 days of the determination, as to the amount of liquids, likely sources of liquids, possible location, size, and cause of any leaks, and short-term actions taken and planned;

   (iii) Determine to the extent practicable the location, size, and cause of any leak;

   (iv) Determine whether waste receipt should cease or be curtailed, whether any waste should be removed from the unit for inspection, repairs, or controls, and whether or not the unit should be closed;

(v) Determine any other short-term and longer-term actions to be taken to mitigate or stop any leaks; and

(vi) Within 30 days after the notification that the action leakage rate has been exceeded, submit to the Commissioner the results of the analyses specified in subparts (iii), (iv), and (v) of this part, the results of actions taken, and actions planned. Monthly thereafter, as long as the flow rate in the leak detection system exceeds the action leakage rate, the owner or operator must submit to the Commissioner a report summarizing the results of any remedial actions taken and actions planned.

3. To make the leak and/or remediation determinations in subparts 2(iii), (iv), and (v) of this subparagraph, the owner or operator must:

(i) (I) Assess the source of liquids and amounts of liquids by source;

(II) Conduct a fingerprint, hazardous constituent, or other analyses of the liquids in the leak detection system to identify the source of liquids and possible location of any leaks, and the hazard and mobility of the liquid; and

(III) Assess the seriousness of any leaks in terms of potential for escaping into the environment; or

(ii) Document why such assessments are not needed.

(e) Monitoring and Inspection [40 CFR 265.304]

1. An owner or operator required to have a leak detection system under part (b)1 of this paragraph must record the amount of liquids removed from each leak detection system sump at least once each week during the active life and closure period.

2. After the final cover is installed, the amount of liquids removed from each leak detection system sump must be recorded at least monthly. If the liquid level in the sump stays below the pump operating level for two consecutive months, the amount of liquids in the sumps must be recorded at least quarterly. If the liquid level in the sump stays below the pump operating level for two consecutive quarters, the amount of liquids in the sumps must be recorded at least semi-annually. If at any time during the post-closure care period the pump operating level is exceeded at units on quarterly or semi-annual recording schedules, the owner or operator must return to monthly recording of amounts of liquids removed from each sump until the liquid level again stays below the pump operating level for two consecutive months.

3. "Pump operating level" is a liquid level proposed by the owner or operator and approved by the Commissioner based on pump activation level, sump dimensions, and level that avoids backup into the drainage layer and minimizes head in the sump. The timing for submission and approval of the proposed "pump operating level" will be in accordance with part (c)1 of this paragraph.

(f) through (i) (RESERVED) [40 CFR 265.305-265.308]

(j) Surveying and Recordkeeping [40 CFR 265.309]

The owner or operator of a landfill must maintain the following items in the operating record required in subparagraph (5)(d) of this rule:

1. On a map, the exact location and dimensions, including depth, of each cell with respect to permanently surveyed benchmarks; and

2. The contents of each cell and the approximate location of each hazardous waste type within each cell.

(k) Closure and Post-closure Care [40 CFR 265.310]

1. At final closure of the landfill or upon closure of any cell, the owner or operator must cover the landfill or cell with a final cover designed and constructed to:

(i) Provide long-term minimization of migration of liquids through the closed landfill;

(ii) Function with minimum maintenance;

(iii) Promote drainage and minimize erosion or abrasion of the cover;

(iv) Accommodate settling and subsidence so that the cover's integrity is maintained; and

(v) Have a permeability less than or equal to the permeability of any bottom liner system or natural subsoils present.

2. After final closure, the owner or operator must comply with all post-closure requirements contained in subparagraphs (7)(h) through (k) of this rule including maintenance and monitoring throughout the post-closure care period. The owner or operator must:

(i) Maintain the integrity and effectiveness of the final cover, including making repairs to the cover as necessary to correct the effects of settling, subsidence, erosion, or other events;

(ii) Maintain and monitor the leak detection system in accordance with item (14)(b)3(iii)(IV) and subpart (14)(b)3(iv) of Rule 0400-12-01-.06 and subparagraph (e) of this paragraph, and comply with all other applicable leak detection system requirements of this rule;

(iii) Maintain and monitor the ground-water monitoring system and comply with all other applicable requirements of paragraph (6) of this rule;

(iv) Prevent run-on and run-off from eroding or otherwise damaging the final cover; and

(v) Protect and maintain surveyed benchmarks used in complying with subparagraph (j) of this paragraph.

(l) (RESERVED) [40 CFR 265.311]

(m) Special Requirements for Ignitable or Reactive Waste [40 CFR 265.312]

1. Except as provided in part 2 of this subparagraph, and in subparagraph (q) of this paragraph, ignitable or reactive waste must not be placed in a landfill, unless the waste and landfill meets all applicable requirements of Rule 0400-12-01-.10, and:

(i) The resulting waste, mixture, or dissolution of material no longer meets the definition of ignitable or reactive waste under paragraphs (3)(b) or (d) of Rule 0400-12-01-.02; and

(ii) Part (2)(h)2 of this rule is complied with.

2. Except for prohibited wastes which remain subject to treatment standards in paragraph (3) of Rule 0400-12-01-.10, ignitable wastes in containers may be landfilled without meeting the requirements of part 1 of this subparagraph, provided that the wastes are

disposed of in such a way that they are protected from any material or conditions which may cause them to ignite or react. At a minimum, ignitable wastes must be disposed of in non-leaking containers which are carefully handled and placed so as to avoid heat, sparks, rupture, or any other condition that might cause ignition or reaction of the wastes; must be covered daily with soil or other non-combustible material to minimize the potential for ignition or reaction of the wastes; and must not be disposed of in cells that contain or will contain other wastes which may generate heat sufficient to cause ignition of the waste.

(n) Special Requirements for Incompatible Wastes [40 CFR 265.313]

Incompatible wastes, or incompatible wastes and materials, (see paragraph (53) Appendix V of this rule for examples) must not be placed in the same landfill cell, unless part (2)(h)2 of this rule is complied with.

(o) Special Requirements for Bulk and Containerized Liquids [40 CFR 265.314]

(Note: Implementation of this provision remains with EPA.)

1. The placement of bulk or non-containerized liquid hazardous waste or hazardous waste containing free liquids (whether or not sorbents have been added) in any landfill is prohibited.

   (Note: Implementations of this provision between May 8, 1985 and February 2, 1986 remains with EPA.)

2. Containers holding free liquids must not be placed in a landfill unless:

   (i) All free-standing liquid

      (I) has been removed by decanting, or other methods;

      (II) has been mixed with sorbent or solidified so that free-standing liquid is no longer observed; or

      (III) had been otherwise eliminated; or

   (ii) The container is very small, such as an ampule; or

   (iii) The container is designed to hold free liquids for use other than storage, such as a battery or capacitor; or

   (iv) The container is a lab pack as defined in subparagraph (q) of this paragraph and is disposed of in accordance with that subparagraph.

3. To demonstrate the absence or presence of free liquids in either a containerized or a bulk waste, the following test must be used: Method 9095B (Paint Filter Liquids Test) as described in "Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods," EPA Publication SW-846. (See 40 CFR 260.11; Rule 0400-12-01-.01(2)(b)1.)

4. The date for compliance with part 1 of this subparagraph is November 19, 1981. The date for compliance with part 3 of this subparagraph is March 22, 1982.

5. Sorbents used to treat free liquids to be disposed of in landfills must be nonbiodegradable. Nonbiodegradable sorbents are: materials listed or described in subpart (i) of this part; materials that pass one of the tests in subpart (ii) of this part; or materials that are determined by EPA to be nonbiodegradable through the Part 260 petition process.

(i) Nonbiodegradable Sorbents

(I) Inorganic minerals, other inorganic materials, and elemental carbon (e.g., aluminosilicates, clays, smectites, Fuller's earth, bentonite, calcium bentonite, montmorillonite, calcined montmorillonite, kaolinite, micas (illite), vermiculites, zeolites; calcium carbonate (organic free limestone); oxides/hydroxides, alumina, lime, silica (sand), diatomaceous earth; perlite (volcanic glass); expanded volcanic rock; volcanic ash; cement kiln dust; fly ash; rice hull ash; activated charcoal/activated carbon); or

(II) High molecular weight synthetic polymers (e.g., polyethylene, high density polyethylene (HDPE), polypropylene, polystyrene, polyurethane, polyacrylate, polynorborene, polyisobutylene, ground synthetic rubber, cross-linked allylstyrene and tertiary butyl copolymers). This does not include polymers derived from biological material or polymers specifically designed to be degradable; or

(III) Mixtures of these nonbiodegradable materials.

(ii) Tests for Nonbiodegradable Sorbents

(I) The sorbent material is determined to be nonbiodegradable under ASTM Method G21-70 (1984a)-Standard Practice for Determining Resistance of Synthetic Polymer Materials to Fungi; or

(II) The sorbent material is determined to be nonbiodegradable under ASTM Method G22-76 (1984b)-Standard Practice for Determining Resistance of Plastics to Bacteria; or

(III) The sorbent material is determined to be non-biodegradable under OECD test 301B: [CO_2 Evolution (Modified Sturm Test)].

6. The placement of any liquid which is not a hazardous waste in a landfill is prohibited unless the owner or operator of such landfill demonstrates to the Commissioner, or the Commissioner determines, that:

(i) The only reasonably available alternative to the placement in such landfill is placement in a landfill or unlined surface impoundment, whether or not permitted or operating under interim status, which contains, or may reasonably be anticipated to contain, hazardous waste; and

(ii) Placement in such owner or operator's landfill will not present a risk of contamination of any "underground source of drinking water" (as that term is defined in Rule 0400-12-01-.01(2)(a)).

(p) Special Requirements for Containers [40 CFR 265.315]

Unless they are very small, such as an ampule, containers must be either:

1. At least 90 percent full when placed in the landfill; or

2. Crushed, shredded, or similarly reduced in volume to the maximum practical extent before burial in the landfill.

(q) Disposal of Small Containers of Hazardous Waste in Overpacked Drums (Lab Packs) [40 CFR 265.316]

Small containers of hazardous waste in overpacked drums (lab packs) may be placed in a landfill if the following requirements are met:

1. Hazardous waste must be packaged in non-leaking inside containers. The inside containers must be of a design and constructed of a material that will not react dangerously with, be decomposed by, or be ignited by the waste held therein. Inside containers must be tightly and securely sealed. The inside containers must be of the size and type specified in the Department of Transportation (DOT) hazardous materials regulations (49 CFR parts 173, 178 and 179), if those regulations specify a particular inside container for the waste.

2. The inside containers must be overpacked in an open head DOT-specification metal shipping container (49 CFR parts 178 and 179) of no more than 416-liter (110 gallon) capacity and surrounded by, at a minimum, a sufficient quantity of sorbent material, determined to be nonbiodegradable in accordance with part (o)5 of this paragraph, to completely sorb all of the liquid contents of the inside containers. The metal outer container must be full after it has been packed with inside containers and sorbent material.

3. The sorbent material used must not be capable of reacting dangerously with, being decomposed by, or being ignited by the contents of the inside containers in accordance with part (2)(h)2 of this rule.

4. Incompatible wastes, as defined in Rule 0400-12-01-.01(2)(a), must not be placed in the same outside container.

5. Reactive waste, other than cyanide- or sulfide-bearing waste as defined in Rule 0400-12-01-.02(3)(d)1(v), must be treated or rendered non-reactive prior to packaging in accordance with parts 1 through 4 of this subparagraph. Cyanide- and sulfide-bearing reactive waste may be packaged in accordance with parts 1 through 4 of this subparagraph without first being treated or rendered non-reactive.

6. Such disposal is in compliance with the requirements of Rule 0400-12-01-.10. Persons who incinerate lab packs according to the requirements in Rule 0400-12-01-.10(3)(c)3(i) may use fiber drums in place of metal outer containers. Such fiber drums must meet the DOT specifications in 49 CFR 173.12 and be overpacked according to the requirements in part 2 of this subparagraph.

(15) Incinerators [40 CFR 265 Subpart O]

(a) Applicability [40 CFR 265.340]

1. The regulations of this paragraph apply to owners and operators of hazardous waste incinerators (as defined in Rule 0400-12-01-.01(2)(a)), except as paragraph (1) of this rule provides otherwise.

2. Integration of the MACT standards

(i) Except as provided by subparts (ii) and (iii) of this part, the standards of this rule no longer apply when an owner or operator demonstrates compliance with the maximum achievable control technology (MACT) requirements of 40 CFR 63 Subpart EEE by conducting a comprehensive performance test and submitting to the Commissioner a Notification of Compliance under 40 CFR 63.1207(j) and 40 CFR 263.1210(d) documenting compliance with the requirements of 40 CFR 63 Subpart EEE.

(ii) The following requirements continue to apply even where the owner or operator has demonstrated compliance with the MACT requirements of 40 CFR 63 Subpart EEE: subparagraph (l) of this paragraph (Closure) and the applicable requirements of paragraphs (1) through (8), (28), and (29) of this rule.

(iii) Subparagraph (f) of this paragraph generally prohibiting burning of hazardous waste during startup and shutdown remains in effect if you elect to comply with item (12)(a)2(i)(I) of Rule 0400-12-01-.07 to minimize emissions of toxic compounds from startup and shutdown.

3. Owners and operators of incinerators burning hazardous waste are exempt from all of the requirements of this paragraph, except subparagraph (l) of this paragraph (Closure), provided that the owner or operator has documented, in writing, that the waste would not reasonably be expected to contain any of the hazardous constituents listed in Appendix VIII of Rule 0400-12-01-.02(5), and such documentation is retained at the facility, if the waste to be burned is:

(i) Listed as a hazardous waste in Rule 0400-12-01-.02(4) solely because it is ignitable (Hazard Code I), corrosive (Hazard Code C), or both; or

(ii) Listed as a hazardous waste in Rule 0400-12-01-.02(4) solely because it is reactive (Hazard Code R) for characteristics other than those listed in Rule 0400-12-01-.02(3)(d)1(iv) and (v) and will not be burned when other hazardous wastes are present in the combustion zone; or

(iii) A hazardous waste solely because it possesses the characteristic of ignitability, corrosivity, or both, as determined by the tests for characteristics of hazardous wastes under Rule 0400-12-01-.02(3); or

(iv) A hazardous waste solely because it possesses the reactivity characteristics described by Rule 0400-12-01-.02(3)(d)1(i), (ii), (iii), (vi), (vii), and (viii), and will not be burned when other hazardous wastes are present in the combustion zone.

(b) Waste Analysis [40 CFR 265.341]

In addition to the waste analyses required by subparagraph (2)(d) of this rule, the owner or operator must sufficiently analyze any waste which he has not previously burned in his incinerator to enable him to establish steady state (normal) operating conditions (including waste and auxiliary fuel feed and air flow) and to determine the type of pollutants which might be emitted. At a minimum, the analysis must determine:

1. Heating value of the waste;

2. Halogen content and sulfur content in the waste; and

3. Concentrations in the waste of lead and mercury, unless the owner or operator has written, documented data that show that the element is not present.

(Comment: As required by subparagraph (5)(d) of this rule, the owner or operator must place the results from each waste analysis, or the documented information, in the operating record of the facility.)

(c) through (e) (RESERVED) [40 CFR 265.342-265.344]

(f) General Operating Requirements [40 CFR 265.345]

During start-up and shut-down of an incinerator, the owner or operator must not feed hazardous waste unless the incinerator is at steady state (normal) conditions of operation, including steady state operating temperature and air flow.

(g) (RESERVED) [40 CFR 265.346]

(h) Monitoring and Inspections [40 CFR 265.347]

The owner or operator must conduct, as a minimum, the following monitoring and inspections when incinerating hazardous waste:

1. Existing instruments which relate to combustion and emission control must be monitored at least every 15 minutes. Appropriate corrections to maintain steady state combustion conditions must be made immediately either automatically or by the operator. Instruments which relate to combustion and emission control would normally include those measuring waste feed, auxiliary fuel feed, air flow, incinerator temperature, scrubber flow, scrubber pH, and relevant level controls.

2. The complete incinerator and associated equipment (pumps, valves, conveyors, pipes, etc.) must be inspected at least daily for leaks, spills, and fugitive emissions, and all emergency shutdown controls and system alarms must be checked to assure proper operation.

(i) through (k) (RESERVED) [40 CFR 265.348-265.350]

(l) Closure [40 CFR 265.351]

At closure, the owner or operator must remove all hazardous waste and hazardous waste residues (including but not limited to ash, scrubber waters, and scrubber sludges) from the incinerator.

(Comment: At closure, as throughout the operating period, unless the owner or operator can demonstrate, in accordance with Rule 0400-12-01-.02(1)(c)4, that the residue removed from his incinerator is not a hazardous waste, the owner or operator becomes a generator of hazardous waste and must manage it in accordance with all applicable requirements of Rule 0400-12-01-.03 through .07 and .09.)

(m) (RESERVED) [40 CFR 265.352]

(Note: Implementation of this provision remains with EPA.)

(16) Thermal Treatment [40 CFR 265 Subpart P]

(a) Other Thermal Treatment 40 CFR 265.370]

The regulations in this subpart apply to owners or operators of facilities that thermally treat hazardous waste in devices other than enclosed devices using controlled flame combustion, except as paragraph (1) of this rule provides otherwise. Thermal treatment in enclosed devices using controlled flame combustion is subject to the requirements of paragraph (15) of this rule if the unit is an incinerator, and Rule 0400-12-01-.09(8), if the unit is a boiler or an industrial furnace as defined in Rule 0400-12-01-.01(2)(a).

(b) (RESERVED) [40 CFR 265.371]

(c) (RESERVED) [40 CFR 265.372]

(d) General Operating Requirements [40 CFR 265.373]

Before adding hazardous waste, the owner or operator must bring his thermal treatment process to steady state (normal) conditions of operation -- including steady state operating temperature -- using auxiliary fuel or other means, unless the process is a non-continuous (batch) thermal treatment process which requires a complete thermal cycle to treat a discrete quantity of hazardous waste.

(e) (RESERVED) [40 CFR 265.374]

(f) Waste Analysis [40 CFR 265.375]

In addition to the waste analyses required by subparagraph (2)(d) of this rule, the owner or operator must sufficiently analyze any waste which he has not previously treated in his thermal process to enable him to establish steady state (normal) or other appropriate (for a non-continuous process) operating conditions (including waste and auxiliary fuel feed) and to determine the type of pollutants which might be emitted. At a minimum, the analysis must determine:

1. Heating value of the waste;

2. Halogen content and sulfur content in the waste; and

3. Concentrations in the waste of lead and mercury, unless the owner or operator has written, documented data that show that the element is not present.

(Comment: As required by subparagraph (5)(d) of this rule, the owner or operator must place the results from each waste analysis, or the documented information, in the operating record of the facility.)

(g) (RESERVED) [40 CFR 265.376]

(h) Monitoring and Inspections [40 CFR 265.377]

1. The owner or operator must conduct, as a minimum, the following monitoring and inspections when thermally treating hazardous waste:

(i) Existing instruments which relate to temperature and emission control (if an emission control device is present) must be monitored at least every 15 minutes. Appropriate corrections to maintain steady state or other appropriate thermal treatment conditions must be made immediately either automatically or by the operator. Instruments which relate to temperature and emission control would normally include those measuring waste feed, auxiliary fuel feed, treatment process temperature, and relevant process flow and level controls.

(ii) The stack plume (emissions), where present, must be observed visually at least hourly for normal appearance (color and opacity). The operator must immediately make any indicated operating corrections necessary to return any visible emissions to their normal appearance.

(iii) The complete thermal treatment process and associated equipment (pumps, valves, conveyors, pipes, etc.) must be inspected at least daily for leaks, spills, and fugitive emissions, and all emergency shutdown controls and system alarms must be checked to assure proper operation.

(i) through (k) (RESERVED) [40 CFR 265.378-265.380]

(l) Closure [40 CFR 265.381]

At closure, the owner or operator must remove all hazardous waste and hazardous waste residues (including, but not limited to, ash) from the thermal treatment process or equipment.

(Comment: At closure, as throughout the operating period, unless the owner or operator can demonstrate, in accordance with Rule 0400-12-01-.02(1)(c)3 or 4, that any solid waste removed from his thermal treatment process or equipment is not a hazardous waste, the owner or operator becomes a generator of hazardous waste and must manage it in accordance with all applicable requirements of this rule and Rules 0400-12-01-.03 and .04.)

(m) Open Burning; Waste Explosives [40 CFR 265.382]

Open burning of hazardous waste is prohibited except for the open burning and detonation of waste explosives. Waste explosives include waste which has the potential to detonate and bulk military propellants which cannot safely be disposed of through other modes of treatment. Detonation is an explosion in which chemical transformation passes through the material faster than the speed of sound (0.33 kilometers/second at sea level). Owners or operators choosing to open burn or detonate waste explosives must do so in accordance with the following table and in a manner that does not threaten human health or the environment.

Pounds of waste explosives or propellants	Minimum distance from open burning or detonation to the property of others
0 to 100	204 meters (670 feet).
101 to 1,000	380 meters (1,250 feet).
1,001 to 10,000	530 meters (1,730 feet).
10,001 to 30,000	690 meters (2,260 feet).

(n) (Reserved) [40 CFR 265.383]

(Note: Implementation of this provision remains with EPA.)

(17) Chemical, Physical, and Biological Treatment [40 CFR 265 Subpart Q]

(a) Applicability [40 CFR 265.400]

The regulations in this paragraph apply to owners and operators of facilities which treat hazardous wastes by chemical, physical, or biological methods in other than tanks, surface impoundments, and land treatment facilities, except as paragraph (1) of this rule provides otherwise. Chemical, physical, and biological treatment of hazardous waste in tanks, surface impoundments, and land treatment facilities must be conducted in accordance with paragraphs (10), (11) and (13) of this rule, respectively.

(b) General Operating Requirements [40 CFR 265.401]

1. Chemical, physical, or biological treatment of hazardous waste must comply with part (2)(h)2 of this rule.

2. Hazardous wastes or treatment reagents must not be placed in the treatment process or equipment if they could cause the treatment process or equipment to rupture, leak, corrode, or otherwise fail before the end of its intended life.

3. Where hazardous waste is continuously fed into a treatment process or equipment, the process or equipment must be equipped with a means to stop this inflow (e.g., a waste feed cut-off system or by-pass system to a standby containment device).

(Comment: These systems are intended to be used in the event of a malfunction in the treatment process or equipment.)

(c) Waste Analysis and Trial Tests [40 CFR 265.402]

In addition to the waste analysis required by subparagraph (2)(d) of this rule, whenever a hazardous waste which is substantially different from waste previously treated in a treatment process or equipment at the facility is to be treated in that process or equipment or whenever a substantially different process from any previously used at the facility is to be used chemically to treat hazardous waste, before treating the different waste or using the different process or equipment, the owner or operator must:

1. Conduct waste analyses and trial treatment tests (e.g., bench scale or pilot plant scale tests); or

2. Obtain written, documented information on similar treatment of similar waste under similar operating conditions to show that this proposed treatment will meet all applicable requirements of parts (b)1 and 2 of this paragraph.

(Comment: As required by subparagraph (2)(d) of this rule, the waste analysis plan must include analyses needed to comply with subparagraphs (f) and (g) of this paragraph. As required by subparagraph (5)(d) of this rule, the owner or operator must place the results from each waste analysis and trial test, or the documented information, in the operating record of the facility.)

(d) Inspections [40 CFR 265.403]

1. The owner or operator of a treatment facility must inspect, where present:

(i) Discharge control and safety equipment (e.g., waste feed cut-off systems, by-pass systems, drainage systems, and pressure relief systems) at least once each operating day, to ensure that it is in good working order;

(ii) Data gathered from monitoring equipment (e.g., pressure and temperature gauges), at least once each operating day, to ensure that the treatment process or equipment is being operated according to its design;

(iii) The construction materials of the treatment process or equipment, at least weekly, to detect corrosion or leaking of fixtures or seams; and

(iv) The construction materials of, and the area immediately surrounding, discharge confinement structures (e.g., dikes), at least weekly, to detect erosion or obvious signs of leakage (e.g., wet spots or dead vegetation).

(Comment: As required by subparagraph (2)(f)3 of this rule, the owner or operator must remedy any deterioration or malfunction he finds.)

(e) Closure [40 CFR 265.404]

At closure, all hazardous waste and hazardous waste residues must be removed from treatment processes or equipment, discharge control equipment, and discharge confinement structures.

(Comment: At closure, as throughout the operating period, unless the owner or operator can demonstrate, in accordance with Rule 0400-12-01-.02(1)(c)3 or 4, that any solid waste removed from his treatment process or equipment is not a hazardous waste, the owner or operator becomes a generator of hazardous waste and must manage it in accordance with all applicable requirements of this rule and Rules 0400-12-01-.03 and .04.)

(f) Special Requirements for Ignitable or Reactive Waste [40 CFR 265.405]

1. Ignitable or reactive waste must not be placed in a treatment process or equipment unless:

(i) The waste is treated, rendered, or mixed before or immediately after placement in the treatment process or equipment so that

(I) the resulting waste, mixture, or dissolution of material no longer meets the definition of ignitable or reactive waste under Rule 0400-12-01-.02(3)(b) or (d), and

(II) part (2)(h)2 of this rule is complied with; or

(ii) The waste is treated in such a way that it is protected from any material or conditions which may cause the waste to ignite or react.

(g) Special Requirements for Incompatible Wastes [40 CFR 265.406]

1. Incompatible wastes, or incompatible wastes and materials, (see Appendix V in paragraph (53) of this rule for examples) must not be placed in the same treatment process or equipment, unless part (2)(h)2 of this rule is complied with.

2. Hazardous waste must not be placed in unwashed treatment equipment which previously held an incompatible waste or material, unless part (2)(h)2 of this rule is complied with.

(18) Underground Injection [40 CFR 265 Subpart R]

(a) Applicability [40 CFR 265.430]

Except as subparagraph (1)(b) of this rule provides otherwise:

1. The owner or operator of a facility which disposes of hazardous waste by underground injection is excluded from the requirements of paragraphs (7) and (8) of this rule.

(19) through (22) (RESERVED) [40 CFR 265 Subpart S through V]

(23) Drip Pads [40 CFR 265 Subpart W]

(a) Applicability [40 CFR 265.440]

1. The requirements of this paragraph apply to owners and operators of facilities that use new or existing drip pads to convey treated wood drippage, precipitation, and/or surface water run-off to an associated collection system. Existing drip pads are those constructed before February 14, 1992 and those for which the owner or operator has a design and has entered into binding financial or other agreements for construction prior to February 14, 1992. All other drip pads are new drip pads. The requirement at subpart (d)2(iii) of this paragraph to install a leak collection system applies only to those drip pads that are constructed after December 24, 1992 except for those constructed after December 24, 1992 for which the owner or operator has a design and has entered into binding financial or other agreements for construction prior to December 24, 1992.

(Note: Implementation of these provisions between December 6, 1990 and February 14, 1992 remains with EPA.)

2. The owner or operator of any drip pad that is inside or under a structure that provides protection from precipitation so that neither run-off nor run-on is generated is not subject to regulation under part (d)5 or 6 of this paragraph as appropriate.

3. The requirements of this subpart are not applicable to the management of infrequent and incidental drippage in storage yards provided that:

(i) The owner or operator maintains and complies with a written contingency plan that describes how the owner or operator will respond immediately to the discharge of such infrequent and incidental drippage. At a minimum, the contingency plan must describe how the facility will do the following:

(I) Clean up the drippage;

(II) Document the cleanup of the drippage;

(III) Retain documents regarding cleanup for three years; and

(IV) Manage the contaminated media in a manner consistent with Federal regulations.

(b) Assessment of Existing Drip Pad Integrity [40 CFR 265.441]

1. For each existing drip pad as defined in subparagraph (a) of this paragraph, the owner or operator must evaluate the drip pad and determine that it meets all of the requirements of this paragraph, except the requirements for liners and leak detection systems of part (d)2 of this paragraph. No later than the effective date of this rule, the owner or operator must obtain and keep on file at the facility a written assessment of the drip pad, reviewed and certified by a qualified Professional Engineer that attests to the results of the evaluation. The assessment must be reviewed, updated and re-certified annually until all upgrades, repairs, or modifications necessary to achieve compliance with all of the standards of subparagraph (d) of this paragraph are complete. The evaluation must document the extent to which the drip pad meets each of the design and operating standards of subparagraph (d) of this paragraph, except the standards for liners and leak detection systems, specified in part (d)2 of this paragraph.

2. The owner or operator must develop a written plan for upgrading, repairing, and modifying the drip pad to meet the requirements of part (d)2 of this paragraph, and submit the plan to the Commissioner no later than 2 years before the date that all repairs, upgrades, and modifications are complete. This written plan must describe all changes to be made to the drip pad in sufficient detail to document compliance with all the requirements of subparagraph (d) of this paragraph. The plan must be reviewed and certified by a qualified Professional Engineer.

3. Upon completion of all repairs, and modifications, the owner or operator must submit to the Commissioner, the as-built drawings for the drip pad together with a certification by a qualified Professional Engineer attesting that the drip pad conforms to the drawings.

4. If the drip pad is found to be leaking or unfit for use, the owner or operator must comply with the provisions of part (d)13 of this paragraph or close the drip pad in accordance with subparagraph (f) of this paragraph.

(c) Design and Installation of New Drip Pads [40 CFR 265.442]

Owners and operators of new drip pads must ensure that the pads are designed, installed, and operated in accordance with one of the following:

1. All of the applicable requirements of subparagraphs (d) (except subpart (d)1(iv)), (e), and (f) of this paragraph, or

2. All of the applicable requirements of subparagraphs (d) (except part (d)2), (e) and (f) of this paragraph.

(d) Design and Operating Requirements [40 CFR 265.443]

1. Drip pads must:

(i) Be constructed of non-earthen materials, excluding wood and non-structurally supported asphalt;

(ii) Be sloped to free-drain treated wood drippage, rain and other waters, or solutions of drippage and water or other wastes to the associated collection system;

(iii) Have a curb or berm around the perimeter;

(iv) (I) Have a hydraulic conductivity of less than or equal to 1×10^{-7} centimeters per second, e.g., existing concrete drip pads must be sealed, coated, or covered with a surface material with a hydraulic conductivity of less than or equal to 1×10^{-7} centimeters per second such that the entire surface where drippage occurs or may run across is capable of containing such

drippage and mixtures of drippage and precipitation, materials, or other wastes while being routed to an associated collection system. This surface material must be maintained free of cracks and gaps that could adversely affect its hydraulic conductivity, and the material must be chemically compatible with the preservatives that contact the drip pad. The requirements of this provision apply only to existing drip pads and those drip pads for which the owner or operator elects to comply with part (c)2 of this paragraph instead of part (c)1 of this paragraph.

(II) The owner or operator must obtain and keep on file at the facility a written assessment of the drip pad, reviewed and certified by a qualified Professional Engineer that attests to the results of the evaluation. The assessment must be reviewed, updated and recertified annually. The evaluation must document the extent to which the drip pad meets the design and operating standards of this subparagraph, except for part 2.

(v) Be of sufficient structural strength and thickness to prevent failure due to physical contact, climatic conditions, the stress of installation, and the stress of daily operations, e.g., variable and moving loads such as vehicle traffic, movement of wood, etc.

(Note: The Commissioner will generally consider applicable standards established by professional organizations generally recognized by industry such as the American Concrete Institute (ACI) and the American Society of Testing Materials (ASTM) in judging the structural integrity requirement of this subpart.)

2. If an owner/operator elects to comply with part (c)1 of this paragraph instead of part (c)2 of this paragraph, the drip pad must have:

(i) A synthetic liner installed below the drip pad that is designed, constructed, and installed to prevent leakage from the drip pad into the adjacent subsurface soil or groundwater or surface water at any time during the active life (including the closure period) of the drip pad. The liner must be constructed of materials that will prevent waste from being absorbed into the liner and prevent releases into the adjacent subsurface soil or ground water or surface water during the active life of the facility. The liner must be:

(I) Constructed of materials that have appropriate chemical properties and sufficient strength and thickness to prevent failure due to pressure gradients (including static head and external hydrogeologic forces), physical contact with the waste or drip pad leakage to which they are exposed, climatic conditions, the stress of installation, and the stress of daily operation (including stresses from vehicular traffic on the drip pad);

(II) Placed upon a foundation or base capable of providing support to the liner and resistance to pressure gradients above and below the liner to prevent failure of the liner due to settlement, compression or uplift; and

(III) Installed to cover all surrounding earth that could come in contact with the waste or leakage; and

(ii) A leakage detection system immediately above the liner that is designed, constructed, maintained and operated to detect leakage from the drip pad. The leakage detection system must be:

(I) Constructed of materials that are:

I. Chemically resistant to the waste managed in the drip pad and the leakage that might be generated; and

II. Of sufficient strength and thickness to prevent collapse under the pressures exerted by overlaying materials and by any equipment used at the drip pad; and

(II) Designed and operated to function without clogging through the scheduled closure of the drip pad.

(III) Designed so that it will detect the failure of the drip pad or the presence of a release of hazardous waste or accumulated liquid at the earliest practicable time.

(iii) A leakage collection system immediately above the liner that is designed, constructed, maintained and operated to collect leakage from the drip pad such that it can be removed from below the drip pad. The date, time, and quantity of any leakage collected in this system and removed must be documented in the operating log.

3. Drip pads must be maintained such that they remain free of cracks, gaps, corrosion, or other deterioration that could cause hazardous waste to be released from the drip pad.

(Note: See part 13 of this subparagraph for remedial action required if deterioration or leakage is detected.)

4. The drip pad and associated collection system must be designed and operated to convey, drain, and collect liquid resulting from drippage or precipitation in order to prevent run-off.

5. Unless protected by a structure, as described in part (a)2 of this paragraph, the owner or operator must design, construct, operate and maintain a run-on control system capable of preventing flow onto the drip pad during peak discharge from at least a 24-hour, 25-year storm unless the system has sufficient excess capacity to contain any run-on that might enter the system, or the drip pad is protected by a structure or cover, as described in part (a)2 of this paragraph.

6. Unless protected by a structure or cover, as described in part (a)2 of this paragraph, the owner or operator must design, construct, operate and maintain a run-off management system to collect and control at least the water volume resulting from a 24-hour, 25-year storm.

7. The drip pad must be evaluated to determine that it meets the requirements of parts 1 through 6 of this subparagraph and the owner or operator must obtain a statement from a qualified Professional Engineer certifying that the drip pad design meets the requirements of this subparagraph.

8. Drippage and accumulated precipitation must be removed from the associated collection system as necessary to prevent overflow onto the drip pad.

9. The drip pad surface must be cleaned thoroughly in a manner and frequency such that accumulated residues of hazardous waste or other materials are removed, with residues being properly managed as hazardous waste, so as to allow weekly inspections of the entire drip pad surface without interference or hindrance from accumulated residues of hazardous waste or other materials on the drip pad. The owner or operator must document the date and time of each cleaning and the cleaning procedure used in the facility's operating log.

10. Drip pads must be operated and maintained in a manner to minimize tracking of hazardous waste or hazardous waste constituents off the drip pad as a result of activities by personnel or equipment.

11. After being removed from the treatment vessel, treated wood from pressure and non-pressure processes must be held on the drip pad until drippage has ceased. The owner or operator must maintain records sufficient to document that all treated wood is held on the pad following treatment in accordance with this requirement.

12. Collection and holding units associated with run-on and run-off control systems must be emptied or otherwise managed as soon as possible after storms to maintain design capacity of the system.

13. Throughout the active life of the drip pad, if the owner or operator detects a condition that may have caused or has caused a release of hazardous waste, the condition must be repaired within a reasonably prompt period of time following discovery, in accordance with the following procedures:

    (i) Upon detection of a condition that may have caused or has caused a release of hazardous waste (e.g., upon detection of leakage by the leak detection system), the owner or operator must:

        (I) Enter a record of the discovery in the facility operating log;

        (II) Immediately remove the portion of the drip pad affected by the condition from service;

        (III) Determine what steps must be taken to repair the drip pad, remove any leakage from below the drip pad, and establish a schedule for accomplishing the clean up and repairs;

        (IV) Within 24 hours after discovery of the condition, notify the Commissioner of the condition and, within 10 working days, provide a written notice to the Commissioner with a description of the steps that will be taken to repair the drip pad, and clean up any leakage, and the schedule for accomplishing this work.

    (ii) The Commissioner will review the information submitted, make a determination regarding whether the pad must be removed from service completely or partially until repairs and clean up are complete, and notify the owner or operator of the determination and the underlying rationale in writing.

    (iii) Upon completing all repairs and clean up, the owner or operator must notify the Commissioner in writing and provide a certification, signed by an independent qualified, registered professional engineer, that the repairs and clean up have been completed according to the written plan submitted in accordance with item (i)(IV) of this part.

14. The owner or operator must maintain, as part of the facility operating log, documentation of past operating and waste handling practices. This must include identification of preservative formulations used in the past, a description of drippage management practices, and a description of treated wood storage and handling practices.

(e) Inspections [40 CFR 265.444]

1. During construction or installation, liners and cover systems (e.g., membranes, sheets, or coatings) must be inspected for uniformity, damage, and imperfections (e.g., holes, cracks, thin spots, or foreign materials). Immediately after construction or installation, liners must be inspected and certified as meeting the requirements of subparagraph (d) of this paragraph by a qualified Professional Engineer. This certification must be maintained at the facility as part of the facility operating record. After installation, liners and covers must be inspected to ensure tight seams and joints and the absence of tears,

punctures, or blisters.

2. While a drip pad is in operation, it must be inspected weekly and after storms to detect evidence of any of the following:

(i) Deterioration, malfunctions or improper operation of run-on and run-off control systems;

(ii) The presence of leakage in and proper functioning of leakage detection system;

(iii) Deterioration or cracking of the drip pad surface.

(Note: See part (d)13 of this paragraph for remedial action required if deterioration or leakage is detected.)

(f) Closure [40 CFR 265.445]

1. At closure, the owner or operator must remove or decontaminate all waste residues, contaminated containment system components (pad, liners, etc.), contaminated subsoils, and structures and equipment contaminated with waste and leakage, and manage them as hazardous waste.

2. If, after removing or decontaminating all residues and making all reasonable efforts to effect removal or decontamination of contaminated components, subsoils, structures, and equipment as required in part 1 of this subparagraph, the owner or operator finds that not all contaminated subsoils can be practically removed or decontaminated, he must close the facility and perform post-closure care in accordance with closure and post-closure care requirements that apply to landfills (subparagraph (14)(k) of this rule). For permitted units, the requirement to have a permit continues throughout the post-closure period.

3. (i) The owner or operator of an existing drip pad, as defined in subparagraph (a) of this paragraph, that does not comply with the liner requirements of subpart (d)2(i) of this paragraph must:

(I) Include in the closure plan for the drip pad under subparagraph (7)(c) of this rule both a plan for complying with part 1 of this subparagraph and a contingent plan for complying with part 2 of this subparagraph in case not all contaminated subsoils can be practicably removed at closure; and

(II) Prepare a contingent post-closure plan under subparagraph (7)(i) of this rule for complying with part 2 of this subparagraph in case not all contaminated subsoils can be practicably removed at closure.

(ii) The cost estimates calculated under subparagraphs (7)(c) and (8)(e) of this rule for closure and post-closure care of a drip pad subject to this part must include the cost of complying with the contingent closure plan and the contingent post-closure plan, but are not required to include the cost of expected closure under part 1 of this subparagraph.

(24) through (26) (RESERVED) [40 CFR 265 Subparts X through Z]

(27) Air Emission Standards for Process Vents [40 CFR 265 Subpart AA]

(a) Applicability [40 CFR 265. 1030]

1. The regulations in this paragraph apply to owners and operators of facilities that treat, store, or dispose of hazardous wastes (except as provided in subparagraph (1)(b) of this rule).

2. Except for parts (e)4 and 5 of this paragraph, this paragraph applies to process vents associated with distillation, fractionation, thin-film evaporation, solvent extraction, or air or steam stripping operations that manage hazardous wastes with organic concentrations of at least 10 ppmw, if these operations are conducted in one of the following:

   (i) A unit that is subject to the permitting requirements of Rule 0400-12-01-.07, or

   (ii) A unit (including a hazardous waste recycling unit) that is not exempt from permitting under the provisions of Rule 0400-12-01-.03(4)(e)2 (i.e., a hazardous waste recycling unit that is not a 90-day tank or container) and that is located at a hazardous waste management facility otherwise subject to the permitting requirements of Rule 0400-12-01-.07, or

   (iii) A unit that is exempt from permitting under the provisions of Rule 0400-12-01-.03(4)(e)2 (i.e., a "90-day" tank or container) and is not a recycling unit under the requirements of Rule 0400-12-01-.02(1)(f).

3. (Reserved) [40 CFR 265.1030(c)]

4. The requirements of this paragraph do not apply to the process vents at a facility where the facility owner or operator certifies that all of the process vents that would otherwise be subject to this paragraph are equipped with and operating air emission controls in accordance with the process vent requirements of an applicable Clean Air Act regulation codified under 40 CFR Part 60, Part 61, or Part 63. The documentation of compliance under regulations at 40 CFR Part 60, Part 61, or Part 63 shall be kept with, or made readily available with, the facility operating record.

(Note: The requirements of subparagraphs (c) through (f) of this paragraph apply to process vents on hazardous waste recycling units previously exempt under Rule 0400-12-01-.02(1)(f)3(i). Other exemptions under Rules 0400-12-01-.02(1)(d) and part (1)(b)2 of this rule are not affected by these requirements.)

(b) Definitions [40 CFR 265.1031]

As used in this paragraph, all terms shall have the meaning given them in Rule 0400-12-01-.06(30)(b), Tennessee Code Annotated §§68-212-101 et seq., Rules 0400-12-01-.01 through .06, and Rule 0400-12-01-.09.

(c) Standards: Process Vents [40 CFR 265.1032]

1. The owner or operator of a facility with process vents associated with distillation, fractionation, thin-film evaporation, solvent extraction or air or steam stripping operations managing hazardous wastes with organic concentrations at least 10 ppmw shall either:

   (i) Reduce total organic emissions from all affected process vents at the facility below 1.4 kg/h (3 lb/h) and 2.8 Mg/yr (3.1 tons/yr), or

   (ii) Reduce, by use of a control device, total organic emissions from all affected process vents at the facility by 95 weight percent.

2. If the owner or operator installs a closed-vent system and control device to comply with the provisions of part 1 of this subparagraph, the closed-vent system and control device must meet the requirements of subparagraph (d) of this paragraph.

3. Determinations of vent emissions and emission reductions or total organic compound concentrations achieved by add-on control devices may be based on engineering calculations or performance tests. If performance tests are used to determine vent emissions, emission reductions, or total organic compound concentrations achieved by add-on control devices, the performance tests must conform with the requirements of part

(e)3 of this paragraph.

4. When an owner or operator and the Commissioner do not agree on determinations of vent emissions and/or emission reductions or total organic compound concentrations achieved by add-on control devices based on engineering calculations, the test methods in part (e)3 of this paragraph shall be used to resolve the disagreement.

(d) Standards: Closed-Vent Systems and Control Devices [40 CFR 265.1033]

1. (i) Owners or operators of closed-vent systems and control devices used to comply with provisions of this rule shall comply with the provisions of this subparagraph.

(ii) (I) The owner or operator of an existing facility who cannot install a closed-vent system and control device to comply with the requirements of this paragraph on the effective date that the facility becomes subject to the provisions of this paragraph must prepare an implementation schedule that includes dates by which the closed-vent system and control device will be installed and in operation. The controls must be installed as soon as possible, but the implementation schedule may allow up to 30 months after the effective date that the facility becomes subject to this paragraph for installation and startup.

(II) Any unit that begins operation after December 21, 1990, and is subject to the requirements of this paragraph when operation begins, must comply with the rules immediately (i.e., must have control devices installed and operating on startup of the affected unit); the 30-month implementation schedule does not apply.

(III) The owner or operator of any facility in existence on the effective date of a statutory or regulatory amendment that renders the facility subject to this paragraph shall comply with all requirements of this paragraph as soon as practicable but no later than 30 months after the amendment's effective date. When control equipment required by this paragraph can not be installed and begin operation by the effective date of the amendment, the facility owner or operator shall prepare an implementation schedule that includes the following information: Specific calendar dates for award of contracts or issuance of purchase orders for the control equipment, initiation of on-site installation of the control equipment, completion of the control equipment installation, and performance of any testing to demonstrate that the installed equipment meets the applicable standards of this paragraph. The owner or operator shall enter the implementation schedule in the operating record or in a permanent, readily available file located at the facility.

(IV) Owners and operators of facilities and units that become newly subject to the requirements of this paragraph after December 8, 1997, due to an action other than those described in item (III) of this subpart must comply with all applicable requirements immediately (i.e., must have control devices installed and operating on the date the facility or unit becomes subject to this paragraph; the 30-month implementation schedule does not apply).

2. A control device involving vapor recovery (e.g., a condenser or adsorber) shall be designed and operated to recover the organic vapors vented to it with an efficiency of 95 weight percent or greater unless the total organic emission limits of subpart (c)1(i) of this paragraph for all affected process vents can be attained at an efficiency less than 95 weight percent.

3. An enclosed combustion device (e.g., a vapor incinerator, boiler, or process heater) shall

be designed and operated to reduce the organic emissions vented to it by 95 weight percent or greater; to achieve a total organic compound concentration of 20 ppmv, expressed as the sum of the actual compounds, not carbon equivalents, on a dry basis corrected to 3 percent oxygen; or to provide a minimum residence time of 0.50 seconds at a minimum temperature of 760 °C. If a boiler or process heater is used as the control device, then the vent stream shall be introduced into the flame combustion zone of the boiler or process heater.

4. (i) A flare shall be designed for and operated with no visible emissions as determined by the methods specified in subpart 5(i) of this subparagraph, except for periods not to exceed a total of 5 minutes during any 2 consecutive hours.

(ii) A flare shall be operated with a flame present at all times, as determined by the methods specified in item 6(ii)(III) of this subparagraph.

(iii) A flare shall be used only if the net heating value of the gas being combusted is 11.2 MJ/scm (300 Btu/scf) or greater, if the flare is steam-assisted or air-assisted; or if the net heating value of the gas being combusted is 7.45 MJ/scm (200 Btu/scf) or greater if the flare is nonassisted. The net heating value of the gas being combusted shall be determined by the methods specified in subpart 5(ii) of this subparagraph.

(iv) (I) A steam-assisted or nonassisted flare shall be designed for and operated with an exit velocity, as determined by the methods specified in subpart 5(iii) of this subparagraph, of less than 18.3 m/s (60 ft/s), except as provided in items (II) and (III) of this subpart.

(II) A steam-assisted or nonassisted flare designed for and operated with an exit velocity, as determined by the methods specified in subpart 5(iii) of this subparagraph, equal to or greater than 18.3 m/s (60 ft/s) but less than 122 m/s (400 ft/s) is allowed if the net heating value of the gas being combusted is greater than 37.3 MJ/scm (1,000 Btu/scf).

(III) A steam-assisted or nonassisted flare designed for and operated with an exit velocity, as determined by the methods specified in subpart 5(iii) of this subparagraph, less than the velocity, V_{max}, as determined by the method specified in subpart 5(iv) of this subparagraph, and less than 122 m/s (400 ft/s) is allowed.

(v) An air-assisted flare shall be designed and operated with an exit velocity less than the velocity, V_{max}, as determined by the method specified in subpart 5(v) of this subparagraph.

(vi) A flare used to comply with this subparagraph shall be steam-assisted, air-assisted, or nonassisted.

5. (i) Reference Method 22 in 40 CFR part 60 shall be used to determine the compliance of a flare with the visible emission provisions of this paragraph. The observation period is 2 hours and shall be used according to Method 22.

(ii) The net heating value of the gas being combusted in a flare shall be calculated using the following equation:

$$H_t = K \left[\sum_{i=1}^{n} C_i H_i \right]$$

where:

H_t = Net heating value of the sample, MJ/scm; where the net enthalpy per mole of offgas is based on combustion at 25 °C and 760 mm Hg, but the standard temperature for determining the volume corresponding to 1 mol is 20 °C;

K = Constant, 1.74×10^{-7} (1/ppm) (g mol/scm) (MJ/kcal) where standard temperature for (g mol/scm) is 20 °C;

C_i = Concentration of sample component i in ppm on a wet basis, as measured for organics by Reference Method 18 in 40 CFR part 60 and measured for hydrogen and carbon monoxide by ASTM D 1946-82 (listed in Rule 0400-12-01-.01(2)(b)); and

H_i = Net heat of combustion of sample component i, kcal/g mol at 25 °C and 760 mm Hg. The heats of combustion may be determined using ASTM D 2382-83 (listed in Rule 0400-12-01-.01(2)(b)) if published values are not available or cannot be calculated.

(iii) The actual exit velocity of a flare shall be determined by dividing the volumetric flow rate (in units of standard temperature and pressure), as determined by Reference Methods 2, 2A, 2C, or 2D in 40 CFR part 60 as appropriate, by the unobstructed (free) cross-sectional area of the flare tip.

(iv) The maximum allowed velocity in m/s, V_{max}, for a flare complying with item 4(iv)(III) of this subparagraph shall be determined by the following equation:

$$\text{Log}_{10}(V_{max}) = (H_T + 28.8) \div 31.7$$

where:

H_T = The net heating value as determined in subpart 5(ii) of this subparagraph,

28.8 = Constant,

31.7 = Constant.

(v) The maximum allowed velocity in m/s, $V_{max\ for}$ an air-assisted flare shall be determined by the following equation:

V_{max} = $V_{max} = 8.706 + 0.7084\ (H_T)$

where:

8.706 = Constant,

0.7084 = Constant,

H_T = The net heating value as determined in subpart 5(ii) of this subparagraph.

6. The owner or operator shall monitor and inspect each control device required to comply with this subparagraph to ensure proper operation and maintenance of the control device by implementing the following requirements:

(i) Install, calibrate, maintain, and operate according to the manufacturer's specifications a flow indicator that provides a record of vent stream flow from each affected process vent to the control device at least once every hour. The flow indicator sensor shall be installed in the vent stream at the nearest feasible point to the control device inlet, but before being combined with other vent streams.

(ii) Install, calibrate, maintain, and operate according to the manufacturer's specifications a device to continuously monitor control device operation as specified below:

(I) For a thermal vapor incinerator, a temperature monitoring device equipped with a continuous recorder. The device shall have an accuracy of ±1 percent of the temperature being monitored in °C or ±0.5 °C, whichever is greater. The temperature sensor shall be installed at a location in the combustion chamber downstream of the combustion zone.

(II) For a catalytic vapor incinerator, a temperature monitoring device equipped with a continuous recorder. The device shall be capable of monitoring temperature at two locations and have an accuracy of ±1 percent of the temperature being monitored in °C or ±0.5 °C, whichever is greater. One temperature sensor shall be installed in the vent stream at the nearest feasible point to the catalyst bed inlet and a second temperature sensor shall be installed in the vent stream at the nearest feasible point to the catalyst bed outlet.

(III) For a flare, a heat sensing monitoring device equipped with a continuous recorder that indicates the continuous ignition of the pilot flame.

(IV) For a boiler or process heater having a design heat input capacity less than 44 MW, a temperature monitoring device equipped with a continuous recorder. The device shall have an accuracy of ±1 percent of the temperature being monitored in °C or ±0.5 °C, whichever is greater. The temperature sensor shall be installed at a location in the furnace downstream of the combustion zone.

(V) For a boiler or process heater having a design heat input capacity greater than or equal to 44 MW, a monitoring device equipped with a continuous recorder to measure a parameter(s) that indicates good combustion operating practices are being used.

(VI) For a condenser, either:

I. A monitoring device equipped with a continuous recorder to measure the concentration level of the organic compounds in the exhaust vent stream from the condenser; or

II. A temperature monitoring device equipped with a continuous recorder. The device shall be capable of monitoring temperature with an accuracy of ±1 percent of the temperature being monitored in degrees Celsius (°C) or ±0.5 °C, whichever is greater. The temperature sensor shall be installed at a location in the exhaust vent stream from the condenser exit (i.e., product side).

(VII) For a carbon adsorption system such as a fixed-bed carbon adsorber that regenerates the carbon bed directly in the control device, either:

I. A monitoring device equipped with a continuous recorder to measure the concentration level of the organic compounds in the exhaust vent stream from the carbon bed, or

II. A monitoring device equipped with a continuous recorder to measure a parameter that indicates the carbon bed is regenerated on a regular, predetermined time cycle.

(iii) Inspect the readings from each monitoring device required by subparts (i) and (ii) of this part at least once each operating day to check control device operation and, if necessary, immediately implement the corrective measures necessary to ensure the control device operates in compliance with the requirements of this subparagraph.

7. An owner or operator using a carbon adsorption system such as a fixed-bed carbon adsorber that regenerates the carbon bed directly onsite in the control device, shall replace the existing carbon in the control device with fresh carbon at a regular, predetermined time interval that is no longer than the carbon service life established as a requirement of subitem (f)2(iv)(III)VI of this paragraph.

8. An owner or operator using a carbon adsorption system such as a carbon canister that does not regenerate the carbon bed directly onsite in the control device shall replace the existing carbon in the control device with fresh carbon on a regular basis by using one of the following procedures:

(i) Monitor the concentration level of the organic compounds in the exhaust vent stream from the carbon adsorption system on a regular schedule and replace the existing carbon with fresh carbon immediately when carbon breakthrough is indicated. The monitoring frequency shall be daily or at an interval no greater than 20 percent of the time required to consume the total carbon working capacity established as a requirement of subitem (f)2(iv)(III)VII of this paragraph, whichever is longer.

(ii) Replace the existing carbon with fresh carbon at a regular, predetermined time interval that is less than the design carbon replacement interval established as a requirement of subitem (f)2(iv)(III)VII of this paragraph.

9. An owner or operator of an affected facility seeking to comply with the provisions of this rule by using a control device other than a thermal vapor incinerator, catalytic vapor incinerator, flare, boiler, process heater, condenser, or carbon adsorption system is required to develop documentation including sufficient information to describe the control device operation and identify the process parameter or parameters that indicate proper operation and maintenance of the control device.

10. A closed-vent system shall meet either of the following design requirements:

(i) A closed-vent system shall be designed to operate with no detectable emissions, as indicated by an instrument reading of less than 500 ppmv above background as determined by the procedure in part (e)2 of this paragraph, and by visual inspections; or

(ii) A closed-vent system shall be designed to operate at a pressure below atmospheric pressure. The system shall be equipped with at least one pressure gauge or other pressure measurement device that can be read from a readily accessible location to verify that negative pressure is being maintained in the closed-vent system when the control device is operating.

11. The owner or operator shall monitor and inspect each closed-vent system required to comply with this subparagraph to ensure proper operation and maintenance of the

closed-vent system by implementing the following requirements:

(i) Each closed-vent system that is used to comply with subpart 10(i) of this subparagraph shall be inspected and monitored in accordance with the following requirements:

(I) An initial leak detection monitoring of the closed-vent system shall be conducted by the owner or operator on or before the date that the system becomes subject to this subparagraph. The owner or operator shall monitor the closed-vent system components and connections using the procedures specified in part (e)2 of this paragraph to demonstrate that the closed-vent system operates with no detectable emissions, as indicated by an instrument reading of less than 500 ppmv above background.

(II) After initial leak detection monitoring required in item (I) of this subpart, the owner or operator shall inspect and monitor the closed-vent system as follows:

I. Closed-vent system joints, seams, or other connections that are permanently or semi-permanently sealed (e.g., a welded joint between two sections of hard piping or a bolted and gasketed ducting flange) shall be visually inspected at least once per year to check for defects that could result in air pollutant emissions. The owner or operator shall monitor a component or connection using the procedures specified in part (e)2 of this paragraph to demonstrate that it operates with no detectable emissions following any time the component is repaired or replaced (e.g., a section of damaged hard piping is replaced with new hard piping) or the connection is unsealed (e.g., a flange is unbolted).

II. Closed-vent system components or connections other than those specified in subitem I of this item shall be monitored annually and at other times as requested by the Commissioner, except as provided for in part 14 of this subparagraph, using the procedures specified in part (e)2 of this paragraph to demonstrate that the components or connections operate with no detectable emissions.

(III) In the event that a defect or leak is detected, the owner or operator shall repair the defect or leak in accordance with the requirements of subpart (iii) of this part.

(IV) The owner or operator shall maintain a record of the inspection and monitoring in accordance with the requirements specified in subparagraph (f) of this paragraph.

(ii) Each closed-vent system that is used to comply with subpart 10(ii) of this subparagraph shall be inspected and monitored in accordance with the following requirements:

(I) The closed-vent system shall be visually inspected by the owner or operator to check for defects that could result in air pollutant emissions. Defects include, but are not limited to, visible cracks, holes, or gaps in ductwork or piping or loose connections.

(II) The owner or operator shall perform an initial inspection of the closed-vent system on or before the date that the system becomes subject to this subparagraph. Thereafter, the owner or operator shall perform the

inspections at least once every year.

(III) In the event that a defect or leak is detected, the owner or operator shall repair the defect in accordance with the requirements of subpart (iii) of this part.

(IV) The owner or operator shall maintain a record of the inspection and monitoring in accordance with the requirements specified in subparagraph (f) of this paragraph.

(iii) The owner or operator shall repair all detected defects as follows:

(I) Detectable emissions, as indicated by visual inspection, or by an instrument reading greater than 500 ppmv above background, shall be controlled as soon as practicable, but not later than 15 calendar days after the emission is detected, except as provided for in item (III) of this subpart.

(II) A first attempt at repair shall be made no later than 5 calendar days after the emission is detected.

(III) Delay of repair of a closed-vent system for which leaks have been detected is allowed if the repair is technically infeasible without a process unit shutdown, or if the owner or operator determines that emissions resulting from immediate repair would be greater than the fugitive emissions likely to result from delay of repair. Repair of such equipment shall be completed by the end of the next process unit shutdown.

(IV) The owner or operator shall maintain a record of the defect repair in accordance with the requirements specified in subparagraph (f) of this paragraph.

12. Closed-vent systems and control devices used to comply with provisions of this paragraph shall be operated at all times when emissions may be vented to them.

13. The owner or operator using a carbon adsorption system to control air pollutant emissions shall document that all carbon that is a hazardous waste and that is removed from the control device is managed in one of the following manners, regardless of the volatile organic concentration of the carbon:

(i) Regenerated or reactivated in a thermal treatment unit that meets one of the following:

(I) The owner or operator of the unit has been issued a final permit under Rule 0400-12-01-.07 which implements the requirements of Rule 0400-12-01-.06(27); or

(II) The unit is equipped with and operating air emission controls in accordance with the applicable requirements of either paragraphs (27) and (29) of this rule or paragraphs (30) and (32) of Rule 0400-12-01-.06; or

(III) The unit is equipped with and operating air emission controls in accordance with a national emission standard for hazardous air pollutants under 40 CFR Part 61 or 40 CFR Part 63.

(ii) Incinerated in a hazardous waste incinerator for which the owner or operator either:

(I) Has been issued a final permit under Rule 0400-12-01-.07 which implements the requirements of Rule 0400-12-01-.06(15); or

(II) Has designed and operates the incinerator in accordance with the interim status requirements of paragraph (15) of this rule.

(iii) Burned in a boiler or industrial furnace for which the owner or operator either:

(I) Has been issued a final permit under Rule 0400-12-01-.07 which implements the requirements of Rule 0400-12-01-.09(8); or

(II) Has designed and operates the boiler or industrial furnace in accordance with the interim status requirements of Rule 0400-12-01-.09(8).

14. Any components of a closed-vent system that are designated, as described in subpart (f)3(ix) of this paragraph, as unsafe to monitor are exempt from the requirements of subitem 11(i)(II)II of this subparagraph if:

(i) The owner or operator of the closed-vent system determines that the components of the closed-vent system are unsafe to monitor because monitoring personnel would be exposed to an immediate danger as a consequence of complying with subitem 11(i)(II)II of this subparagraph; and

(ii) The owner or operator of the closed-vent system adheres to a written plan that requires monitoring the closed-vent system components using the procedure specified in subitem 11(i)(II)II of this subparagraph as frequently as practicable during safe-to-monitor times.

15. The Reference Methods cited in preceding parts of this subparagraph are applicable as those methods exist on the effective date of this regulation.

(e) Test Methods and Procedures [40 CFR 265.1034]

1. Each owner or operator subject to the provisions of this paragraph shall comply with the test methods and procedures requirements provided in this subparagraph.

2. When a closed-vent system is tested for compliance with no detectable emissions, as required in part (d)11 of this paragraph, the test shall comply with the following requirements:

(i) Monitoring shall comply with Reference Method 21 in 40 CFR part 60.

(ii) The detection instrument shall meet the performance criteria of Reference Method 21.

(iii) The instrument shall be calibrated before use on each day of its use by the procedures specified in Reference Method 21.

(iv) Calibration gases shall be:

(I) Zero air (less than 10 ppm of hydrocarbon in air).

(II) A mixture of methane or n-hexane and air at a concentration of approximately, but less than, 10,000 ppm methane or n-hexane.

(v) The background level shall be determined as set forth in Reference Method 21.

(vi) The instrument probe shall be traversed around all potential leak interfaces as close to the interface as possible as described in Reference Method 21.

(vii) The arithmetic difference between the maximum concentration indicated by the instrument and the background level is compared with 500 ppm for determining compliance.

3. Performance tests to determine compliance with part (c)1 of this paragraph and with the total organic compound concentration limit of part (d)3 of this paragraph shall comply with the following:

(i) Performance tests to determine total organic compound concentrations and mass flow rates entering and exiting control devices shall be conducted and data reduced in accordance with the following reference methods and calculation procedures:

(I) Method 2 in 40 CFR part 60 for velocity and volumetric flow rate.

(II) Method 18 or Method 25A in 40 CFR part 60, Appendix A, for organic content. If Method 25A is used, the organic HAP used as the calibration gas must be the single organic HAP representing the largest percent by volume of the emissions. The use of Method 25A is acceptable if the response from the high-level calibration gas is at least 20 times the standard deviation of the response from the zero calibration gas when the instrument is zeroed on the most sensitive scale.

(III) Each performance test shall consist of three separate runs; each run conducted for at least 1 hour under the conditions that exist when the hazardous waste management unit is operating at the highest load or capacity level reasonably expected to occur. For the purpose of determining total organic compound concentrations and mass flow rates, the average of results of all runs shall apply. The average shall be computed on a time-weighted basis.

(IV) Total organic mass flow rates shall be determined by the following equation:

I. For sources utilizing Method 18.

$$E_h = Q_{2sd}\left[\sum_{i=1}^{n}\right] C_i MW_i \ (0.0416)\ (10^{-6})$$

where:

E_h = Total organic mass flow rate, kg/h;

Q_{2sd} = Volumetric flow rate of gases entering or exiting control device, as determined by Method 2, dscm/h;

n = Number of organic compounds in the vent gas;

C_i = Organic concentration in ppm, dry basis, of compound i in the vent gas, as determined by Method 18;

MW_i = Molecular weight of organic compound i in the vent gas, kg/kg-mol;

0.0416 = Conversion factor for molar volume, kg-mol/m^3 (@ 293 K and 760 mm Hg);

10^{-6} = Conversion from ppm.

II. For sources utilizing Method 25A.

$E_h = (Q)(C)(MW)(0.0416)(10^{-6})$

where:

E_h = Total organic mass flow rate, kg/h;

Q = Volumetric flow rate of gases entering or exiting control device, as determined by Method 2, dscm/h;

C = Organic concentration in ppm, dry basis, as determined by Method 25A;

MW = Molecular weight of propane, 44;

0.0416 = Conversion factor for molar volume, kg-mol/m3 (@ 293 K and 760 mm Hg);

10^{-6} = Conversion from ppm.

(V) The annual total organic emission rate shall be determined by the following equation:

$E_A = (E_h)(H)$

where:

E_A = Total organic mass emission rate, kg/y;

E_h = Total organic mass flow rate for the process vent, kg/h;

H = Total annual hours of operations for the affected unit, h.

(VI) Total organic emissions from all affected process vents at the facility shall be determined by summing the hourly total organic mass emission rates (E_h, as determined in item (IV) of this subpart) and by summing the annual total organic mass emission rates (E_A, as determined in item (V) of this subpart) for all affected process vents at the facility.

(ii) The owner or operator shall record such process information as may be necessary to determine the conditions of the performance tests. Operations during periods of startup, shutdown, and malfunction shall not constitute representative conditions for the purpose of a performance test.

(iii) The owner or operator of an affected facility shall provide, or cause to be provided, performance testing facilities as follows:

(I) Sampling ports adequate for the test methods specified in subpart (i) of this part.

(II) Safe sampling platform(s).

(III) Safe access to sampling platform(s).

(IV) Utilities for sampling and testing equipment.

(iv) For the purpose of making compliance determinations, the time-weighted average of the results of the three runs shall apply. In the event that a sample is accidentally lost or conditions occur in which one of the three runs must be discontinued because of forced shutdown, failure of an irreplaceable portion of the sample train, extreme meteorological conditions, or other circumstances beyond the owner or operator's control, compliance may, upon the Commissioner's approval, be determined using the average of the results of the two other runs.

4. To show that a process vent associated with a hazardous waste distillation, fractionation, thin-film evaporation, solvent extraction, or air or steam stripping operation is not subject to the requirements of this paragraph, the owner or operator must make an initial determination that the time-weighted, annual average total organic concentration of the waste managed by the waste management unit is less than 10 ppmw using one of the following two methods:

(i) Direct measurement of the organic concentration of the waste using the following procedures:

(I) The owner or operator must take a minimum of four grab samples of waste for each waste stream managed in the affected unit under process conditions expected to cause the maximum waste organic concentration.

(II) For waste generated onsite, the grab samples must be collected at a point before the waste is exposed to the atmosphere such as in an enclosed pipe or other closed system that is used to transfer the waste after generation to the first affected distillation fractionation, thin-film evaporation, solvent extraction, or air or steam stripping operation. For waste generated offsite, the grab samples must be collected at the inlet to the first waste management unit that receives the waste provided the waste has been transferred to the facility in a closed system such as a tank truck and the waste is not diluted or mixed with other waste.

(III) Each sample shall be analyzed and the total organic concentration of the sample shall be computed using Method 9060A of "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA Publication SW-846 (see 40 CFR 260.11; Rule 0400-12-01-.01(2)(b)1) or analyzed for its individual organic constituents.

(IV) The arithmetic mean of the results of the analyses of the four samples shall apply for each waste stream managed in the unit in determining the time-weighted, annual average total organic concentration of the waste. The time-weighted average is to be calculated using the annual quantity of each waste stream processed and the mean organic concentration of each waste stream managed in the unit.

(ii) Using knowledge of the waste to determine that its total organic concentration is less than 10 ppmw. Documentation of the waste determination is required. Examples of documentation that shall be used to support a determination under this provision include production process information documenting that no organic compounds are used, information that the waste is generated by a process that is identical to a process at the same or another facility that has previously been demonstrated by direct measurement to generate a waste stream having a total organic content less than 10 ppmw, or prior speciation

analysis results on the same waste stream where it can also be documented that no process changes have occurred since that analysis that could affect the waste total organic concentration.

5. The determination that distillation fractionation, thin-film evaporation, solvent extraction, or air or steam stripping operations manage hazardous wastes with time-weighted annual average total organic concentrations less than 10 ppmw shall be made as follows:

   (i) By the effective date that the facility becomes subject to the provisions of this paragraph or by the date when the waste is first managed in a waste management unit, whichever is later; and

   (ii) For continuously generated waste, annually; or

   (iii) Whenever there is a change in the waste being managed or a change in the process that generates or treats the waste.

6. When an owner or operator and the Commissioner do not agree on whether a distillation, fractionation, thin-film evaporation, solvent extraction, or air or steam stripping operation manages a hazardous waste with organic concentrations of at least 10 ppmw based on knowledge of the waste, the dispute may be resolved using direct measurement as specified at subpart 4(i) of this subparagraph.

7. The Reference Methods cited in preceding parts of this subparagraph are applicable as those methods exist on the effective date of this regulation.

(f) Recordkeeping Requirements [40 CFR 265.1035]

1. (i) Each owner or operator subject to the provisions of this paragraph shall comply with the recordkeeping requirements of this subparagraph.

   (ii) An owner or operator of more than one hazardous waste management unit subject to the provisions of this paragraph may comply with the recordkeeping requirements for these hazardous waste management units in one recordkeeping system if the system identifies each record by each hazardous waste management unit.

2. Owners and operators must record the following information in the facility operating record:

   (i) For facilities that comply with the provisions of subpart (d)1(ii) of this paragraph, an implementation schedule that includes dates by which the closed-vent system and control device will be installed and in operation. The schedule must also include a rationale of why the installation cannot be completed at an earlier date. The implementation schedule must be in the facility operating record by the effective date that the facility becomes subject to the provisions of this paragraph.

   (ii) Up-to-date documentation of compliance with the process vent standards in subparagraph (c) of this paragraph, including:

      (I) Information and data identifying all affected process vents, annual throughput and operating hours of each affected unit, estimated emission rates for each affected vent and for the overall facility (i.e., the total emissions for all affected vents at the facility), and the approximate location within the facility of each affected unit (e.g., identify the hazardous waste management units on a facility plot plan); and

      (II) Information and data supporting determinations of vent emissions and

emission reductions achieved by add-on control devices based on engineering calculations or source tests. For the purpose of determining compliance, determinations of vent emissions and emission reductions must be made using operating parameter values (e.g., temperatures, flow rates or vent stream organic compounds and concentrations) that represent the conditions that result in maximum organic emissions, such as when the waste management unit is operating at the highest load or capacity level reasonably expected to occur. If the owner or operator takes any action (e.g., managing a waste of different composition or increasing operating hours of affected waste management units) that would result in an increase in total organic emissions from affected process vents at the facility, then a new determination is required.

(iii) Where an owner or operator chooses to use test data to determine the organic removal efficiency or total organic compound concentration achieved by the control device, a performance test plan. The test plan must include:

(I) A description of how it is determined that the planned test is going to be conducted when the hazardous waste management unit is operating at the highest load or capacity level reasonably expected to occur. This shall include the estimated or design flow rate and organic content of each vent stream and define the acceptable operating ranges of key process and control device parameters during the test program.

(II) A detailed engineering description of the closed-vent system and control device including:

I. Manufacturer's name and model number of control device.

II. Type of control device.

III. Dimensions of the control device.

IV. Capacity.

V. Construction materials.

(III) A detailed description of sampling and monitoring procedures, including sampling and monitoring locations in the system, the equipment to be used, sampling and monitoring frequency, and planned analytical procedures for sample analysis.

(iv) Documentation of compliance with subparagraph (d) of this paragraph shall include the following information:

(I) A list of all information references and sources used in preparing the documentation.

(II) Records, including the dates, of each compliance test required by part (d)10 of this paragraph.

(III) If engineering calculations are used, a design analysis, specifications, drawings, schematics, and piping and instrumentation diagrams based on the appropriate sections of "APTI Course 415: Control of Gaseous Emissions" (listed in Rule 0400-12-01-.01(2)(b)) or other engineering texts acceptable to the Commissioner that present basic control device design information. Documentation provided by the control device manufacturer or vendor that describes the control device design in accordance with subitem I through VIII of this item may be used to

comply with this requirement. The design analysis shall address the vent stream characteristics and control device operation parameters as specified below.

I. For a thermal vapor incinerator, the design analysis shall consider the vent stream composition, constituent concentrations, and flow rate. The design analysis shall also establish the design minimum and average temperature in the combustion zone and the combustion zone residence time.

II. For a catalytic vapor incinerator, the design analysis shall consider the vent stream composition, constituent concentrations, and flow rate. The design analysis shall also establish the design minimum and average temperatures across the catalyst bed inlet and outlet.

III. For a boiler or process heater, the design analysis shall consider the vent stream composition, constituent concentrations, and flow rate. The design analysis shall also establish the design minimum and average flame zone temperatures, combustion zone residence time, and description of method and location where the vent stream is introduced into the combustion zone.

IV. For a flare, the design analysis shall consider the vent stream composition, constituent concentrations, and flow rate. The design analysis shall also consider the requirements specified in part (d)4 of this paragraph.

V. For a condenser, the design analysis shall consider the vent stream composition, constituent concentrations, flow rate, relative humidity, and temperature. The design analysis shall also establish the design outlet organic compound concentration level, design average temperature of the condenser exhaust vent stream, and design average temperatures of the coolant fluid at the condenser inlet and outlet.

VI. For a carbon adsorption system such as a fixed-bed adsorber that regenerates the carbon bed directly onsite in the control device, the design analysis shall consider the vent stream composition, constituent concentrations, flow rate, relative humidity, and temperature. The design analysis shall also establish the design exhaust vent stream organic compound concentration level, number and capacity of carbon beds, type and working capacity of activated carbon used for carbon beds, design total steam flow over the period of each complete carbon bed regeneration cycle, duration of the carbon bed steaming and cooling/drying cycles, design carbon bed temperature after regeneration, design carbon bed regeneration time, and design service life of carbon.

VII. For a carbon adsorption system such as a carbon canister that does not regenerate the carbon bed directly onsite in the control device, the design analysis shall consider the vent stream composition, constituent concentrations, flow rate, relative humidity, and temperature. The design analysis shall also establish the design outlet organic concentration level, capacity of carbon bed, type and working capacity of activated carbon used for carbon bed, and design carbon replacement interval based on the total carbon working capacity of the control device

and source operating schedule.

(IV) A statement signed and dated by the owner or operator certifying that the operating parameters used in the design analysis reasonably represent the conditions that exist when the hazardous waste management unit is or would be operating at the highest load or capacity level reasonably expected to occur.

(V) A statement signed and dated by the owner or operator certifying that the control device is designed to operate at an efficiency of 95 percent or greater unless the total organic concentration limit of part (c)1 of this paragraph is achieved at an efficiency less than 95 weight percent or the total organic emission limits of part (c)1 of this paragraph for affected process vents at the facility can be attained by a control device involving vapor recovery at an efficiency less than 95 weight percent. A statement provided by the control device manufacturer or vendor certifying that the control equipment meets the design specifications may be used to comply with this requirement.

(VI) If performance tests are used to demonstrate compliance, all test results.

3. Design documentation and monitoring, operating, and inspection information for each closed-vent system and control device required to comply with the provisions of this rule shall be recorded and kept up-to-date in the facility operating record. The information shall include:

(i) Description and date of each modification that is made to the closed-vent system or control device design.

(ii) Identification of operating parameter, description of monitoring device, and diagram of monitoring sensor location or locations used to comply with subparts (d)6(i) and (ii) of this paragraph.

(iii) Monitoring, operating and inspection information required by parts (d)6 through 11 of this paragraph.

(iv) Date, time, and duration of each period that occurs while the control device is operating when any monitored parameter exceeds the value established in the control device design analysis as specified below:

(I) For a thermal vapor incinerator designed to operate with a minimum residence time of 0.50 seconds at a minimum temperature of 760 °C, period when the combustion temperature is below 760 °C.

(II) For a thermal vapor incinerator designed to operate with an organic emission reduction efficiency of 95 percent or greater, period when the combustion zone temperature is more than 28 °C below the design average combustion zone temperature established as a requirement of subitem 2(iv)(III)I of this subparagraph.

(III) For a catalytic vapor incinerator, period when:

I. Temperature of the vent stream at the catalyst bed inlet is more than 28 °C below the average temperature of the inlet vent stream established as a requirement of subitem 2(iv)(III)II of this subparagraph; or

II. Temperature difference across the catalyst bed is less than 80 percent of the design average temperature difference

established as a requirement of subitem 2(iv)(III)II of this subparagraph.

(IV) For a boiler or process heater, period when:

I. Flame zone temperature is more than 28 °C below the design average flame zone temperature established as a requirement of subitem 2(iv)(III)III of this subparagraph; or

II. Position changes where the vent stream is introduced to the combustion zone from the location established as a requirement of subitem 2(iv)(III)III of this subparagraph.

(V) For a flare, period when the pilot flame is not ignited.

(VI) For a condenser that complies with subitem (d)6(ii)(VI)I of this paragraph, period when the organic compound concentration level or readings of organic compounds in the exhaust vent stream from the condenser are more than 20 percent greater than the design outlet organic compound concentration level established as a requirement of subitem 2(iv)(III)V of this subparagraph.

(VII) For a condenser that complies with subitem (d)6(ii)(VI)II of this paragraph, period when:

I. Temperature of the exhaust vent stream from the condenser is more than 6 °C above the design average exhaust vent stream temperature established as a requirement of subitem 2(iv)(III)V of this subparagraph; or

II. Temperature of the coolant fluid exiting the condenser is more than 6 °C above the design average coolant fluid temperature at the condenser outlet established as a requirement of subitem 2(iv)(III)V of this subparagraph.

(VIII) For a carbon adsorption system such as a fixed-bed carbon adsorber that regenerates the carbon bed directly onsite in the control device and complies with subitem (d)6(ii)(VII)I of this paragraph, period when the organic compound concentration level or readings of organic compounds in the exhaust vent stream from the carbon bed are more than 20 percent greater than the design exhaust vent stream organic compound concentration level established as a requirement of subitem 2(iv)(III)VI of this subparagraph.

(IX) For a carbon adsorption system such as a fixed-bed carbon adsorber that regenerates the carbon bed directly onsite in the control device and complies with subitem (d)6(ii)(VII)II of this paragraph, period when the vent stream continues to flow through the control device beyond the predetermined carbon bed regeneration time established as a requirement of subitem 2(iv)(III)VI of this subparagraph.

(v) Explanation for each period recorded under subpart (iv) of this part of the cause for control device operating parameter exceeding the design value and the measures implemented to correct the control device operation.

(vi) For carbon adsorption systems operated subject to requirements specified in part (d)7 or subpart (d)8(ii) of this paragraph, date when existing carbon in the control device is replaced with fresh carbon.

(vii) For carbon adsorption systems operated subject to requirements specified in subpart (d)8(i) of this paragraph, a log that records:

(I) Date and time when control device is monitored for carbon breakthrough and the monitoring device reading.

(II) Date when existing carbon in the control device is replaced with fresh carbon.

(viii) Date of each control device startup and shutdown.

(ix) An owner or operator designating any components of a closed-vent system as unsafe to monitor pursuant to part (d)14 of this paragraph shall record in a log that is kept in the facility operating record the identification of closed-vent system components that are designated as unsafe to monitor in accordance with the requirements of part (d)14 of this paragraph, an explanation for each closed-vent system component stating why the closed-vent system component is unsafe to monitor, and the plan for monitoring each closed-vent system component.

(x) When each leak is detected as specified in part (d)11 of this paragraph, the following information shall be recorded:

(I) The instrument identification number, the closed-vent system component identification number, and the operator name, initials, or identification number.

(II) The date the leak was detected and the date of first attempt to repair the leak.

(III) The date of successful repair of the leak.

(IV) Maximum instrument reading measured by Method 21 of 40 CFR part 60, appendix A after it is successfully repaired or determined to be nonrepairable.

(V) "Repair delayed" and the reason for the delay if a leak is not repaired within 15 calendar days after discovery of the leak.

I. The owner or operator may develop a written procedure that identifies the conditions that justify a delay of repair. In such cases, reasons for delay of repair may be documented by citing the relevant sections of the written procedure.

II. If delay of repair was caused by depletion of stocked parts, there must be documentation that the spare parts were sufficiently stocked on-site before depletion and the reason for depletion.

4. Records of the monitoring, operating, and inspection information required by subparts 3(iii) through 3(x) of this subparagraph shall be maintained by the owner or operator for at least 3 years following the date of each occurrence, measurement, maintenance, corrective action, or record.

5. For a control device other than a thermal vapor incinerator, catalytic vapor incinerator, flare, boiler, process heater, condenser, or carbon adsorption system, monitoring and inspection information indicating proper operation and maintenance of the control device must be recorded in the facility operating record.

6. Up-to-date information and data used to determine whether or not a process vent is subject to the requirements in subparagraph (c) of this paragraph including supporting

documentation as required by subpart (e)4(ii) of this paragraph when application of the knowledge of the nature of the hazardous waste stream or the process by which it was produced is used, shall be recorded in a log that is kept in the facility operating record.

(28) Air Emission Standards for Equipment Leaks [40 CFR 265 Subpart BB]

(a) Applicability [40 CFR 265.1050]

1. The regulations in this paragraph apply to owners and operators of facilities that treat, store, or dispose of hazardous wastes (except as provided in subparagraph (1)(b) of this rule).

2. Except as provided in part (o)11 of this paragraph, this paragraph applies to equipment that contains or contacts hazardous wastes with organic concentrations of at least 10 percent by weight that are managed in one of the following:

(i) A unit that is subject to the permitting requirements of Rule 0400-12-01-.07;

(ii) A unit (including a hazardous waste recycling unit) that is not exempt from permitting under the provisions of part (4)(e)2 of Rule 0400-12-01-.03 (i.e., a hazardous waste recycling unit that is not a 90-day tank or container) and that is located at a hazardous waste management facility otherwise subject to the permitting requirements of Rule 0400-12-01-.07; or

(iii) A unit that is exempt from permitting under the provisions of part (4)(e)2 of Rule 0400-12-01-.03 (i.e., a "90-day" tank or container) and is not a recycling unit under the provisions of Rule 0400-12-01-.02(1)(f).

3. Each piece of equipment to which this paragraph applies shall be marked in such a manner that it can be distinguished readily from other pieces of equipment.

4. Equipment that is in vacuum service is excluded from the requirements of subparagraph (c) to (k) of this paragraph if it is identified as required in subpart (o)7(v) of this paragraph.

5. Equipment that contains or contacts hazardous waste with an organic concentration of at least 10 percent by weight for less than 300 hours per calendar year is excluded from the requirements of subparagraphs (c) through (k) of this paragraph if it is identified as required in subpart (o)7(vi) of this paragraph.

6. (Reserved) [40 CFR 265.1050(f)]

7. Purged coatings and solvents from surface coating operations subject to the national emission standards for hazardous air pollutants (NESHAP) for the surface coating of automobiles and light-duty trucks at 40 CFR part 63, subpart IIII, are not subject to the requirements of this paragraph.

(Note: The requirements of subparagraphs (c) through (o) of this paragraph apply to equipment associated with hazardous waste recycling units previously exempt under Rule 0400-12-01-.02(1)(f)3(i). Other exemptions under Rule 0400-12-01-.02(1)(d) and part (1)(b)2 of this rule are not affected by these requirements.)

(b) Definitions [40 CFR 265.1051]

As used in this subpart, all terms shall have the meaning given them in Rule 0400-12-01-.06(30)(b), Tennessee Code Annotated §§68-212-101 et seq., Rules 0400-12-01-.01 through .06, and Rule 0400-12-01-.09.

(c) Standards: Pumps in Light Liquid Service [40 CFR 265.1052]

1. (i) Each pump in light liquid service shall be monitored monthly to detect leaks by the methods specified in part (n)2 of this paragraph, except as provided in parts 4, 5, and 6 of this subparagraph.

(ii) Each pump in light liquid service shall be checked by visual inspection each calendar week for indications of liquids dripping from the pump seal.

2. (i) If an instrument reading of 10,000 ppm or greater is measured, a leak is detected.

(ii) If there are indications of liquids dripping from the pump seal, a leak is detected.

3. (i) When a leak is detected, it shall be repaired as soon as practicable, but not later than 15 calendar days after it is detected, except as provided in subparagraph (j) of this paragraph.

(ii) A first attempt at repair (e.g., tightening the packing gland) shall be made no later than 5 calendar days after each leak is detected.

4. Each pump equipped with a dual mechanical seal system that includes a barrier fluid system is exempt from the requirements of part 1 of this subparagraph, provided the following requirements are met:

(i) Each dual mechanical seal system must be:

(I) Operated with the barrier fluid at a pressure that is at all times greater than the pump stuffing box pressure, or

(II) Equipped with a barrier fluid degassing reservoir that is connected by a closed-vent system to a control device that complies with the requirements of subparagraph (k) of this paragraph, or

(III) Equipped with a system that purges the barrier fluid into a hazardous waste stream with no detectable emissions to the atmosphere.

(ii) The barrier fluid system must not be a hazardous waste with organic concentrations 10 percent or greater by weight.

(iii) Each barrier fluid system must be equipped with a sensor that will detect failure of the seal system, the barrier fluid system or both.

(iv) Each pump must be checked by visual inspection, each calendar week, for indications of liquids dripping from the pump seals.

(v) (I) Each sensor as described in subpart (iii) of this part must be checked daily or be equipped with an audible alarm that must be checked monthly to ensure that it is functioning properly.

(II) The owner or operator must determine, based on design considerations and operating experience, a criterion that indicates failure of the seal system, the barrier fluid system, or both.

(vi) (I) If there are indications of liquids dripping from the pump seal or the sensor indicates failure of the seal system, the barrier fluid system, or both based on the criterion determined in item (v)(II) of this part, a leak is detected.

(II) When a leak is detected, it shall be repaired as soon as practicable, but not later than 15 calendar days after it is detected, except as provided in

subparagraph (j) of this paragraph.

(III) A first attempt at repair (e.g., relapping the seal) shall be made no later than 5 calendar days after each leak is detected.

5. Any pump that is designated, as described in subpart (o)7(ii) of this paragraph, for no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, is exempt from the requirements of parts 1, 3, and 4 of this subparagraph if the pump meets the following requirements:

(i) Must have no externally actuated shaft penetrating the pump housing.

(ii) Must operate with no detectable emissions as indicated by an instrument reading of less than 500 ppm above background as measured by the methods specified in part (n)3 of this paragraph.

(iii) Must be tested for compliance with subpart (ii) of this part initially upon designation, annually, and at other times as requested by the Commissioner.

6. If any pump is equipped with a closed-vent system capable of capturing and transporting any leakage from the seal or seals to a control device that complies with the requirements of subparagraph (k) of this paragraph, it is exempt from the requirements of parts 1 through 5 of this subparagraph.

(d) Standards: Compressors [40 CFR 265.1053]

1. Each compressor shall be equipped with a seal system that includes a barrier fluid system and that prevents leakage of total organic emissions to the atmosphere, except as provided in parts 8 and 9 of this subparagraph.

2. Each compressor seal system as required in part 1 of this subparagraph shall be:

(i) Operated with the barrier fluid at a pressure that is at all times greater than the compressor stuffing box pressure, or

(ii) Equipped with a barrier fluid system that is connected by a closed-vent system to a control device that complies with the requirements of subparagraph (k) of this paragraph, or

(iii) Equipped with a system that purges the barrier fluid into a hazardous waste stream with no detectable emissions to atmosphere.

3. The barrier fluid must not be a hazardous waste with organic concentrations 10 percent or greater by weight.

4. Each barrier fluid system as described in parts 1 through 3 of this subparagraph shall be equipped with a sensor that will detect failure of the seal system, barrier fluid system, or both.

5. (i) Each sensor as required in part 4 of this subparagraph shall be checked daily or shall be equipped with an audible alarm that must be checked monthly to ensure that it is functioning properly unless the compressor is located within the boundary of an unmanned plant site, in which case the sensor must be checked daily.

(ii) The owner or operator shall determine, based on design considerations and operating experience, a criterion that indicates failure of the seal system, the barrier fluid system or both.

6. If the sensor indicates failure of the seal system, the barrier fluid system, or both based on the criterion determined under subpart 5(ii) of this subparagraph, a leak is detected.

7. (i) When a leak is detected, it shall be repaired as soon as practicable, but not later than 15 calendar days after it is detected, except as provided in subparagraph (j) of this paragraph.

(ii) A first attempt at repair (e.g., tightening the packing gland) shall be made no later than 5 calendar days after each leak is detected.

8. A compressor is exempt from the requirements of parts 1 and 2 of this subparagraph if it is equipped with a closed-vent system capable of capturing and transporting any leakage from the seal to a control device that complies with the requirements of subparagraph (k) of this paragraph, except as provided in part 9 of this subparagraph.

9. Any compressor that is designated, as described in subpart (o)7(ii) of this paragraph, for no detectable emission as indicated by an instrument reading of less than 500 ppm above background is exempt from the requirements of parts 1 through 8 of this subparagraph if the compressor:

(i) Is determined to be operating with no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, as measured by the method specified in part (n)3 of this paragraph.

(ii) Is tested for compliance with subpart (i) of this part initially upon designation, annually, and at other times as requested by the Commissioner.

(e) Standards: Pressure Relief Devices in Gas/Vapor Service [40 CFR 265.1054]

1. Except during pressure releases, each pressure relief device in gas/vapor service shall be operated with no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, as measured by the method specified in part (n)3 of this paragraph.

2. (i) After each pressure release, the pressure relief device shall be returned to a condition of no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, as soon as practicable, but no later than 5 calendar days after each pressure release, except as provided in subparagraph (j) of this paragraph.

(ii) No later than 5 calendar days after the pressure release, the pressure relief device shall be monitored to confirm the condition of no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, as measured by the method specified in part (n)3 of this paragraph.

3. Any pressure relief device that is equipped with a closed-vent system capable of capturing and transporting leakage from the pressure relief device to a control device as described in subparagraph (k) of this paragraph is exempt from the requirements of parts 1 and 2 of this subparagraph.

(f) Standards: Sampling Connecting Systems [40 CFR 265.1055]

1. Each sampling connection system shall be equipped with a closed-purge, closed-loop, or closed-vent system. This system shall collect the sample purge for return to the process or for routing to the appropriate treatment system. Gases displaced during filling of the sample container are not required to be collected or captured.

2. Each closed-purge, closed-loop, or closed-vent system as required in part 1 of this subparagraph shall:

(i) Return the purged process fluid directly to the process line; or

(ii) Collect and recycle the purged process fluid; or

(iii) Be designed and operated to capture and transport all the purged process fluid to a waste management unit that complies with the applicable requirements of subparagraphs (29)(f) through (h) of this rule or a control device that complies with the requirements of subparagraph (k) of this paragraph.

3. In situ sampling systems and sampling systems without purges are exempt from the requirements of parts 1 and 2 of this subparagraph.

(g) Standards: Open-ended Valves or Lines [40 CFR 265.1056]

1. (i) Each open-ended valve or line shall be equipped with a cap, blind flange, plug, or a second valve.

(ii) The cap, blind flange, plug, or second valve shall seal the open end at all times except during operations requiring hazardous waste stream flow through the open-ended valve or line.

2. Each open-ended valve or line equipped with a second valve shall be operated in a manner such that the valve on the hazardous waste stream end is closed before the second valve is closed.

3. When a double block and bleed system is being used, the bleed valve or line may remain open during operations that require venting the line between the block valves but shall comply with part 1 of this subparagraph at all other times.

(h) Standards: Valves in Gas/vapor Service or in Light Liquid Service [40 CFR 265.1057]

1. Each valve in gas/vapor or light liquid service shall be monitored monthly to detect leaks by the methods specified in part (n)2 of this paragraph and shall comply with parts 2 through 5 of this subparagraph, except as provided in parts 6, 7, and 8 of this subparagraph and subparagraphs (l) and (m) of this paragraph.

2. If an instrument reading of 10,000 ppm or greater is measured, a leak is detected.

3. (i) Any valve for which a leak is not detected for two successive months may be monitored the first month of every succeeding quarter, beginning with the next quarter, until a leak is detected.

(ii) If a leak is detected, the valve shall be monitored monthly until a leak is not detected for 2 successive months.

4. (i) When a leak is detected, it shall be repaired as soon as practicable, but no later than 15 calendar days after the leak is detected, except as provided in subparagraph (j) of this paragraph.

(ii) A first attempt at repair shall be made no later than 5 calendar days after each leak is detected.

5. First attempts at repair include, but are not limited to, the following best practices where practicable:

(i) Tightening of bonnet bolts.

(ii) Replacement of bonnet bolts.

(iii) Tightening of packing gland nuts.

(iv) Injection of lubricant into lubricated packing.

6. Any valve that is designated, as described in subpart (o)7(ii) of this paragraph, for no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, is exempt from the requirements of part 1 of this subparagraph if the valve:

(i) Has no external actuating mechanism in contact with the hazardous waste stream.

(ii) Is operated with emissions less than 500 ppm above background as determined by the method specified in part (n)3 of this paragraph.

(iii) Is tested for compliance with subpart 6(ii) of this subparagraph initially upon designation, annually, and at other times as requested by the Commissioner.

7. Any valve that is designated, as described in subpart (o)8(i) of this paragraph, as an unsafe-to-monitor valve is exempt from the requirements of part 1 of this subparagraph if:

(i) The owner or operator of the valve determines that the valve is unsafe to monitor because monitoring personnel would be exposed to an immediate danger as a consequence of complying with part 1 of this subparagraph.

(ii) The owner or operator of the valve adheres to a written plan that requires monitoring of the valve as frequently as practicable during safe-to-monitor times.

8. Any valve that is designated, as described in subpart (o)8(ii) of this paragraph, as a difficult-to-monitor valve is exempt from the requirements of part 1 of this subparagraph if:

(i) The owner or operator of the valve determines that the valve cannot be monitored without elevating the monitoring personnel more than 2 meters above a support surface.

(ii) The hazardous waste management unit within which the valve is located was in operation before June 21, 1990.

(iii) The owner or operator of the valve follows a written plan that requires monitoring of the valve at least once per calendar year.

(i) Standards: Pumps and Valves in Heavy Liquid Service, Pressure Relief Devices in Light Liquid or Heavy Liquid Service, and Flanges and Other Connectors [40 CFR 265.1058]

1. Pumps and valves in heavy liquid service, pressure relief devices in light liquid or heavy liquid service, and flanges and other connectors shall be monitored within 5 days by the method specified in part (n)2 of this paragraph if evidence of a potential leak is found by visual, audible, olfactory, or any other detection method.

2. If an instrument reading of 10,000 ppm or greater is measured, a leak is detected.

3. (i) When a leak is detected, it shall be repaired as soon as practicable, but not later than 15 calendar days after it is detected, except as provided in subparagraph (j) of this paragraph.

(ii) The first attempt at repair shall be made no later than 5 calendar days after each leak is detected.

4. First attempts at repair include, but are not limited to, the best practices described under

part (h)5 of this paragraph.

5. Any connector that is inaccessible or is ceramic or ceramic-lined (e.g., porcelain, glass, or glass-lined) is exempt from the monitoring requirements of part 1 of this subparagraph and from the recordkeeping requirements of subparagraph (k) of this paragraph.

(j) Standards: Delay of Repair [40 CFR 265.1059]

1. Delay of repair of equipment for which leaks have been detected will be allowed if the repair is technically infeasible without a hazardous waste management unit shutdown. In such a case, repair of this equipment shall occur before the end of the next hazardous waste management unit shutdown.

2. Delay of repair of equipment for which leaks have been detected will be allowed for equipment that is isolated from the hazardous waste management unit and that does not continue to contain or contact hazardous waste with organic concentrations at least 10 percent by weight.

3. Delay of repair for valves will be allowed if:

(i) The owner or operator determines that emissions of purged material resulting from immediate repair are greater than the emissions likely to result from delay of repair.

(ii) When repair procedures are effected, the purged material is collected and destroyed or recovered in a control device complying with subparagraph (k) of this paragraph.

4. Delay of repair for pumps will be allowed if:

(i) Repair requires the use of a dual mechanical seal system that includes a barrier fluid system.

(ii) Repair is completed as soon as practicable, but not later than 6 months after the leak was detected.

5. Delay of repair beyond a hazardous waste management unit shutdown will be allowed for a valve if valve assembly replacement is necessary during the hazardous waste management unit shutdown, valve assembly supplies have been depleted, and valve assembly supplies had been sufficiently stocked before the supplies were depleted. Delay of repair beyond the next hazardous waste management unit shutdown will not be allowed unless the next hazardous waste management unit shutdown occurs sooner than 6 months after the first hazardous waste management unit shutdown.

(k) Standards: Closed-vent Systems and Control Devices [40 CFR 265.1060]

1. Owners and operators of closed-vent systems and control devices subject to this paragraph shall comply with the provisions of subparagraph (27)(d) of this rule.

2. (i) The owner or operator of an existing facility who cannot install a closed-vent system and control device to comply with the provisions of this paragraph on the effective date that the facility becomes subject to the provisions of this paragraph must prepare an implementation schedule that includes dates by which the closed-vent system and control device will be installed and in operation. The controls must be installed as soon as possible, but the implementation schedule may allow up to 30 months after the effective date that the facility becomes subject to this paragraph for installation and startup.

(ii) Any units that begin operation after December 21, 1990, and are subject to the

provisions of this paragraph when operation begins, must comply with the rules immediately (i.e., must have control devices installed and operating on startup of the affected unit); the 30-month implementation schedule does not apply.

(iii) The owner or operator of any facility in existence on the effective date of a statutory or regulatory amendment that renders the facility subject to this paragraph shall comply with all requirements of this paragraph as soon as practicable but no later than 30 months after the amendment's effective date. When control equipment required by this paragraph can not be installed and begin operation by the effective date of the amendment, the facility owner or operator shall prepare an implementation schedule that includes the following information: Specific calendar dates for award or contracts or issuance of purchase orders for the control equipment, initiation of on-site installation of the control equipment, completion of the control equipment installation, and performance of any testing to demonstrate that the installed equipment meets the applicable standards of this paragraph. The owner or operator shall enter the implementation schedule in the operating record or in a permanent, readily available file located at the facility.

(iv) Owners and operators of facilities and units that become newly subject to the requirements of this paragraph after December 8, 1997, due to an action other than those described in subpart (iii) of this part must comply with all applicable requirements immediately (i.e., must have control devices installed and operating on the date the facility or unit becomes subject to this paragraph; the 30-month implementation schedule does not apply).

(l) Alternative Standards for Valves in Gas/Vapor Service or in Light Liquid Service: Percentage of Valves Allowed to Leak [40 CFR 265.1061]

1. An owner or operator subject to the requirements of subparagraph (h) of this paragraph may elect to have all valves within a hazardous waste management unit comply with an alternative standard which allows no greater than 2 percent of the valves to leak.

2. The following requirements shall be met if an owner or operator decides to comply with the alternative standard of allowing 2 percent of valves to leak:

(i) A performance test as specified in part 3 of this subparagraph shall be conducted initially upon designation, annually, and at other times requested by the Commissioner.

(ii) If a valve leak is detected, it shall be repaired in accordance with parts (h)4 and (h)5 of this paragraph.

3. Performance tests shall be conducted in the following manner:

(i) All valves subject to the requirements in subparagraph (h) of this paragraph within the hazardous waste management unit shall be monitored within 1 week by the methods specified in part (n)2 of this paragraph.

(ii) If an instrument reading of 10,000 ppm or greater is measured, a leak is detected.

(iii) The leak percentage shall be determined by dividing the number of valves subject to the requirements in subparagraph (h) of this paragraph for which leaks are detected by the total number of valves subject to the requirements in subparagraph (h) of this paragraph within the hazardous waste management unit.

(m) Alternative Standards for Valves in Gas/Vapor Service or in Light Liquid Service: Skip Period

Leak Detection and Repair [40 CFR 265.1062]

1. An owner or operator subject to the requirements of subparagraph (h) of this paragraph may elect for all valves within a hazardous waste management unit to comply with one of the alternative work practices specified in subparts 2(ii) and 2(iii) of this subparagraph.

2. (i) An owner or operator shall comply with the requirements for valves, as described in subparagraph (h) of this paragraph, except as described in subparts (ii) and (iii) of this part.

(ii) After two consecutive quarterly leak detection periods with the percentage of valves leaking equal to or less than 2 percent, an owner or operator may begin to skip one of the quarterly leak detection periods (i.e., monitor for leaks once every six months) for the valves subject to the requirements in subparagraph (h) of this paragraph.

(iii) After five consecutive quarterly leak detection periods with the percentage of valves leaking equal to or less than 2 percent, an owner or operator may begin to skip three of the quarterly leak detection periods (i.e., monitor for leaks once every year) for the valves subject to the requirements in subparagraph (h) of this paragraph.

(iv) If the percentage of valves leaking is greater than 2 percent, the owner or operators shall monitor monthly in compliance with the requirements in subparagraph (h) of this paragraph, but may again elect to use this subparagraph after meeting the requirements of subpart (h)3(i) of this paragraph.

(n) Test Methods and Procedures [40 CFR 265.1063]

1. Each owner or operator subject to the provisions of this paragraph shall comply with the test methods and procedures requirements provided in this subparagraph.

2. Leak detection monitoring, as required in subparagraphs (c) through (m), shall comply with the following requirements:

(i) Monitoring shall comply with Reference Method 21 in 40 CFR part 60.

(ii) The detection instrument shall meet the performance criteria of Reference Method 21.

(iii) The instrument shall be calibrated before use on each day of its use by the procedures specified in Reference Method 21.

(iv) Calibration gases shall be:

(I) Zero air (less than 10 ppm of hydrocarbon in air).

(II) A mixture of methane or n-hexane and air at a concentration of approximately, but less than, 10,000 ppm methane or n-hexane.

(v) The instrument probe shall be traversed around all potential leak interfaces as close to the interface as possible as described in Reference Method 21.

3. When equipment is tested for compliance with no detectable emissions, as required in part (c)5, part (d)9, subparagraph (e), and part (h)6 of this paragraph, the test shall comply with the following requirements:

(i) The requirements of subparts 2(i) through (iv) of this subparagraph shall apply.

(ii) The background level shall be determined, as set forth in Reference Method 21.

(iii) The instrument probe shall be traversed around all potential leak interfaces as close to the interface as possible as described in Reference Method 21.

(iv) The arithmetic difference between the maximum concentration indicated by the instrument and the background level is compared with 500 ppm for determining compliance.

4. In accordance with the waste analysis plan required by part (2)(d)2 of this rule, an owner or operator of a facility must determine, for each piece of equipment, whether the equipment contains or contacts a hazardous waste with organic concentration that equals or exceeds 10 percent by weight using the following:

(i) Methods described in ASTM Methods D 2267-88, E 169-87, E 168-88, E 260-85 (see 40 CFR 260.11; Rule 0400-12-01-.01(2)(b)1).

(ii) Method 9060A of "Test Methods for Evaluating Solid Waste", EPA Publication SW-846 (see 40 CFR 260.11; Rule 0400-12-01-.01(2)(b)1) or analyzed for its individual organic constituents; or

(iii) Application of the knowledge of the nature of the hazardous waste stream or the process by which it was produced. Documentation of a waste determination by knowledge is required. Examples of documentation that shall be used to support a determination under this provision include production process information documenting that no organic compounds are used, information that the waste is generated by a process that is identical to a process at the same or another facility that has previously been demonstrated by direct measurement to have a total organic content less than 10 percent, or prior speciation analysis results on the same waste stream where it can also be documented that no process changes have occurred since that analysis that could affect the waste total organic concentration.

5. If an owner or operator determines that a piece of equipment contains or contacts a hazardous waste with organic concentrations at least 10 percent by weight, the determination can be revised only after following the procedures in subpart 4(i) or (ii) of this subparagraph.

6. When an owner or operator and the Commissioner do not agree on whether a piece of equipment contains or contacts a hazardous waste with organic concentrations at least 10 percent by weight, the procedures in subpart 4(i) or (ii) of this subparagraph can be used to resolve the dispute.

7. Samples used in determining the percent organic content shall be representative of the highest total organic content hazardous waste that is expected to be contained in or contact the equipment.

8. To determine if pumps or valves are in light liquid service, the vapor pressures of constituents may be obtained from standard reference texts or may be determined by ASTM D-2879-86 (see 40 CFR 260.11; Rule 0400-12-01-.01(2)(b)1).

9. Performance tests to determine if a control device achieves 95 weight percent organic emission reduction shall comply with the procedures of subparts (27)(e)3(i) through (iv) of this rule.

10. The Reference methods cited in preceding parts of this subparagraph are applicable as those methods exist on the effective date of these regulations.

(o) Recordkeeping Requirements [40 CFR 265.1064]

1. (i) Each owner or operator subject to the provisions of this paragraph shall comply with the recordkeeping requirements of this subparagraph.

(ii) An owner or operator of more than one hazardous waste management unit subject to the provisions of this paragraph may comply with the recordkeeping requirements for these hazardous waste management units in one recordkeeping system if the system identifies each record by each hazardous waste management unit.

2. Owners and operators must record the following information in the facility operating record:

(i) For each piece of equipment to which this paragraph applies:

(I) Equipment identification number and hazardous waste management unit identification.

(II) Approximate locations within the facility (e.g., identify the hazardous waste management unit on a facility plot plan).

(III) Type of equipment (e.g., a pump or pipeline valve).

(IV) Percent-by-weight total organics in the hazardous waste stream at the equipment.

(V) Hazardous waste state at the equipment (e.g., gas/vapor or liquid).

(VI) Method of compliance with the standard (e.g., "monthly leak detection and repair" or "equipped with dual mechanical seals").

(ii) For facilities that comply with the provisions of subpart (27)(d)1(ii) of this rule, an implementation schedule as specified in subpart (27)(d)1(ii) of this rule.

(iii) Where an owner or operator chooses to use test data to demonstrate the organic removal efficiency or total organic compound concentration achieved by the control device, a performance test plan as specified in subpart (27)(f)2(iii) of this rule.

(iv) Documentation of compliance with subparagraph (k) of this paragraph, including the detailed design documentation or performance test results specified in subpart (27)(f)2(iv) of this rule.

3. When each leak is detected as specified in subparagraphs (c), (d), (h), and (i) of this paragraph, the following requirements apply:

(i) A weatherproof and readily visible identification, marked with the equipment identification number, the date evidence of a potential leak was found in accordance with part (i)1 of this paragraph, and the date the leak was detected, shall be attached to the leaking equipment.

(ii) The identification on equipment, except on a valve, may be removed after it has been repaired.

(iii) The identification on a valve may be removed after it has been monitored for 2 successive months as specified in part (h)3 of this paragraph and no leak has been detected during those 2 months.

4. When each leak is detected as specified in subparagraphs (c), (d), (h), and (i) of this paragraph, the following information shall be recorded in an inspection log and shall be kept in the facility operating record:

(i) The instrument and operator identification numbers and the equipment identification number.

(ii) The date evidence of a potential leak was found in accordance with part (i)1 of this paragraph.

(iii) The date the leak was detected and the dates of each attempt to repair the leak.

(iv) Repair methods applied in each attempt to repair the leak.

(v) "Above 10,000" if the maximum instrument reading measured by the methods specified in pat (n)2 of this paragraph after each repair attempt is equal to or greater than 10,000 ppm.

(vi) "Repair delayed" and the reason for the delay if a leak is not repaired within 15 calendar days after discovery of the leak.

(vii) Documentation supporting the delay of repair of a valve in compliance with part (j)3 of this paragraph.

(viii) The signature of the owner or operator (or designate) whose decision it was that repair could not be effected without a hazardous waste management unit shutdown.

(ix) The expected date of successful repair of the leak if a leak is not repaired within 15 calendar days.

(x) The date of successful repair of the leak.

5. Design documentation and monitoring, operating, and inspection information for each closed-vent system and control device required to comply with the provisions of subparagraph (k) of this paragraph shall be recorded and kept up-to-date in the facility operating record as specified in subparagraph (27)(f) of this rule. Design documentation is specified in subparts (27)(f)3(i) and (ii) of this rule and monitoring, operating, and inspection information in subparts (27)(f)3(iii) through (viii) of this rule.

6. For a control device other than a thermal vapor incinerator, catalytic vapor incinerator, flare, boiler, process heater, condenser, or carbon adsorption system, monitoring and inspection information indicating proper operation and maintenance of the control device must be recorded in the facility operating record.

7. The following information pertaining to all equipment subject to the requirements in subparagraphs (c) through (k) of this paragraph shall be recorded in a log that is kept in the facility operating record:

(i) A list of identification numbers for equipment (except welded fittings) subject to the requirements of this paragraph.

(ii) (I) A list of identification numbers for equipment that the owner or operator elects to designate for no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, under the provisions of parts (c)5, (d)9, and (h)6 of this paragraph.

(II) The designation of this equipment as subject to the requirements of parts

(c)5, (d)9, or (h)6 of this paragraph shall be signed by the owner or operator.

(iii) A list of equipment identification numbers for pressure relief devices required to comply with part (e)1 of this paragraph.

(iv) (I) The dates of each compliance test required in parts (c)5, (d)9, subparagraph (e) and part (h)6 of this paragraph.

(II) The background level measured during each compliance test.

(III) The maximum instrument reading measured at the equipment during each compliance test.

(v) A list of identification numbers for equipment in vacuum service.

(vi) Identification, either by list or location (area or group) of equipment that contains or contacts hazardous waste with an organic concentration of at least 10 percent by weight for less than 300 hours per calendar year.

8. The following information pertaining to all valves subject to the requirements of parts (h)7 and 8 of this paragraph shall be recorded in a log that is kept in the facility operating record:

(i) A list of identification numbers for valves that are designated as unsafe to monitor, an explanation for each valve stating why the valve is unsafe to monitor, and the plan for monitoring each valve.

(ii) A list of identification numbers for valves that are designated as difficult to monitor, an explanation for each valve stating why the valve is difficult to monitor, and the planned schedule for monitoring each valve.

9. The following information shall be recorded in the facility operating record for valves complying with subparagraph (m) of this paragraph:

(i) A schedule of monitoring.

(ii) The percent of valves found leaking during each monitoring period.

10. The following information shall be recorded in a log that is kept in the facility operating record:

(i) Criteria required in item (c)4(v)(II) and subpart (d)5(ii) of this paragraph and an explanation of the criteria.

(ii) Any changes to these criteria and the reasons for the changes.

11. The following information shall be recorded in a log that is kept in the facility operating record for use in determining exemptions as provided in the applicability subparagraph of this paragraph and other specific paragraphs:

(i) An analysis determining the design capacity of the hazardous waste management unit.

(ii) A statement listing the hazardous waste influent to and effluent from each hazardous waste management unit subject to the requirements in subparagraphs (c) through (k) of this paragraph and an analysis determining whether these hazardous wastes are heavy liquids.

(iii) An up-to-date analysis and the supporting information and data used to determine whether or not equipment is subject to the requirements in subparagraphs (c) through (k) of this paragraph. The record shall include supporting documentation as required by subpart (n)4(iii) of this paragraph when application of the knowledge of the nature of the hazardous waste stream or the process by which it was produced is used. If the owner or operator takes any action (e.g., changing the process that produced the waste) that could result in an increase in the total organic content of the waste contained in or contacted by equipment determined not to be subject to the requirements in subparagraphs (c) through (k) of this paragraph, then a new determination is required.

12. Records of the equipment leak information required by part 4 of this subparagraph and the operating information required by part 5 of this subparagraph need be kept only 3 years.

13. The owner or operator of any facility with equipment that is subject to this paragraph and to leak detection, monitoring, and repair requirements under regulations at 40 CFR Part 60, Part 61, or Part 63 may elect to determine compliance with this paragraph either by documentation pursuant to this subparagraph, or by documentation of compliance with the regulations at 40 CFR Part 60, Part 61, or Part 63 pursuant to the relevant provisions of regulations at 40 CFR Part 60, Part 61, or Part 63. The documentation of compliance under regulation at 40 CFR Part 60, Part 61, or Part 63 shall be kept with or made readily available with the facility operating record.

(29) Air Emission Standards for Tanks, Surface Impoundments, and Containers [40 CFR 265 Subpart CC]

(a) Applicability [40 CFR 265.1080]

1. The requirements of this paragraph apply to owners and operators of all facilities that treat, store, or dispose of hazardous waste in tanks, surface impoundments, or containers subject to either paragraph (9), (10), or (11) of this rule except as subparagraph (1)(b) of this rule and part 2 of this subparagraph provide otherwise.

2. The requirements of this paragraph do not apply to the following waste management units at the facility:

(i) A waste management unit that holds hazardous waste placed in the unit before December 6, 1996, and in which no hazardous waste is added to the unit on or after December 6, 1996.

(ii) A container that has a design capacity less than or equal to 0.1 m^3.

(iii) A tank in which an owner or operator has stopped adding hazardous waste and the owner or operator has begun implementing or completed closure pursuant to an approved closure plan.

(iv) A surface impoundment in which an owner or operator has stopped adding hazardous waste (except to implement an approved closure plan) and the owner or operator has begun implementing or completed closure pursuant to an approved closure plan.

(v) A waste management unit that is used solely for on-site treatment or storage of hazardous waste that is placed in the unit as the result of implementing remedial activities required under the corrective action authorities of T.C.A. §§ 68-212-108(l), 68-212-111 or 68-212-201 et seq. authorities.

(vi) A waste management unit that is used solely for the management of radioactive mixed waste in accordance with all applicable regulations under the authority of the Atomic Energy Act and the Nuclear Waste Policy Act.

(vii) A hazardous waste management unit that the owner or operator certifies is equipped with and operating air emission controls in accordance with the requirements of an applicable Clean Air Act regulation codified under 40 CFR part 60, part 61, or part 63. For the purpose of complying with this paragraph, a tank for which the air emission control includes an enclosure, as opposed to a cover, must be in compliance with the enclosure and control device requirements of part (f)9 of this paragraph, except as provided in subpart (d)3(v) of this paragraph.

(viii) A tank that has a process vent as defined in Rule 0400-12-01-.06(30)(a).

(ix) Wastewater treatment units as defined in Rule 0400-12-01-.01(2)(a).

3. For the owner and operator of a facility subject to this paragraph who has received a final permit under T.C.A. §68-212-108 prior to December 6, 1996, the following requirements apply:

(i) The requirements of Rule 0400-12-01-.06(32) shall be incorporated into the permit when the permit is reissued in accordance with the requirements of Rule 0400-12-01-.07(7)(i) or reviewed in accordance with the requirements of Rule 0400-12-01-.07(8)(c).

(ii) Until the date when the permit is reissued in accordance with the requirements of Rule 0400-12-01-.07(7)(i) or reviewed in accordance with the requirements of Rule 0400-12-01-.07(8)(c), the owner and operator is subject to the requirements of this paragraph.

4. The requirements of this paragraph, except for the recordkeeping requirements specified in part (k)9 of this paragraph, are administratively stayed for a tank or a container used for the management of hazardous waste generated by organic peroxide manufacturing and its associated laboratory operations when the owner or operator of the unit meets all of the following conditions:

(i) The owner or operator identifies that the tank or container receives hazardous waste generated by an organic peroxide manufacturing process producing more than one functional family of organic peroxides or multiple organic peroxides within one functional family, that one or more of these organic peroxides could potentially undergo self-accelerating thermal decomposition at or below ambient temperatures, and that organic peroxides are the predominant products manufactured by the process. For the purpose of meeting the conditions of this paragraph, "organic peroxide" means an organic compound that contains the bivalent -O-O- structure and which may be considered to be a structural derivative of hydrogen peroxide where one or both of the hydrogen atoms has been replaced by an organic radical.

(ii) The owner or operator prepares documentation, in accordance with the requirements of part (k)9 of this paragraph, explaining why an undue safety hazard would be created if air emission controls specified in subparagraphs (f) through (i) of this paragraph are installed and operated on the tanks and containers used at the facility to manage the hazardous waste generated by the organic peroxide manufacturing process or processes meeting the conditions of subpart (i) of this part.

(iii) The owner or operator notifies the Commissioner in writing that hazardous waste generated by an organic peroxide manufacturing process or processes meeting the conditions of subpart (i) of this part are managed at the facility in tanks or containers meeting the conditions of subpart (ii) of this part. The notification shall state the name and address of the facility, and be signed and dated by an

authorized representative of the facility owner or operator.

5. (Reserved) [40 CFR 265.1080(e)]

(b) Definitions [40 CFR 265.1081]

As used in this paragraph, all terms not defined herein shall have the meaning given to them in the Act and Rules 0400-12-01-.01 through .06 and .09.

"Average volatile organic concentration" or "average VO concentration" means the mass-weighted average volatile organic concentration of a hazardous waste as determined in accordance with the requirements of subparagraph (e) of this paragraph.

"Closure device" means a cap, hatch, lid, plug, seal, valve, or other type of fitting that blocks an opening in a cover such that when the device is secured in the closed position it prevents or reduces air pollutant emissions to the atmosphere. Closure devices include devices that are detachable from the cover (e.g., a sampling port cap), manually operated (e.g., a hinged access lid or hatch), or automatically operated (e.g., a spring-loaded pressure relief valve).

"Continuous seal" means a seal that forms a continuous closure that completely covers the space between the edge of the floating roof and the wall of a tank. A continuous seal may be a vapor-mounted seal, liquid-mounted seal, or metallic shoe seal. A continuous seal may be constructed of fastened segments so as to form a continuous seal.

"Cover" means a device that provides a continuous barrier over the hazardous waste managed in a unit to prevent or reduce air pollutant emissions to the atmosphere. A cover may have openings (such as access hatches, sampling ports, gauge wells) that are necessary for operation, inspection, maintenance, and repair of the unit on which the cover is used. A cover may be a separate piece of equipment which can be detached and removed from the unit or a cover may be formed by structural features permanently integrated into the design of the unit.

"Enclosure" means a structure that surrounds a tank or container, captures organic vapors emitted from the tank or container, and vents the captured vapors through a closed vent system to a control device.

"External floating roof" means a pontoon-type or double-deck type cover that rests on the surface of the material managed in a tank with no fixed roof.

"Fixed roof" means a cover that is mounted on a unit in a stationary position and does not move with fluctuations in the level of the material managed in the unit.

"Floating membrane cover" means a cover consisting of a synthetic flexible membrane material that rests upon and is supported by the hazardous waste being managed in a surface impoundment.

"Floating roof" means a cover consisting of a double deck, pontoon single deck, or internal floating cover which rests upon and is supported by the material being contained, and is equipped with a continuous seal.

"Hard-piping" means pipe or tubing that is manufactured and properly installed in accordance with relevant standards and good engineering practices.

"In light material service" means the container is used to manage a material for which both of the following conditions apply: The vapor pressure of one or more of the organic constituents in the material is greater than 0.3 kilopascals (kPa) at 20 °C; and the total concentration of the pure organic constituents having a vapor pressure greater than 0.3 kPa at 20 °C is equal to or greater than 20 percent by weight.

"Internal floating roof" means a cover that rests or floats on the material surface (but not

necessarily in complete contact with it) inside a tank that has a fixed roof.

"Liquid-mounted seal" means a foam or liquid-filled primary seal mounted in contact with the hazardous waste between the tank wall and the floating roof continuously around the circumference of the tank.

"Malfunction" means any sudden, infrequent, and not reasonably preventable failure of air pollution control equipment, process equipment, or a process to operate in a normal or usual manner. Failures that are caused in part by poor maintenance or careless operation are not malfunctions.

"Maximum organic vapor pressure" means the sum of the individual organic constituent partial pressures exerted by the material contained in a tank, at the maximum vapor pressure-causing conditions (i.e., temperature, agitation, pH effects of combining wastes, etc.) reasonably expected to occur in the tank. For the purpose of this subpart, maximum organic vapor pressure is determined using the procedures specified in part (e)3 of this paragraph.

"Metallic shoe seal" means a continuous seal that is constructed of metal sheets which are held vertically against the wall of the tank by springs, weighted levers, or other mechanisms and is connected to the floating roof by braces or other means. A flexible coated fabric (envelope) spans the annular space between the metal sheet and the floating roof.

"No detectable organic emissions" means no escape of organics to the atmosphere as determined using the procedure specified in part (e)4 of this paragraph.

"Point of waste origination" means as follows:

1. When the facility owner or operator is the generator of the hazardous waste, the point of waste origination means the point where a solid waste produced by a system, process, or waste management unit is determined to be a hazardous waste as defined in Rule 0400-12-01-.02.

   (Note: In this case, this term is being used in a manner similar to the use of the term "point of generation" in air standards established for waste management operations under authority of the Clean Air Act in 40 CFR Parts 60, 61, and 63.)

2. When the facility owner and operator are not the generator of the hazardous waste, point of waste origination means the point where the owner or operator accepts delivery or takes possession of the hazardous waste.

"Point of waste treatment" means the point where a hazardous waste to be treated in accordance with subpart (d)3(ii) of this paragraph exits the treatment process. Any waste determination shall be made before the waste is conveyed, handled, or otherwise managed in a manner that allows the waste to volatilize to the atmosphere.

"Safety device" means a closure device such as a pressure relief valve, frangible disc, fusible plug, or any other type of device which functions exclusively to prevent physical damage or permanent deformation to a unit or its air emission control equipment by venting gases or vapors directly to the atmosphere during unsafe conditions resulting from an unplanned, accidental, or emergency event. For the purpose of this subpart, a safety device is not used for routine venting of gases or vapors from the vapor headspace underneath a cover such as during filling of the unit or to adjust the pressure in this vapor headspace in response to normal daily diurnal ambient temperature fluctuations. A safety device is designed to remain in a closed position during normal operations and open only when the internal pressure, or another relevant parameter, exceeds the device threshold setting applicable to the air emission control equipment as determined by the owner or operator based on manufacturer recommendations, applicable regulations, fire protection and prevention codes, standard engineering codes and practices, or other requirements for the safe handling of flammable, ignitable, explosive, reactive, or hazardous materials.

"Single-seal system" means a floating roof having one continuous seal. This seal may be vapor-mounted, liquid-mounted, or a metallic shoe seal.

"Vapor-mounted seal" means a continuous seal that is mounted such that there is a vapor space between the hazardous waste in the unit and the bottom of the seal.

"Volatile organic concentration" or "VO concentration" means the fraction by weight of the volatile organic compounds contained in a hazardous waste expressed in terms of parts per million (ppmw) as determined by direct measurement or by knowledge of the waste in accordance with the requirements of subparagraph (e) of this paragraph. For the purpose of determining the VO concentration of a hazardous waste, organic compounds with a Henry's law constant value of at least 0.1 mole-fraction-in-the-gas-phase/mole-fraction-in-the-liquid-phase (0.1 Y/X) (which can also be expressed as 1.8×10^{-6} atmospheres/ gram-mole/m^3) at 25 degrees Celsius must be included. Appendix VI of paragraph (53) of this rule presents a list of compounds known to have a Henry's law constant value less than the cutoff level.

"Waste determination" means performing all applicable procedures in accordance with the requirements of subparagraph (e) of this paragraph to determine whether a hazardous waste meets standards specified in this paragraph. Examples of a waste determination include performing the procedures in accordance with the requirements of subparagraph (e) of this paragraph to determine the average VO concentration of a hazardous waste at the point of waste origination; the average VO concentration of a hazardous waste at the point of waste treatment and comparing the results to the exit concentration limit specified for the process used to treat the hazardous waste; the organic reduction efficiency and the organic biodegradation efficiency for a biological process used to treat a hazardous waste and comparing the results to the applicable standards; or the maximum volatile organic vapor pressure for a hazardous waste in a tank and comparing the results to the applicable standards.

"Waste stabilization process" means any physical or chemical process used to either reduce the mobility of hazardous constituents in a hazardous waste or eliminate free liquids as determined by Test Method 9095B (Paint Filter Liquids Test) in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA Publication No. SW-846, (see CFR 260.11; Rule 0400-12-01-.01(2)(b)1). A waste stabilization process includes mixing the hazardous waste with binders or other materials, and curing the resulting hazardous waste and binder mixture. Other synonymous terms used to refer to this process are "waste fixation" or "waste solidification." This does not include the adding of absorbent materials to the surface of a waste, without mixing, agitation, or subsequent curing, to absorb free liquid.

(c) Schedule for Implementation of Air Emission Standards [40 CFR 265.1082]

1. Owners or operators of facilities existing on December 6, 1996 and subject to paragraphs (9), (10) and (11) of this rule shall meet the following requirements:

(i) Install and begin operation of all control equipment or waste management units required to comply with this paragraph and complete modifications of production or treatment processes to satisfy exemption criteria in accordance with part (d)3 of this paragraph by December 6, 1996, except as provided for in subpart + (ii) of this part.

(ii) When control equipment or waste management units required to comply with this paragraph cannot be installed and in operation or modifications of production or treatment processes to satisfy exemption criteria in accordance with part (d)3 of this paragraph cannot be completed by December 6, 1996, the owner or operator shall:

(I) Install and begin operation of the control equipment and waste management units, and complete modifications of production or treatment processes as soon as possible but no later than December 8,

1997.

(II) Prepare an implementation schedule that includes the following information: specific calendar dates for award of contracts or issuance of purchase orders for control equipment, waste management units, and production or treatment process modifications; initiation of on-site installation of control equipment or waste management units, and modifications of production or treatment processes; completion of control equipment or waste management unit installation, and production or treatment process modifications; and performance of testing to demonstrate that the installed equipment or waste management units and modified production or treatment processes meet the applicable standards of this paragraph.

(III) For facilities subject to the recordkeeping requirements of subparagraph (5)(d) of this rule, the owner or operator shall enter the implementation schedule specified in item (II) of this subpart in the operating record no later than December 6, 1996.

(IV) For facilities not subject to subparagraph (5)(d) of this rule, the owner or operator shall enter the implementation schedule specified in item (II) of this subpart in a permanent, readily available file located at the facility no later than December 6, 1996.

2. Owners or operators of facilities and units in existence on the effective date of a statutory or regulatory amendment that renders the facility subject to paragraph (9), (10), or (11) of this rule shall meet the following requirements:

(i) Install and begin operation of control equipment or waste management units required to comply with this paragraph, and complete modifications of production or treatment processes to satisfy exemption criteria of part (d)3 of this paragraph by the effective date of the amendment, except as provided for in subpart (ii) of this part.

(ii) When control equipment or waste management units required to comply with this paragraph cannot be installed and begin operation, or when modifications of production or treatment processes to satisfy exemption criteria of part (d)3 of this paragraph cannot be completed by the effective date of the amendment, the owner or operator shall:

(I) Install and begin operation of the control equipment or waste management unit, and complete modification of production or treatment processes as soon as possible but no later than 30 months after the effective date of the amendment.

(II) For facilities subject to the recordkeeping requirements of subparagraph (5)(d) of this rule, enter and maintain the implementation schedule specified in item 1(ii)(II) of this subparagraph in the operating record no later than the effective date of the amendment, or

(III) For facilities not subject to subparagraph (5)(d) of this rule, the owner or operator shall enter and maintain the implementation schedule specified in item 1(ii)(II) of this subparagraph in a permanent, readily available file located at the facility site no later than the effective date of the amendment.

3. Owners and operators of facilities and units that become newly subject to the requirements of this paragraph after December 8, 1997 due to an action other than those

described in part 2 of this subparagraph must comply with all applicable requirements immediately (i.e., must have control devices installed and operating on the date the facility or unit becomes subject to this paragraph; the 30-month implementation schedule does not apply).

4. The Commissioner may elect to extend the implementation date for control equipment at a facility, on a case by case basis, to a date later than December 8, 1997, when special circumstances that are beyond the facility owner's or operator's control delay installation or operation of control equipment, and the owner or operator has made all reasonable and prudent attempts to comply with the requirements of this paragraph.

(d) Standards: General [40 CFR 265.1083]

1. This subparagraph applies to the management of hazardous waste in tanks, surface impoundments, and containers subject to this paragraph.

2. The owner or operator shall control air pollutant emissions from each hazardous waste management unit in accordance with standards specified in subparagraphs (f) through (i) of this paragraph, as applicable to the hazardous waste management unit, except as provided for in part 3 of this subparagraph.

3. A tank, surface impoundment, or container is exempt from standards specified in subparagraph (f) through (i) of this paragraph, as applicable, provided that the waste management unit is one of the following:

(i) A tank, surface impoundment, or container for which all hazardous waste entering the unit has an average VO concentration at the point of waste origination of less than 500 parts per million by weight (ppmw). The average VO concentration shall be determined using the procedures specified in part (e)1 of this paragraph. The owner or operator shall review and update, as necessary, this determination at least once every 12 months following the date of the initial determination for the hazardous waste streams entering the unit.

(ii) A tank, surface impoundment, or container for which the organic content of all the hazardous waste entering the waste management unit has been reduced by an organic destruction or removal process that achieves any one of the following conditions:

(I) A process that removes or destroys the organics contained in the hazardous waste to a level such that the average VO concentration of the hazardous waste at the point of waste treatment is less than the exit concentration limit (C_t) established for the process. The average VO concentration of the hazardous waste at the point of waste treatment and the exit concentration limit for the process shall be determined using the procedures specified in part (e)2 of this paragraph.

(II) A process that removes or destroys the organics contained in the hazardous waste to a level such that the organic reduction efficiency (R) for the process is equal to or greater than 95 percent, and the average VO concentration of the hazardous waste at the point of waste treatment is less than 100 ppmw. The organic reduction efficiency for the process and the average VO concentration of the hazardous waste at the point of waste treatment shall be determined using the procedures specified in part (e)2 of this paragraph.

(III) A process that removes or destroys the organics contained in the hazardous waste to a level such that the actual organic mass removal rate (MR) for the process is equal to or greater than the required organic mass removal rate (RMR) established for the process. The required

organic mass removal rate and the actual organic mass removal rate for the process shall be determined using the procedures specified in part (e)2 of this paragraph.

(IV) A biological process that destroys or degrades the organics contained in the hazardous waste, such that either of the following conditions is met:

I. The organic reduction efficiency (R) for the process is equal to or greater than 95 percent, and the organic biodegradation efficiency (R_{bio}) for the process is equal to or greater than 95 percent. The organic reduction efficiency and the organic biodegradation efficiency for the process shall be determined using the procedures specified in part (e)2 of this paragraph.

II. The total actual organic mass biodegradation rate (MR_{bio}) for all hazardous waste treated by the process is equal to or greater than the required organic mass removal rate (RMR). The required organic mass removal rate and the actual organic mass biodegradation rate for the process shall be determined using the procedures specified in part (e)2 of this paragraph.

(V) A process that removes or destroys the organics contained in the hazardous waste and meets all of the following conditions:

I. From the point of waste origination through the point where the hazardous waste enters the treatment process, the hazardous waste is continuously managed in waste management units which use air emission controls in accordance with the standards specified in subparagraphs (f) through (i) of this paragraph, as applicable to the waste management unit.

II. From the point of waste origination through the point where the hazardous waste enters the treatment process, any transfer of the hazardous waste is accomplished through continuous hard-piping or other closed system transfer that does not allow exposure of the waste to the atmosphere. The Department considers a drain system that meets the requirements of 40 CFR part 63, subpart RR-National Emission Standards for Individual Drain Systems to be a closed system.

III. The average VO concentration of the hazardous waste at the point of waste treatment is less than the lowest average VO concentration at the point of waste origination determined for each of the individual hazardous waste streams entering the process or 500 ppmw, whichever value is lower. The average VO concentration of each individual hazardous waste stream at the point of waste origination shall be determined using the procedure specified in part (e)1 of this paragraph. The average VO concentration of the hazardous waste at the point of waste treatment shall be determined using the procedure specified in part (e)2 of this paragraph.

(VI) A process that removes or destroys the organics contained in the hazardous waste to a level such that the organic reduction efficiency (R) for the process is equal to or greater than 95 percent and the owner or operator certifies that the average VO concentration at the point of waste origination for each of the individual waste streams entering the process is less than 10,000 ppmw. The organic reduction efficiency for the process and the average VO concentration of the hazardous waste at

the point of waste origination shall be determined using the procedures specified in parts (e)2 and (e)1 of this paragraph, respectively.

(VII) A hazardous waste incinerator for which the owner or operator has either:

I. Been issued a final permit under Rule 0400-12-01-.07, and designs and operates the unit in accordance with the requirements of Rule 0400-12-01-.06(15); or

II. Has designed and operates the incinerator in accordance with the interim status requirements of paragraph (15) of this rule.

(VIII) A boiler or industrial furnace for which the owner or operator has either:

I. Been issued a final permit under Rule 0400-12-01-.07 and which implements the requirements of Rule 0400-12-01-.09(8), or

II. Has designed and operates the boiler or industrial furnace in accordance with the interim status requirements of Rule 0400-12-01-.09(8).

(IX) For the purpose of determining the performance of an organic destruction or removal process in accordance with the conditions in each of items (I) through (VI) of this subpart, the owner or operator shall account for VO concentrations determined to be below the limit of detection of the analytical method by using the following VO concentration:

I. If Method 25D in 40 CFR part 60, appendix A is used for the analysis, one-half the blank value determined in the method at section 4.4 of Method 25D in 40 CFR part 60, appendix A, or a value of 25 ppmw, whichever is less.

II. If any other analytical method is used, one-half the sum of the limits of detection established for each organic constituent in the waste that has a Henry's law constant value at least 0.1 mole-fraction-in-the-gas-phase/mole-fraction-in-the-liquid-phase (0.1 Y/X) [which can also be expressed as 1.8×10^{-6} atmospheres/gram-mole/m^3] at 25 degrees Celsius.

(iii) A tank or surface impoundment used for biological treatment of hazardous waste in accordance with the requirements of item (ii)(IV) of this part.

(iv) A tank, surface impoundment, or container for which all hazardous waste placed in the unit either:

(I) Meets the numerical concentration limits for organic hazardous constituents, applicable to the hazardous waste, as specified in Rule 0400-12-01-.10--Land Disposal Restrictions under Table "Treatment Standards for Hazardous Waste in Rule 0400-12-01-.10(3)(a); or

(II) The organic hazardous constituents in the waste have been treated by the treatment technology established by the Department for the waste in Rule 0400-12-01-.10(3)(c)1, or have been removed or destroyed by an equivalent method of treatment approved by the Department pursuant to Rule 0400-12-01-.10(3)(c)2.

(v) A tank used for bulk feed of hazardous waste to a waste incinerator and all of the

following conditions are met:

(I) The tank is located inside an enclosure vented to a control device that is designed and operated in accordance with all applicable requirements specified under 40 CFR part 61, subpart FF--National Emission Standards for Benzene Waste Operations for a facility at which the total annual benzene quantity from the facility waste is equal to or greater than 10 megagrams per year;

(II) The enclosure and control device serving the tank were installed and began operation prior to November 25, 1996 and

(III) The enclosure is designed and operated in accordance with the criteria for a permanent total enclosure as specified in "Procedure T--Criteria for and Verification of a Permanent or Temporary Total Enclosure" under 40 CFR 52.741, appendix B. The enclosure may have permanent or temporary openings to allow worker access; passage of material into or out of the enclosure by conveyor, vehicles, or other mechanical or electrical equipment; or to direct air flow into the enclosure. The owner or operator shall perform the verification procedure for the enclosure as specified in Section 5.0 to "Procedure T--Criteria for and Verification of a Permanent or Temporary Total Enclosure" annually.

4. The Commissioner may at any time perform or request that the owner or operator perform a waste determination for a hazardous waste managed in a tank, surface impoundment, or container exempted from using air emission controls under the provisions of this subparagraph as follows:

(i) The waste determination for average VO concentration of a hazardous waste at the point of waste origination shall be performed using direct measurement in accordance with the applicable requirements of part (e)1 of this paragraph. The waste determination for a hazardous waste at the point of waste treatment shall be performed in accordance with the applicable requirements of part (e)2 of this paragraph.

(ii) In performing a waste determination pursuant to subpart (i) of this part, the sample preparation and analysis shall be conducted as follows:

(I) In accordance with the method used by the owner or operator to perform the waste analysis, except in the case specified in item (II) of this subpart.

(II) If the Commissioner determines that the method used by the owner or operator was not appropriate for the hazardous waste managed in the tank, surface impoundment, or container, then the Commissioner may choose an appropriate method.

(iii) In a case when the owner or operator is requested to perform the waste determination, the Commissioner may elect to have an authorized representative observe the collection of the hazardous waste samples used for the analysis.

(iv) In a case when the results of the waste determination performed or requested by the Commissioner do not agree with the results of a waste determination performed by the owner or operator using knowledge of the waste, then the results of the waste determination performed in accordance with the requirements of subpart (i) of this part shall be used to establish compliance with the requirements of this paragraph.

(v) In a case when the owner or operator has used an averaging period greater than

1 hour for determining the average VO concentration of a hazardous waste at the point of waste origination, the Commissioner may elect to establish compliance with this paragraph by performing or requesting that the owner or operator perform a waste determination using direct measurement based on waste samples collected within a 1-hour period as follows:

(I) The average VO concentration of the hazardous waste at the point of waste origination shall be determined by direct measurement in accordance with the requirements of part (e)1 of this paragraph.

(II) Results of the waste determination performed or requested by the Commissioner showing that the average VO concentration of the hazardous waste at the point of waste origination is equal to or greater than 500 ppmw shall constitute noncompliance with this paragraph except in a case as provided for in item (III) of this subpart.

(III) For the case when the average VO concentration of the hazardous waste at the point of waste origination previously has been determined by the owner or operator using an averaging period greater than 1 hour to be less than 500 ppmw but because of normal operating process variations the VO concentration of the hazardous waste determined by direct measurement for any given 1-hour period may be equal to or greater than 500 ppmw, information that was used by the owner or operator to determine the average VO concentration of the hazardous waste (e.g., test results, measurements, calculations, and other documentation) and recorded in the facility records in accordance with the requirements of part (e)1 and subparagraph (k) of this paragraph shall be considered by the Commissioner together with the results of the waste determination performed or requested by the Commissioner in establishing compliance with this paragraph.

(e) Waste Determination Procedures [40 CFR 265.1084]

1. Waste determination procedure to determine average volatile organic (VO) concentration of a hazardous waste at the point of waste origination.

(i) An owner or operator shall determine the average VO concentration at the point of waste origination for each hazardous waste placed in a waste management unit exempted under the provisions of subpart (d)3(i) of this paragraph from using air emission controls in accordance with standards specified in subparagraph (f) through (i) of this paragraph, as applicable to the waste management unit.

(ii) For a waste determination that is required by subpart (i) of this part, the average VO concentration of a hazardous waste at the point of waste origination shall be determined using either direct measurement as specified in subpart (iii) of this part or by knowledge as specified in subpart (iv) of this part.

(I) An initial determination of the average VO concentration of the waste stream shall be made before the first time any portion of the material in the hazardous waste stream is placed in a waste management unit exempted under the provisions of subpart (d)3(i) of this paragraph from using air emission controls, and thereafter an initial determination of the average VO concentration of the waste stream shall be made for each averaging period that a hazardous waste is managed in the unit; and

(II) Perform a new waste determination whenever changes to the source generating the waste stream are reasonably likely to cause the average VO concentration of the hazardous waste to increase to a level that is equal to or greater than the VO concentration limit specified in subpart

(d)3(i) of this paragraph.

(iii) Direct measurement to determine average VO concentration of a hazardous waste at the point of waste origination.

(I) Identification. The owner or operator shall identify and record the point of waste origination for the hazardous waste.

(II) Sampling. Samples of the hazardous waste stream shall be collected at the point of waste origination in a manner such that volatilization of organics contained in the waste and in the subsequent sample is minimized and an adequately representative sample is collected and maintained for analysis by the selected method.

I. The averaging period to be used for determining the average VO concentration for the hazardous waste stream on a mass-weighted average basis shall be designated and recorded. The averaging period can represent any time interval that the owner or operator determines is appropriate for the hazardous waste stream but shall not exceed 1 year.

II. A sufficient number of samples, but no less than four samples, shall be collected and analyzed for a hazardous waste determination. All of the samples for a given waste determination shall be collected within a one-hour period. The average of the four or more sample results constitutes a waste determination for the waste stream. One or more waste determinations may be required to represent the complete range of waste compositions and quantities that occur during the entire averaging period due to normal variations in the operating conditions for the source or process generating the hazardous waste stream. Examples of such normal variations are seasonal variations in waste quantity or fluctuations in ambient temperature.

III. All samples shall be collected and handled in accordance with written procedures prepared by the owner or operator and documented in a site sampling plan. This plan shall describe the procedure by which representative samples of the hazardous waste stream are collected such that a minimum loss of organics occurs throughout the sample collection and handling process, and by which sample integrity is maintained. A copy of the written sampling plan shall be maintained on-site in the facility operating records. An example of acceptable sample collection and handling procedures for a total volatile organic constituent concentration may be found in Method 25D in 40 CFR part 60, Appendix A.

IV. Sufficient information, as specified in the "site sampling plan" required under subitem III of this item, shall be prepared and recorded to document the waste quantity represented by the samples, as applicable, the operating conditions for the source or process generating the hazardous waste represented by the samples.

(III) Analysis. Each collected sample shall be prepared and analyzed in accordance with Method 25D in 40 CFR part 60, appendix A for the total concentration of volatile organic constituents, or using one or more methods when the individual organic compound concentrations are

identified and summed and the summed waste concentration accounts for and reflects all organic compounds in the waste with Henry's law constant values at least 0.1 mole-fraction-in-the-gas-phase/mole-fraction-in-the-liquid-phase (0.1 Y/X) [which can also be expressed as 1.8×10^{-6} atmospheres/gram-mole/m^3] at 25 degrees Celsius. At the owner or operator's discretion, the owner or operator may adjust test data obtained by any appropriate method to discount any contribution to the total volatile organic concentration that is a result of including a compound with a Henry's law constant value of less than 0.1 Y/X at 25 degrees Celsius. To adjust these data, the measured concentration of each individual chemical constituent contained in the waste is multiplied by the appropriate constituent-specific adjustment factor (f_{m25D}). If the owner or operator elects to adjust test data, the adjustment must be made to all individual chemical constituents with a Henry's law constant value greater than or equal to 0.1 Y/X at 25 degrees Celsius contained in the waste. Constituent-specific adjustment factors (f_{m25D}) can be obtained by contacting the Waste and Chemical Processes Group, Office of Air Quality Planning and Standards, Research Triangle Park, NC 27711. Other test methods may be used if they meet the requirements in item I or II of this subpart and provided the requirement to reflect all organic compounds in the waste with Henry's law constant values greater than or equal to 0.1 Y/X [which can also be expressed as 1.8×10^{-6} atmospheres/gram-mole/m^3] at 25 degrees Celsius, is met.

I. Any EPA standard method that has been validated in accordance with "Alternative Validation Procedure for EPA Waste and Wastewater Methods", 40 CFR Part 63, Appendix D.

II. Any other analysis method that has been validated in accordance with the procedures specified in Section 5.1 or Section 5.3, and the corresponding calculations in Section 6.1 or Section 6.3, of Method 301 in 40 CFR Part 63, appendix A. The data are acceptable if they meet the criteria specified in Section 6.1.5 or Section 6.3.3 of Method 301. If correction is required under section 6.3.3 of Method 301, the data are acceptable if the correction factor is within the range 0.7 to 1.30. Other sections of Method 301 are not required.

(IV) I. Calculations. The average VO concentration ($\overline{C}$) on a mass-weighted basis shall be calculated by using the results for all waste determinations conducted in accordance with items (II) and (III) of this subpart and the following equation:

$$\overline{C} = \frac{1}{Q_T} x \sum_{i=1}^{n} (Q_i x C_i)$$

Where:

$\overline{C}$ = Average VO concentration of the hazardous waste at the point of waste origination on a mass-weighted basis, ppmw.

i = Individual waste determination "i" of the hazardous waste.

n = Total number of waste determinations of the hazardous waste conducted for the averaging period (not to exceed 1 year).

Q_i = Mass quantity of hazardous waste stream represented by C_i, kg/hr.

Q_T = Total mass quantity of hazardous waste during the averaging period, kg/hr.

C_i = Measured VO concentration of waste determination "i" as determined in accordance with the requirements of item 1(iii)(III) of this subparagraph, (i.e., the average of the four or more samples specified in subitem 1(iii)(II)II of this subparagraph), ppmw.

II. For the purposes of determining C_i, for individual waste samples analyzed in accordance with item (III) of this subpart, the owner or operator shall account for VO concentrations determined to be below the limit of detection of the analytical method by using the following VO concentration:

A. If Method 25D in 40 CFR Part 60, Appendix A is used for the analysis, one-half the blank value determined in the method at section 4.4 of Method 25D in 40 CFR Part 60, Appendix A.

B. If any other analytical method is used, one-half the sum of the limits of detection established for each organic constituent in the waste that has a Henry's law constant value at least 0.1 mole-fraction-in-the-gas-phase/mole-fraction-in-the-liquid-phase (0.1 Y/X) [which can also be expressed as 1.8×10^{-6} atmospheres/gram-mole/m^3] at 25 degrees Celsius.

(V) Provided that the test method is appropriate for the waste as required under item (III) of this subpart, the Department will determine compliance based on the test method used by the owner or operator as recorded pursuant to subpart (k)6(i) of this paragraph.

(iv) Use of owner or operator knowledge to determine average VO concentration of a hazardous waste at the point of waste origination.

(I) Documentation shall be prepared that presents the information used as the basis for the owner's or operator's knowledge of the hazardous waste stream's average VO concentration. Examples of information that may be used as the basis for knowledge include: Material balances for the source or process generating the hazardous waste stream; constituent-specific chemical test data for the hazardous waste stream from previous testing that are still applicable to the current waste stream; previous test data for other locations managing the same type of waste stream; or other knowledge based on information included in manifests, shipping papers, or waste certification notices.

(II) If test data are used as the basis for knowledge, then the owner or operator shall document the test method, sampling protocol, and the means by which sampling variability and analytical variability are accounted for in the determination of the average VO concentration. For example, an owner or operator may use organic concentration test data for the hazardous waste stream that are validated in accordance with Method 301 in 40 CFR part 63, appendix A as the basis for knowledge of

the waste.

(III) An owner or operator using chemical constituent-specific concentration test data as the basis for knowledge of the hazardous waste may adjust the test data to the corresponding average VO concentration value which would have been obtained had the waste samples been analyzed using Method 25D in 40 CFR part 60, appendix A. To adjust these data, the measured concentration for each individual chemical constituent contained in the waste is multiplied by the appropriate constituent-specific adjustment factor (f_{m25D}).

(IV) In the event that the Commissioner and the owner or operator disagree on a determination of the average VO concentration for a hazardous waste stream using knowledge, then the results from a determination of average VO concentration using direct measurement as specified in subpart (iii) of this part shall be used to establish compliance with the applicable requirements of this paragraph. The Commissioner may perform or request that the owner or operator perform this determination using direct measurement. The owner or operator may choose one or more appropriate methods to analyze each collected sample in accordance with the requirements of item (iii)(III) of this part.

2. Waste determination procedures for treated hazardous waste.

(i) An owner or operator shall perform the applicable waste determination for each treated hazardous waste placed in a waste management unit exempted under the provisions of items (d)3(ii)(I) through (VI) of this paragraph from using air emission controls in accordance with standards specified in subparagraphs (f) through (i) of this paragraph, as applicable to the waste management unit.

(I) An initial determination of the average VO concentration of the waste stream shall be made before the first time any portion of the material in the treated waste stream is placed in a waste management unit exempted under the provision of subparts (d)3(ii), (iii) or (iv) of this paragraph from using air emission controls, and thereafter update the information used for the waste determination at least once every 12 months following the date of the initial waste determination; and

(II) Perform a new waste determination whenever changes to the process generating or treating the waste stream are reasonably likely to cause the average VO concentration of the hazardous waste to increase to a level such that the applicable treatment conditions specified in subparts (d)3(ii), (iii) or (iv) of this paragraph are not achieved.

(ii) The owner or operator shall designate and record the specific provision in subpart (d)3(ii) of this paragraph under which the waste determination is being performed. The waste determination for the treated hazardous waste shall be performed using the applicable procedures specified in subpart (iii) through (ix) of this part.

(iii) Procedure to determine the average VO concentration of a hazardous waste at the point of waste treatment.

(I) Identification. The owner or operator shall identify and record the point of waste treatment for the hazardous waste.

(II) Sampling. Samples of the hazardous waste stream shall be collected at the point of waste treatment in a manner such that volatilization of organics contained in the waste and in the subsequent sample is

minimized and an adequately representative sample is collected and maintained for analysis by the selected method.

I. The averaging period to be used for determining the average VO concentration for the hazardous waste stream on a mass-weighted average basis shall be designated and recorded. The averaging period can represent any time interval that the owner or operator determines is appropriate for the hazardous waste stream but shall not exceed 1 year.

II. A sufficient number of samples, but no less than four samples, shall be collected and analyzed for a hazardous waste determination. All of the samples for a given waste determination shall be collected within a one-hour period. The average of the four or more sample results constitutes a waste determination for the waste stream. One or more waste determinations may be required to represent the complete range of waste compositions and quantities that occur during the entire averaging period due to normal variations in the operating conditions for the process generating or treating the hazardous waste stream. Examples of such normal variations are seasonal variations in waste quantity or fluctuations in ambient temperature.

III. All samples shall be collected and handled in accordance with written procedures prepared by the owner or operator and documented in a site sampling plan. This plan shall describe the procedure by which representative samples of the hazardous waste stream are collected such that a minimum loss of organics occurs throughout the sample collection and handling process, and by which sample integrity is maintained. A copy of the written sampling plan shall be maintained on-site in the facility operating records. An example of acceptable sample collection and handling procedures for a total volatile organic constituent concentration may be found in Method 25D in 40 CFR part 60, appendix A.

IV. Sufficient information, as specified in the "site sampling plan" required under subitem III of this item, shall be prepared and recorded to document the waste quantity represented by the samples and, as applicable, the operating conditions for the process treating the hazardous waste represented by the samples.

(III) Analysis. Each collected sample shall be prepared and analyzed in accordance with Method 25D in 40 CFR part 60, Appendix A for the total concentration of volatile organic constituents, or using one or more methods when the individual organic compound concentrations are identified and summed and the summed waste concentration accounts for and reflects all organic compounds in the waste with Henry's law constant values at least 0.1 mole-fraction-in-the-gas-phase/mole-fraction-in-the-liquid-phase (0.1 Y/X) [which can also be expressed as 1.8×10^{-6} atmospheres/gram-mole/m^3] at 25 degrees Celsius. When the owner or operator is making a waste determination for a treated hazardous waste that is to be compared to an average VO concentration at the point of waste origination or the point of waste entry to the treatment system to determine if the conditions of items (I) through (VI) of subpart (32)(c)3(i) of Rule 0400-12-01-.06, or items (d)3(ii)(I) through (VI) of this paragraph are met, then the waste samples shall be prepared

and analyzed using the same method or methods as were used in making the initial waste determinations at the point of waste origination or at the point of entry to the treatment system. At the owner or operator's discretion, the owner or operator may adjust test data obtained by any appropriate method to discount any contribution to the total volatile organic concentration that is a result of including a compound with a Henry's law constant value less than 0.1 Y/X at 25 degrees Celsius. To adjust these data, the measured concentration of each individual chemical constituent in the waste is multiplied by the appropriate constituent-specific adjustment factor (f_{m25D}). If the owner or operator elects to adjust test data, the adjustment must be made to all individual chemical constituents with a Henry's law constant value greater than or equal to 0.1 Y/X at 25 degrees Celsius contained in the waste. Constituent-specific adjustment factors (f_{m25D}) can be obtained by contacting the Waste and Chemical Processes Group, Office of Air Quality Planning and Standards, Research Triangle Park, NC 27711. Other test methods may be used if they meet the requirements item I or II of this subpart and provided the requirement to reflect all organic compounds in the waste with Henry's law constant values greater than or equal to 0.1 Y/X [which can also be expressed as 1.8×10^{-6} atmospheres/gram-mole/m^3] at 25 degrees Celsius, is met.

I. Any EPA standard method that has been validated in accordance with "Alternative Validation Procedure for EPA Waste and Wastewater Methods", 40 CFR Part 63, Appendix D.

II. Any other analysis method that has been validated in accordance with the procedures specified in Section 5.1 or Section 5.3, and the corresponding calculations in Section 6.1 or Section 6.3, of Method 301 in 40 CFR Part 63, appendix A. The data are acceptable if they meet the criteria specified in Section 6.1.5 or Section 6.3.3 of Method 301. If correction is required under section 6.3.3 of Method 301, the data are acceptable if the correction factor is within the range 0.7 to 1.30. Other sections of Method 301 are not required.

(IV) Calculations. The average VO concentration ($\overline{C}$) on a mass- weighted basis shall be calculated by using the results for all waste determinations conducted in accordance with items (II) and (III) of this subpart and the following equation:

$$\overline{C} = \frac{1}{Q_T} x \sum_{i=1}^{n} (Q_i x C_i)$$

Where:

$\overline{C}$ = Average VO concentration of the hazardous waste at the point of waste treatment on a mass-weighted basis, ppmw.

i = Individual waste determination "i" of the hazardous waste.

n = Total number of waste determinations of the hazardous waste conducted for the averaging period (not to exceed 1 year).

Q_i = Mass quantity of hazardous waste stream represented

by C_i, kg/hr.

Q_T = Total mass quantity of hazardous waste during the averaging period, kg/hr.

C_i = Measured VO concentration of waste determination "i" as determined in accordance with the requirements of item (III) of this subpart, (i.e. the average of the four or more samples specified in subitem (II)II of this subpart), ppmw.

(V) Provided that the test method is appropriate for the waste as required under item (III) of this subpart, compliance shall be determined based on the test method used by the owner or operator as recorded pursuant to subpart (k)6(i) of this paragraph.

(iv) Procedure to determine the exit concentration limit (C_t) for a treated hazardous waste.

(I) The point of waste origination for each hazardous waste treated by the process at the same time shall be identified.

(II) If a single hazardous waste stream is identified in item (I) of this subpart, then the exit concentration limit (C_t) shall be 500 ppmw.

(III) If more than one hazardous waste stream is identified in item (I) of this subpart, then the average VO concentration of each hazardous waste stream at the point of waste origination shall be determined in accordance with the requirements of part 1 of this subparagraph. The exit concentration limit (C_t) shall be calculated by using the results determined for each individual hazardous waste stream and the following equation:

$$C_t = \frac{\sum_{x=1}^{m}\left(Q_x x \overline{C_x}\right) + \sum_{y=1}^{n}\left(Q_y x 500\,ppmw\right)}{\sum_{x=1}^{m} Q_x + \sum_{y=1}^{n} Q_y}$$

Where:

C_t = Exit concentration limit for treated hazardous waste, ppmw.

x = Individual hazardous waste stream "x" that has an average VO concentration less than 500 ppmw at the point of waste origination as determined in accordance with the requirements of part (e)1 of this paragraph.

y = Individual hazardous waste stream "y" that has an average VO concentration equal to or greater than 500 ppmw at the point of waste origination as determined in accordance with the requirements of part (e)1 of this paragraph.

m = Total number of "x" hazardous waste streams treated by process.

n = Total number of "y" hazardous waste streams treated by process.

Q_x = Annual mass quantity of hazardous waste stream "x," kg/yr.

Q_y = Annual mass quantity of hazardous waste stream "y," kg/yr.

$\overline{C}$ = Average VO concentration of hazardous waste stream "x" at the point of waste origination as determined in accordance with the requirements of part (e)1 of this paragraph, ppmw.

(v) Procedure to determine the organic reduction efficiency (R) for a treated hazardous waste.

(I) The organic reduction efficiency (R) for a treatment process shall be determined based on results for a minimum of three consecutive runs.

(II) All hazardous waste streams entering the treatment process and all hazardous waste streams exiting the treatment process shall be identified. The owner or operator shall prepare a sampling plan for measuring these streams that accurately reflects the retention time of the hazardous waste in the process.

(III) For each run, information shall be determined for each hazardous waste stream identified in item 2(v)(II) of this subparagraph using the following procedures:

I. The mass quantity of each hazardous waste stream entering the process (Q_b) and the mass quantity of each hazardous waste stream exiting the process (Q_a) be determined.

II. The average VO concentration at the point of waste origination of each hazardous waste stream entering the process ($\overline{C}_b$) during the run shall be determined in accordance with the requirements of subpart 1(iii) of this subparagraph. The average VO concentration at the point of waste treatment of each waste stream exiting the process ($\overline{C}_a$) during the run shall be determined in accordance with the requirements of subpart 2(iii) of this subparagraph.

(IV) The waste volatile organic mass flow entering the process (E_b) and the waste volatile organic mass flow exiting the process (E_a) shall be calculated by using the results determined in accordance with item (III) of this subpart and the following equations:

$$E_b = \frac{1}{10^6}\sum_{j=1}^{m}\left(Q_{bj}x\overline{C_{bj}}\right)$$

$$E_a = \frac{1}{10^6}\sum_{j=1}^{m}\left(Q_{aj}x\overline{C_{aj}}\right)$$

Where:

E_a = Waste volatile organic mass flow exiting process, kg/hr.

E_b = Waste volatile organic mass flow entering process, kg/hr.

m = Total number of runs (at least 3)

j = Individual run "j"

Q_b = Mass quantity of hazardous waste entering process during run "j," kg/hr.

Q_a = Average mass quantity of hazardous waste exiting process during run "j," kg/hr.

$\overline{C}_a$ = Average VO concentration of hazardous waste exiting process during run "j" as determined in accordance with the requirements of subpart (e)2(iii) of this paragraph, ppmw.

$\overline{C}_b$ = Average VO concentration of hazardous waste entering process during run "j" as determined in accordance with the requirements of subpart (e)1(iii) of this paragraph, ppmw.

(V) The organic reduction efficiency of the process shall be calculated by using the results determined in accordance with item (IV) of this subpart and the following equation:

$$R = \frac{E_b - E_a}{E_b} x100\%$$

Where:

R = Organic reduction efficiency, percent.

E_b = Waste volatile organic mass flow entering process as determined in accordance with the requirements of item (IV) of this subpart, kg/hr.

E_a = Waste volatile organic mass flow exiting process as determined in accordance with the requirements of item (IV) of this subpart, kg/hr.

(vi) Procedure to determine the organic biodegradation efficiency (R_{bio}) for a treated hazardous waste.

(I) The fraction of organics biodegraded (F_{bio}) shall be determined using the procedure specified in 40 CFR part 63, appendix C of this chapter.

(II) The R_{bio} shall be calculated by using the following equation:

$R_{bio} = F_{bio} \times 100\%$

Where:

R_{bio} = Organic biodegradation efficiency, percent.

F_{bio} = Fraction of organic biodegraded as determined in

accordance with the requirements of item (I) of this subpart.

(vii) Procedure to determine the required organic mass removal rate (RMR) for a treated hazardous waste.

(I) All of the hazardous waste streams entering the treatment process shall be identified.

(II) The average VO concentration of each hazardous waste stream at the point of waste origination shall be determined in accordance with the requirements of part 1 of this subparagraph.

(III) For each individual hazardous waste stream that has an average VO concentration equal to or greater than 500 ppmw at the point of waste origination, the average volumetric flow rate and the density of the hazardous waste stream at the point of waste origination shall be determined.

(IV) The RMR shall be calculated by using the average VO concentration, average volumetric flow rate, and density determined for each individual hazardous waste stream, and the following equation:

$$RMR = \sum_{y=1}^{n} \left[V_y x k_y x \frac{\left(\overline{C_y} - 500\,ppmw\right)}{10^6} \right]$$

Where:

RMR = Required organic mass removal rate, kg/hr.

y = Individual hazardous waste stream "y" that has an average VO concentration equal to or greater than 500 ppmw at the point of waste origination as determined in accordance with the requirements of part (e)1 of this paragraph.

n = Total number of "y" hazardous waste streams treated by process.

V_y = Average volumetric flow rate of hazardous waste stream "y" at the point of waste origination, m^3/hr.

k_y = Density of hazardous waste stream "y," kg/m^3

$\overline{C_y}$ = Average VO concentration of hazardous waste stream "y" at the point of waste origination as determined in accordance with the requirements of part (e)1 of this paragraph, ppmw.

(viii) Procedure to determine the actual organic mass removal rate (MR) for a treated hazardous waste.

(I) The MR shall be determined based on results for a minimum of three consecutive runs. The sampling time for each run shall be 1 hour.

(II) The waste volatile organic mass flow entering the process (E_b) and the waste volatile organic mass flow exiting the process (E_a) shall be

determined in accordance with the requirements of item (v)(IV) of this part.

(III) The MR shall be calculated by using the mass flow rate determined in accordance with the requirements of item (II) of this subpart and the following equation:

$MR = E_b - E_a$

Where:

MR = Actual organic mass removal rate, kg/hr.

E_b = Waste volatile organic mass flow entering process as determined in accordance with the requirements of item (v)(IV) of this part, kg/hr.

E_a = Waste volatile organic mass flow exiting process as determined in accordance with the requirements of item (v)(IV) of this part, kg/hr.

(ix) Procedure to determine the actual organic mass biodegradation rate (MR_{bio}) for a treated hazardous waste.

(I) The MR_{bio} shall be determined based on results for a minimum of three consecutive runs. The sampling time for each run shall be 1 hour.

(II) The waste organic mass flow entering the process (E_b) shall be determined in accordance with the requirements of item (v)(IV) of this part.

(III) The fraction of organic biodegraded (F_{bio}) shall be determined using the procedure specified in 40 CFR Part 63, Appendix C of this chapter.

(IV) The MR_{bio} shall be calculated by using the mass flow rates and fraction of organic biodegraded determined in accordance with the requirements of items (II) and (III) of this subpart, respectively, and the following equation:

$MR_{bio} = E_b \times F_{bio}$

Where:

MR_{bio} = Actual organic mass biodegradation rate, kg/hr.

E_b = Waste organic mass flow entering process as determined in accordance with the requirements of item (v)(IV) of this part, kg/hr.

F_{bio} = Fraction of organic biodegraded as determined in accordance with the requirements of item (III) of this subpart.

3. Procedure to determine the maximum organic vapor pressure of a hazardous waste in a tank.

(i) An owner or operator shall determine the maximum organic vapor pressure for each hazardous waste placed in a tank using Tank Level 1 controls in accordance with the standards specified in part (f)3 of this paragraph.

(ii) An owner or operator shall use either direct measurement as specified in subpart (iii) of this part or knowledge of the waste as specified by subpart 3 (iv) of this part to determine the maximum organic vapor pressure which is representative of the hazardous waste composition stored or treated in the tank.

(iii) Direct measurement to determine the maximum organic vapor pressure of a hazardous waste.

(I) Sampling. A sufficient number of samples shall be collected to be representative of the waste contained in the tank. All samples shall be collected and handled in accordance with written procedures prepared by the owner or operator and documented in a site sampling plan. This plan shall describe the procedure by which representative samples of the hazardous waste are collected such that a minimum loss of organics occurs throughout the sample collection and handling process and by which sample integrity is maintained. A copy of the written sampling plan shall be maintained on-site in the facility operating records. An example of acceptable sample collection and handling procedures may be found in Method 25D in 40 CFR Part 60, Appendix A.

(II) Analysis. Any appropriate one of the following methods may be used to analyze the samples and compute the maximum organic vapor pressure of the hazardous waste:

I. Method 25E in 40 CFR part 60 Appendix A;

II. Methods described in American Petroleum Institute Publication 2517, Third Edition, February 1989, "Evaporative Loss from External Floating-Roof Tanks," (listed in 40 CFR 260.11; Rule 0400-12-01-.01(2)(b)1):

III. Methods obtained from standard reference texts;

IV. ASTM Method 2879-92 (listed in Rule 0400-12-01-.01(2)(b)); and

V. Any other method approved by the Commissioner.

(iv) Use of knowledge to determine the maximum organic vapor pressure of the hazardous waste. Documentation shall be prepared and recorded that presents the information used as the basis for the owner's or operator's knowledge that the maximum organic vapor pressure of the hazardous waste is less than the maximum vapor pressure limit listed in item (f)2(i)(I) of this paragraph for the applicable tank design capacity category. An example of information that may be used is documentation that the hazardous waste is generated by a process for which at other locations it previously has been determined by direct measurement that the waste maximum organic vapor pressure is less than the maximum vapor pressure limit for the appropriate tank design capacity category.

4. Procedure for determining no detectable organic emissions for the purpose of complying with this paragraph:

(i) The test shall be conducted in accordance with the procedures specified in Method 21 of 40 CFR Part 60, Appendix A. Each potential leak interface (i.e., a location where organic vapor leakage could occur) on the cover and associated closure devices shall be checked. Potential leak interfaces that are associated with covers and closure devices include, but are not limited to: The interface of the cover and its foundation mounting; the periphery of any opening on the cover and its associated closure device; and the sealing seat interface on a spring-

loaded pressure relief valve.

(ii) The test shall be performed when the unit contains a hazardous waste having an organic concentration representative of the range of concentrations for the hazardous waste expected to be managed in the unit. During the test, the cover and closure devices shall be secured in the closed position.

(iii) The detection instrument shall meet the performance criteria of Method 21 of 40 CFR Part 60, Appendix A, except the instrument response factor criteria in section 3.1.2(a) of Method 21 shall be for the average composition of the organic constituents in the hazardous waste placed in the waste management unit, not for each individual organic constituent.

(iv) The detection instrument shall be calibrated before use on each day of its use by the procedures specified in Method 21 of 40 CFR part 60, appendix A.

(v) Calibration gases shall be as follows:

(I) Zero air (less than 10 ppmv hydrocarbon in air), and

(II) A mixture of methane or n-hexane and air at a concentration of approximately, but less than, 10,000 ppmv methane or n-hexane.

(vi) The background level shall be determined according to the procedures in Method 21 of 40 CFR Part 60, Appendix A.

(vii) Each potential leak interface shall be checked by traversing the instrument probe around the potential leak interface as close to the interface as possible, as described in Method 21 of 40 CFR Part 60, Appendix A. In the case when the configuration of the cover or closure device prevents a complete traverse of the interface, all accessible portions of the interface shall be sampled. In the case when the configuration of the closure device prevents any sampling at the interface and the device is equipped with an enclosed extension or horn (e.g., some pressure relief devices), the instrument probe inlet shall be placed at approximately the center of the exhaust area to the atmosphere.

(viii) The arithmetic difference between the maximum organic concentration indicated by the instrument and the background level shall be compared with the value of 500 ppmv except when monitoring a seal around a rotating shaft that passes through a cover opening, in which case the comparison shall be as specified in subpart (ix) of this part. If the difference is less than 500 ppmv, then the potential leak interface is determined to operate with no detectable organic emissions.

(ix) For the seals around a rotating shaft that passes through a cover opening, the arithmetic difference between the maximum organic concentration indicated by the instrument and the background level shall be compared with the value of 10,000 ppmw. If the difference is less than 10,000 ppmw, then the potential leak interface is determined to operate with no detectable organic emissions.

(f) Standards: Tanks [40 CFR 265.1085]

1. The provisions of this subparagraph apply to the control of air pollutant emissions from tanks for which part (d)2 of this paragraph references the use of this subparagraph for such air emission control.

2. The owner or operator shall control air pollutant emissions from each tank subject to this subparagraph in accordance with the following requirements, as applicable:

(i) For a tank that manages hazardous waste that meets all of the conditions

specified in items (I) through (III) of this subpart, the owner or operator shall control air pollutant emissions from the tank in accordance with the Tank Level 1 controls specified in part 3 of this subparagraph or the Tank Level 2 controls specified in part 4 of this subparagraph.

(I) The hazardous waste in the tank has a maximum organic vapor pressure which is less than the maximum organic vapor pressure limit for the tank's design capacity category as follows:

I. For a tank design capacity equal to or greater than 151 m^3 (40,000 gal.), the maximum organic vapor pressure limit for the tank is 5.2 kPa (0.75 psi).

II. For a tank design capacity equal to or greater than 75 m^3 (20,000 gal.) but less than 151 m^3 (40,000 gal), the maximum organic vapor pressure limit for the tank is 27.6 kPa (4 psi).

III. For a tank design capacity less than 75 m^3 (20,000 gal.), the maximum organic vapor pressure limit for the tank is 76.6 kPa (11.1 psi).

(II) The hazardous waste in the tank is not heated by the owner or operator to a temperature that is greater than the temperature at which the maximum organic vapor pressure of the hazardous waste is determined for the purpose of complying with item (I) of this subpart.

(III) The hazardous waste in the tank is not treated by the owner or operator using a waste stabilization process, as defined in subparagraph (b) of this paragraph.

(ii) For a tank that manages hazardous waste that does not meet all of the conditions specified in items (i)(I) through (III) of this part, the owner or operator shall control air pollutant emissions from the tank by using Tank Level 2 controls in accordance with the requirements of part 4 of this subparagraph. Examples of tanks required to use Tank Level 2 controls include: A tank used for a waste stabilization process; and a tank for which the hazardous waste in the tank has a maximum organic vapor pressure that is equal to or greater than the maximum organic vapor pressure limit for the tank's design capacity category as specified in item (i)(I) of this part.

3. Owners and operators controlling air pollutant emissions from a tank using Tank Level 1 controls shall meet the requirements specified in subparts (i) through (iv) of this part:

(i) The owner or operator shall determine the maximum organic vapor pressure for a hazardous waste to be managed in the tank using Tank Level 1 controls before the first time the hazardous waste is placed in the tank. The maximum organic vapor pressure shall be determined using the procedures specified in part (e)3 of this paragraph. Thereafter, the owner or operator shall perform a new determination whenever changes to the hazardous waste managed in the tank could potentially cause the maximum organic vapor pressure to increase to a level that is equal to or greater than the maximum organic vapor pressure limit for the tank design capacity category specified in item 2(i)(I) of this subparagraph, as applicable to the tank.

(ii) The tank shall be equipped with a fixed roof designed to meet the following specifications:

(I) The fixed roof and its closure devices shall be designed to form a continuous barrier over the entire surface area of the hazardous waste in

the tank. The fixed roof may be a separate cover installed on the tank (e.g., a removable cover mounted on an open-top tank) or may be an integral part of the tank structural design (e.g., a horizontal cylindrical tank equipped with a hatch).

(II) The fixed roof shall be installed in a manner such that there are no visible cracks, holes, gaps, or other open spaces between roof section joints or between the interface of the roof edge and the tank wall.

(III) Each opening in the fixed roof, and any manifold system associated with the fixed roof, shall be either:

I. Equipped with a closure device designed to operate such that when the closure device is secured in the closed position there are no visible cracks, holes, gaps, or other open spaces in the closure device or between the perimeter of the opening and the closure device; or

II. Connected by a closed-vent system that is vented to a control device. The control device shall remove or destroy organics in the vent stream and shall be operating whenever hazardous waste is managed in the tank, except as provided for in sections A and B of this subitem.

A. During periods it is necessary to provide access to the tank for performing the activities of section B of this subitem, venting of the vapor headspace underneath the fixed roof to the control device is not required, opening of closure devices is allowed, and removal of the fixed roof is allowed. Following completion of the activity, the owner or operator shall promptly secure the closure device in the closed position or reinstall the cover, as applicable, and resume operation of the control device.

B. During periods of routine inspection, maintenance, or other activities needed for normal operations, and for the removal of accumulated sludge or other residues from the bottom of the tank.

(IV) The fixed roof and its closure devices shall be made of suitable materials that will minimize exposure of the hazardous waste to the atmosphere, to the extent practical, and will maintain the integrity of the fixed roof and closure devices throughout their intended service life. Factors to be considered when selecting the materials for and designing the fixed roof and closure devices shall include: Organic vapor permeability, the effects of any contact with the hazardous waste or its vapors managed in the tank; the effects of outdoor exposure to wind, moisture, and sunlight; and the operating practices used for the tank on which the fixed roof is installed.

(iii) Whenever a hazardous waste is in the tank, the fixed roof shall be installed with each closure device secured in the closed position except as follows:

(I) Opening of closure devices or removal of the fixed roof is allowed at the following times:

I. To provide access to the tank for performing routine inspection, maintenance, or other activities needed for normal operations. Examples of such activities include those times when a worker

needs to open a port to sample the liquid in the tank, or when a worker needs to open a hatch to maintain or repair equipment. Following completion of the activity, the owner or operator shall promptly secure the closure device in the closed position or reinstall the cover, as applicable, to the tank.

II. To remove accumulated sludge or other residues from the bottom of tank.

(II) Opening of a spring-loaded pressure-vacuum relief valve, conservation vent, or similar type of pressure relief device which vents to the atmosphere is allowed during normal operations for the purpose of maintaining the tank internal pressure in accordance with the tank design specifications. The device shall be designed to operate with no detectable organic emissions when the device is secured in the closed position. The settings at which the device opens shall be established such that the device remains in the closed position whenever the tank internal pressure is within the internal pressure operating range determined by the owner or operator based on the tank manufacturer recommendations, applicable regulations, fire protection and prevention codes, standard engineering codes and practices, or other requirements for the safe handling of flammable, ignitable, explosive, reactive, or hazardous materials. Examples of normal operating conditions that may require these devices to open are during those times when the tank internal pressure exceeds the internal pressure operating range for the tank as a result of loading operations or diurnal ambient temperature fluctuations.

(III) Opening of a safety device, as defined in subparagraph (b) of this paragraph, is allowed at any time conditions require doing so to avoid an unsafe condition.

(iv) The owner or operator shall inspect the air emission control equipment in accordance with the following requirements.

(I) The fixed roof and its closure devices shall be visually inspected by the owner or operator to check for defects that could result in air pollutant emissions. Defects include, but are not limited to, visible cracks, holes, or gaps in the roof sections or between the roof and the tank wall; broken, cracked, or otherwise damaged seals or gaskets on closure devices; and broken or missing hatches, access covers, caps, or other closure devices.

(II) The owner or operator shall perform an initial inspection of the fixed roof and its closure devices on or before the date that the tank becomes subject to this subparagraph. Thereafter, the owner or operator shall perform the inspections at least once every year except under the special conditions provided for in part 12 of this subparagraph.

(III) In the event that a defect is detected, the owner or operator shall repair the defect in accordance with the requirements of part 11 of this subparagraph.

(IV) The owner or operator shall maintain a record of the inspection in accordance with the requirements specified in part (k)2 of this paragraph.

4. Owners and operators controlling air pollutant emissions from a tank using Tank Level 2 controls shall use one of the following tanks:

(i) A fixed-roof tank equipped with an internal floating roof in accordance with the requirements specified in part 5 of this subparagraph;

(ii) A tank equipped with an external floating roof in accordance with the requirements specified in part 6 of this subparagraph;

(iii) A tank vented through a closed-vent system to a control device in accordance with the requirements specified in part 7 of this subparagraph;

(iv) A pressure tank designed and operated in accordance with the requirements specified in part 8 of this subparagraph; or

(v) A tank located inside an enclosure that is vented through a closed-vent system to an enclosed combustion control device in accordance with the requirements specified in part 9 of this subparagraph.

5. The owner or operator who controls air pollutant emissions from a tank using a fixed-roof with an internal floating roof shall meet the requirements specified in subpart (i) through (iii) of this part.

(i) The tank shall be equipped with a fixed roof and an internal floating roof in accordance with the following requirements:

(I) The internal floating roof shall be designed to float on the liquid surface except when the floating roof must be supported by the leg supports.

(II) The internal floating roof shall be equipped with a continuous seal between the wall of the tank and the floating roof edge that meets either of the following requirements:

I. A single continuous seal that is either a liquid-mounted seal or a metallic shoe seal, as defined in subparagraph (b) of this paragraph; or

II. Two continuous seals mounted one above the other. The lower seal may be a vapor-mounted seal.

(III) The internal floating roof shall meet the following specifications:

I. Each opening in a noncontact internal floating roof except for automatic bleeder vents (vacuum breaker vents) and the rim space vents is to provide a projection below the liquid surface.

II. Each opening in the internal floating roof shall be equipped with a gasketed cover or a gasketed lid except for leg sleeves, automatic bleeder vents, rim space vents, column wells, ladder wells, sample wells, and stub drains.

III. Each penetration of the internal floating roof for the purpose of sampling shall have a slit fabric cover that covers at least 90 percent of the opening.

IV. Each automatic bleeder vent and rim space vent shall be gasketed.

V. Each penetration of the internal floating roof that allows for passage of a ladder shall have a gasketed sliding cover.

VI. Each penetration of the internal floating roof that allows for

passage of a column supporting the fixed roof shall have a flexible fabric sleeve seal or a gasketed sliding cover.

(ii) The owner or operator shall operate the tank in accordance with the following requirements:

(I) When the floating roof is resting on the leg supports, the process of filling, emptying, or refilling shall be continuous and shall be completed as soon as practical.

(II) Automatic bleeder vents are to be set closed at all times when the roof is floating, except when the roof is being floated off or is being landed on the leg supports.

(III) Prior to filling the tank, each cover, access hatch, gauge float well or lid on any opening in the internal floating roof shall be bolted or fastened closed (i.e., no visible gaps). Rim space vents are to be set to open only when the internal floating roof is not floating or when the pressure beneath the rim exceeds the manufacturer's recommended setting.

(iii) The owner or operator shall inspect the internal floating roof in accordance with the procedures specified as follows:

(I) The floating roof and its closure devices shall be visually inspected by the owner or operator to check for defects that could result in air pollutant emissions. Defects include, but are not limited to: The internal floating roof is not floating on the surface of the liquid inside the tank; liquid has accumulated on top of the internal floating roof; any portion of the roof seals have detached from the roof rim; holes, tears, or other openings are visible in the seal fabric; the gaskets no longer close off the hazardous waste surface from the atmosphere; or the slotted membrane has more than 10 percent open area.

(II) The owner or operator shall inspect the internal floating roof components as follows except as provided in item (III) of this subpart:

I. Visually inspect the internal floating roof components through openings on the fixed-roof (e.g., manholes and roof hatches) at least once every 12 months after initial fill, and

II. Visually inspect the internal floating roof, primary seal, secondary seal (if one is in service), gaskets, slotted membranes, and sleeve seals (if any) each time the tank is emptied and degassed and at least every 10 years.

(III) As an alternative to performing the inspections specified in item (II) of this subpart for an internal floating roof equipped with two continuous seals mounted one above the other, the owner or operator may visually inspect the internal floating roof, primary and secondary seals, gaskets, slotted membranes, and sleeve seals (if any) each time the tank is emptied and degassed and at least every 5 years.

(IV) Prior to each inspection required by item (II) or (III) of this subpart, the owner or operator shall notify the Commissioner in advance of each inspection to provide the Commissioner with the opportunity to have an observer present during the inspection. The owner or operator shall notify the Commissioner of the date and location of the inspection as follows:

I. Prior to each visual inspection of an internal floating roof in a tank that has been emptied and degassed, written notification shall be prepared and sent by the owner or operator so that it is received by the Commissioner at least 30 calendar days before refilling the tank except when an inspection is not planned as provided for in subitem II of this item.

II. When a visual inspection is not planned and the owner or operator could not have known about the inspection 30 calendar days before refilling the tank, the owner or operator shall notify the Commissioner as soon as possible, but no later than 7 calendar days before refilling of the tank. This notification may be made by telephone and immediately followed by a written explanation for why the inspection is unplanned. Alternatively, written notification, including the explanation for the unplanned inspection, may be sent so that it is received by the Commissioner at least 7 calendar days before refilling the tank.

(V) In the event that a defect is detected, the owner or operator shall repair the defect in accordance with the requirements of part 11 of this subparagraph.

(VI) The owner or operator shall maintain a record of the inspection in accordance with the requirements specified in part (k)2 of this paragraph.

(iv) Safety devices, as defined in subparagraph (b) of this paragraph, may be installed and operated as necessary on any tank complying with the requirements of this part.

6. The owner or operator who controls air pollutant emissions from a tank using an external floating roof shall meet the requirements specified in subparts (iii) of this part.

(i) The owner or operator shall design the external floating roof in accordance with the following requirements:

(I) The external floating roof shall be designed to float on the liquid surface except when the floating roof must be supported by the leg supports.

(II) The floating roof shall be equipped with two continuous seals, one above the other, between the wall of the tank and the roof edge. The lower seal is referred to as the primary seal, and the upper seal is referred to as the secondary seal.

I. The primary seal shall be a liquid-mounted seal or a metallic shoe seal, as defined in subparagraph (b) of this paragraph. The total area of the gaps between the tank wall and the primary seal shall not exceed 212 square centimeters (cm^2) per meter of tank diameter, and the width of any portion of these gaps shall not exceed 3.8 centimeters (cm). If a metallic shoe seal is used for the primary seal, the metallic shoe seal shall be designed so that one end extends into the liquid in the tank and the other end extends a vertical distance of at least 61 centimeters above the liquid surface.

II. The secondary seal shall be mounted above the primary seal and cover the annular space between the floating roof and the wall of the tank. The total area of the gaps between the tank wall and the secondary seal shall not exceed 21.2 square centimeters (cm^2) per meter of tank diameter, and the width of

any portion of these gaps shall not exceed 1.3 centimeters (cm).

(III) The external floating roof shall meet the following specifications:

I. Except for automatic bleeder vents (vacuum breaker vents) and rim space vents, each opening in a noncontact external floating roof shall provide a projection below the liquid surface.

II. Except for automatic bleeder vents, rim space vents, roof drains, and leg sleeves, each opening in the roof shall be equipped with a gasketed cover, seal, or lid.

III. Each access hatch and each gauge float well shall be equipped with a cover designed to be bolted or fastened when the cover is secured in the closed position.

IV. Each automatic bleeder vent and each rim space vent shall be equipped with a gasket.

V. Each roof drain that empties into the liquid managed in the tank shall be equipped with a slotted membrane fabric cover that covers at least 90 percent of the area of the opening.

VI. Each unslotted and slotted guide pole well shall be equipped with a gasketed sliding cover or a flexible fabric sleeve seal.

VII. Each unslotted guide pole shall be equipped with a gasketed cap on the end of the pole.

VIII. Each slotted guide pole shall be equipped with a gasketed float or other device which closes off the liquid surface from the atmosphere.

IX. Each gauge hatch and each sample well shall be equipped with a gasketed cover.

(ii) The owner or operator shall operate the tank in accordance with the following requirements:

(I) When the floating roof is resting on the leg supports, the process of filling, emptying, or refilling shall be continuous and shall be completed as soon as practical.

(II) Except for automatic bleeder vents, rim space vents, roof drains, and leg sleeves, each opening in the roof shall be secured and maintained in a closed position at all times except when the closure device must be open for access.

(III) Covers on each access hatch and each gauge float well shall be bolted or fastened when secured in the closed position.

(IV) Automatic bleeder vents shall be set closed at all times when the roof is floating, except when the roof is being floated off or is being landed on the leg supports.

(V) Rim space vents shall be set to open only at those times that the roof is being floated off the roof leg supports or when the pressure beneath the rim seal exceeds the manufacturer's recommended setting.

(VI) The cap on the end of each unslotted guide pole shall be secured in the closed position at all times except when measuring the level or collecting samples of the liquid in the tank.

(VII) The cover on each gauge hatch or sample well shall be secured in the closed position at all times except when the hatch or well must be opened for access.

(VIII) Both the primary seal and the secondary seal shall completely cover the annular space between the external floating roof and the wall of the tank in a continuous fashion except during inspections.

(iii) The owner or operator shall inspect the external floating roof in accordance with the procedures specified as follows:

(I) The owner or operator shall measure the external floating roof seal gaps in accordance with the following requirements:

I. The owner or operator shall perform measurements of gaps between the tank wall and the primary seal within 60 calendar days after initial operation of the tank following installation of the floating roof and, thereafter, at least once every 5 years.

II. The owner or operator shall perform measurements of gaps between the tank wall and the secondary seal within 60 calendar days after initial operation of the tank following installation of the floating roof and, thereafter, at least once every year.

III. If a tank ceases to hold hazardous waste for a period of 1 year or more, subsequent introduction of hazardous waste into the tank shall be considered an initial operation for the purposes of subitems I and II of this item.

IV. The owner or operator shall determine the total surface area of gaps in the primary seal and in the secondary seal individually using the following procedure:

A. The seal gap measurements shall be performed at one or more floating roof levels when the roof is floating off the roof supports.

B. Seal gaps, if any, shall be measured around the entire perimeter of the floating roof in each place where a 0.32-centimeter (cm) diameter uniform probe passes freely (without forcing or binding against the seal) between the seal and the wall of the tank and measure the circumferential distance of each such location.

C. For a seal gap measured under this subpart, the gap surface area shall be determined by using probes of various widths to measure accurately the actual distance from the tank wall to the seal and multiplying each such width by its respective circumferential distance.

D. The total gap area shall be calculated by adding the gap surface areas determined for each identified gap location for the primary seal and the secondary seal individually, and then dividing the sum for each seal type by the nominal diameter of the tank. These total gap areas for

the primary seal and secondary seal are then compared to the respective standards for the seal type as specified in item (i)(II) of this part.

V. In the event that the seal gap measurements do not conform to the specifications in item (i)(II) of this part, the owner or operator shall repair the defect in accordance with the requirements of part 11 of this subparagraph.

VI. The owner or operator shall maintain a record of the inspection in accordance with the requirements specified in part (k)2 of this paragraph.

(II) The owner or operator shall visually inspect the external floating roof in accordance with the following requirements:

I. The floating roof and its closure devices shall be visually inspected by the owner or operator to check for defects that could result in air pollutant emissions. Defects include, but are not limited to: Holes, tears, or other openings in the rim seal or seal fabric of the floating roof; a rim seal detached from the floating roof; all or a portion of the floating roof deck being submerged below the surface of the liquid in the tank; broken, cracked, or otherwise damaged seals or gaskets on closure devices; and broken or missing hatches, access covers, caps, or other closure devices.

II. The owner or operator shall perform an initial inspection of the external floating roof and its closure devices on or before the date that the tank becomes subject to this subparagraph. Thereafter, the owner or operator shall perform the inspections at least once every year except for the special conditions provided for in part 12 of this subparagraph.

III. In the event that a defect is detected, the owner or operator shall repair the defect in accordance with the requirements of part 11 of this subparagraph.

IV. The owner or operator shall maintain a record of the inspection in accordance with the requirements specified in part (k)2 of this paragraph.

(III) Prior to each inspection required by item (I) or (II) of this subpart, the owner or operator shall notify the Commissioner in advance of each inspection to provide the Commissioner with the opportunity to have an observer present during the inspection. The owner or operator shall notify the Commissioner of the date and location of the inspection as follows:

I. Prior to each inspection to measure external floating roof seal gaps as required under item (I) of this subpart, written notification shall be prepared and sent by the owner or operator so that it is received by the Commissioner at least 30 calendar days before the date the measurements are scheduled to be performed.

II. Prior to each visual inspection of an external floating roof in a tank that has been emptied and degassed, written notification shall be prepared and sent by the owner or operator so that it is received by the Commissioner at least 30 calendar days before

refilling the tank except when an inspection is not planned as provided for in subitem III of this item.

III. When a visual inspection is not planned and the owner o operator could not have known about the inspection 30 calenda days before refilling the tank, the owner or operator shall notify the Commissioner as soon as possible, but no later than 7 calendar days before refilling of the tank. This notification may be made by telephone and immediately followed by a written explanation for why the inspection is unplanned. Alternatively written notification, including the explanation for the unplanned inspection, may be sent so that it is received by the Commissioner at least 7 calendar days before refilling the tank.

(iv) Safety devices, as defined in subparagraph (b) of this paragraph, may be installed and operated as necessary on any tank complying with the requirements of this part.

7. The owner or operator who controls air pollutant emissions from a tank by venting the tank to a control device shall meet the requirements specified in subparts (i) through (iii) of this part.

(i) The tank shall be covered by a fixed roof and vented directly through a closed vent system to a control device in accordance with the following requirements:

(I) The fixed roof and its closure devices shall be designed to form continuous barrier over the entire surface area of the liquid in the tank.

(II) Each opening in the fixed roof not vented to the control device shall b equipped with a closure device. If the pressure in the vapor headspac underneath the fixed roof is less than atmospheric pressure when th control device is operating, the closure devices shall be designed t operate such that when the closure device is secured in the close position there are no visible cracks, holes, gaps, or other open spaces i the closure device or between the perimeter of the cover opening an the closure device. If the pressure in the vapor headspace underneat the fixed roof is equal to or greater than atmospheric pressure when th control device is operating, the closure device shall be designed t operate with no detectable organic emissions.

(III) The fixed roof and its closure devices shall be made of suitable material that will minimize exposure of the hazardous waste to the atmosphere, t the extent practical, and will maintain the integrity of the fixed roof an closure devices throughout their intended service life. Factors to b considered when selecting the materials for and designing the fixed roo and closure devices shall include: Organic vapor permeability, the effect of any contact with the liquid and its vapor managed in the tank; th effects of outdoor exposure to wind, moisture, and sunlight; and th operating practices used for the tank on which the fixed roof is installed.

(IV) The closed-vent system and control device shall be designed an operated in accordance with the requirements of subparagraph (i) of th paragraph.

(ii) Whenever a hazardous waste is in the tank, the fixed roof shall be installed wi each closure device secured in the closed position and the vapor headspac underneath the fixed roof vented to the control device except as follows:

(I) Venting to the control device is not required, and opening of closu

devices or removal of the fixed roof is allowed at the following times:

I. To provide access to the tank for performing routine inspection, maintenance, or other activities needed for normal operations. Examples of such activities include those times when a worker needs to open a port to sample liquid in the tank, or when a worker needs to open a hatch to maintain or repair equipment. Following completion of the activity, the owner or operator shall promptly secure the closure device in the closed position or reinstall the cover, as applicable, to the tank.

II. To remove accumulated sludge or other residues from the bottom of a tank.

(II) Opening of a safety device, as defined in subparagraph (b) of this paragraph, is allowed at any time conditions require doing so to avoid an unsafe condition.

(iii) The owner or operator shall inspect and monitor the air emission control equipment in accordance with the following procedures:

(I) The fixed roof and its closure devices shall be visually inspected by the owner or operator to check for defects that could result in air pollutant emissions. Defects include, but are not limited to, visible cracks, holes, or gaps in the roof sections or between the roof and the tank wall; broken, cracked, or otherwise damaged seals or gaskets on closure devices; and broken or missing hatches, access covers, caps, or other closure devices.

(II) The closed-vent system and control device shall be inspected and monitored by the owner or operator in accordance with the procedures specified in subparagraph (i) of this paragraph.

(III) The owner or operator shall perform an initial inspection of the air emission control equipment on or before the date that the tank becomes subject to this subparagraph. Thereafter, the owner or operator shall perform the inspections at least once every year except for the special conditions provided for in part 12 of this subparagraph.

(IV) In the event that a defect is detected, the owner or operator shall repair the defect in accordance with the requirements of part 11 of this subparagraph.

(V) The owner or operator shall maintain a record of the inspection in accordance with the requirements specified in part (k)2 of this paragraph.

8. The owner or operator who controls air pollutant emissions by using a pressure tank shall meet the following requirements.

(i) The tank shall be designed not to vent to the atmosphere as a result of compression of the vapor headspace in the tank during filling of the tank to its design capacity.

(ii) All tank openings shall be equipped with closure devices designed to operate with no detectable organic emissions as determined using the procedure specified in part (e)4 of this paragraph.

(iii) Whenever a hazardous waste is in the tank, the tank shall be operated as a closed system that does not vent to the atmosphere except under either of the

following conditions as specified in item (I) or (II) of this subpart:

(I) At those times when opening of a safety device, as defined in subparagraph (b) of this paragraph, is required to avoid an unsafe condition.

(II) At those times when purging of inerts from the tank is required and the purge stream is routed to a closed-vent system and control device designed and operated in accordance with the requirements of subparagraph (i) of this paragraph.

9. The owner or operator who controls air pollutant emissions by using an enclosure vented through a closed-vent system to an enclosed combustion control device shall meet the requirements specified in subparts (i) through (iv) of this part.

(i) The tank shall be located inside an enclosure. The enclosure shall be designed and operated in accordance with the criteria for a permanent total enclosure as specified in "Procedure T--Criteria for and Verification of a Permanent or Temporary Total Enclosure" under 40 CFR 52.741, Appendix B. The enclosure may have permanent or temporary openings to allow worker access; passage of material into or out of the enclosure by conveyor, vehicles, or other mechanical means; entry of permanent mechanical or electrical equipment; or direct airflow into the enclosure. The owner or operator shall perform the verification procedure for the enclosure as specified in Section 5.0 to "Procedure T--Criteria for and Verification of a Permanent or Temporary Total Enclosure" initially when the enclosure is first installed and, thereafter, annually.

(ii) The enclosure shall be vented through a closed-vent system to an enclosed combustion control device that is designed and operated in accordance with the standards for either a vapor incinerator, boiler, or process heater specified in subparagraph (i) of this paragraph.

(iii) Safety devices, as defined in subparagraph (b) of this paragraph, may be installed and operated as necessary on any enclosure, closed- vent system, or control device used to comply with the requirements of subparts (i) and (ii) of this part.

(iv) The owner or operator shall inspect and monitor the closed-vent system and control device as specified in subparagraph (i) of this paragraph.

10. The owner or operator shall transfer hazardous waste to a tank subject to this subparagraph in accordance with the following requirements:

(i) Transfer of hazardous waste, except as provided in subpart (ii) of this part, to the tank from another tank subject to this subparagraph or from a surface impoundment subject to subparagraph (g) of this paragraph shall be conducted using continuous hard-piping or another closed system that does not allow exposure of the hazardous waste to the atmosphere. For the purpose of complying with this provision, an individual drain system is considered to be a closed system when it meets the requirements of 40 CFR Part 63, subpart RR--National Emission Standards for Individual Drain Systems.

(ii) The requirements of subpart (i) of this part do not apply when transferring a hazardous waste to the tank under any of the following conditions:

(I) The hazardous waste meets the average VO concentration conditions specified in subpart (d)3(i) of this paragraph at the point of waste origination.

(II) The hazardous waste has been treated by an organic destruction or removal process to meet the requirements in subpart (d)3(ii) of this paragraph.

(III) The hazardous waste meets the requirements of subpart (d)3(iv) of this paragraph.

11. The owner or operator shall repair each defect detected during an inspection performed in accordance with the requirements of subparts 3(iv), 5(iii), 6(iii), or 7(iii) of this subparagraph as follows:

(i) The owner or operator shall make first efforts at repair of the defect no later than 5 calendar days after detection, and repair shall be completed as soon as possible but no later than 45 calendar days after detection except as provided in subpart (ii) of this part.

(ii) Repair of a defect may be delayed beyond 45 calendar days if the owner or operator determines that repair of the defect requires emptying or temporary removal from service of the tank and no alternative tank capacity is available at the site to accept the hazardous waste normally managed in the tank. In this case, the owner or operator shall repair the defect the next time the process or unit that is generating the hazardous waste managed in the tank stops operation. Repair of the defect shall be completed before the process or unit resumes operation.

12. Following the initial inspection and monitoring of the cover as required by the applicable provisions of this subpart, subsequent inspection and monitoring may be performed at intervals longer than 1 year under the following special conditions:

(i) In the case when inspecting or monitoring the cover would expose a worker to dangerous, hazardous, or other unsafe conditions, then the owner or operator may designate a cover as an "unsafe to inspect and monitor cover" and comply with all of the following requirements:

(I) Prepare a written explanation for the cover stating the reasons why the cover is unsafe to visually inspect or to monitor, if required.

(II) Develop and implement a written plan and schedule to inspect and monitor the cover, using the procedures specified in the applicable subparagraph of this paragraph, as frequently as practicable during those times when a worker can safely access the cover.

(ii) In the case when a tank is buried partially or entirely underground, an owner or operator is required to inspect and monitor, as required by the applicable provisions of this subparagraph, only those portions of the tank cover and those connections to the tank (e.g., fill ports, access hatches, gauge wells, etc.) that are located on or above the ground surface.

(g) Standards: Surface Impoundments [40 CFR 265.1086]

1. The provisions of this subparagraph apply to the control of air pollutant emissions from surface impoundments for which part (d)2 of this paragraph references the use of this subparagraph for such air emission control.

2. The owner or operator shall control air pollutant emissions from the surface impoundment by installing and operating either of the following:

(i) A floating membrane cover in accordance with the provisions specified in part 3 of this subparagraph; or

(ii) A cover that is vented through a closed-vent system to a control device in accordance with the requirements specified in part 4 of this subparagraph.

3. The owner or operator who controls air pollutant emissions from a surface impoundment using a floating membrane cover shall meet the requirements specified in subparts (i) through (iii) of this part.

(i) The surface impoundment shall be equipped with a floating membrane cover designed to meet the following specifications:

(I) The floating membrane cover shall be designed to float on the liquid surface during normal operations and form a continuous barrier over the entire surface area of the liquid.

(II) The cover shall be fabricated from a synthetic membrane material that is either:

I. High density polyethylene (HDPE) with a thickness no less than 2.5 millimeters (mm); or

II. A material or a composite of different materials determined to have both organic permeability properties that are equivalent to those of the material listed in subitem I of this item and chemical and physical properties that maintain the material integrity for the intended service life of the material.

(III) The cover shall be installed in a manner such that there are no visible cracks, holes, gaps, or other open spaces between cover section seams or between the interface of the cover edge and its foundation mountings.

(IV) Except as provided for in item (V) of this subpart, each opening in the floating membrane cover shall be equipped with a closure device designed to operate such that when the closure device is secured in the closed position there are no visible cracks, holes, gaps, or other open spaces in the closure device or between the perimeter of the cover opening and the closure device.

(V) The floating membrane cover may be equipped with one or more emergency cover drains for removal of stormwater. Each emergency cover drain shall be equipped with a slotted membrane fabric cover that covers at least 90 percent of the area of the opening or a flexible fabric sleeve seal.

(VI) The closure devices shall be made of suitable materials that will minimize exposure of the hazardous waste to the atmosphere, to the extent practical, and will maintain the integrity of the closure devices throughout their intended service life. Factors to be considered when selecting the materials of construction and designing the cover and closure devices shall include: Organic vapor permeability; the effects of any contact with the liquid and its vapor managed in the surface impoundment; the effects of outdoor exposure to wind, moisture, and sunlight; and the operating practices used for the surface impoundment on which the floating membrane cover is installed.

(ii) Whenever a hazardous waste is in the surface impoundment, the floating membrane cover shall float on the liquid and each closure device shall be secured in the closed position except as follows:

(I) Opening of closure devices or removal of the cover is allowed at the following times:

I. To provide access to the surface impoundment for performing routine inspection, maintenance, or other activities needed for normal operations. Examples of such activities include those times when a worker needs to open a port to sample the liquid in the surface impoundment, or when a worker needs to open a hatch to maintain or repair equipment. Following completion of the activity, the owner or operator shall promptly replace the cover and secure the closure device in the closed position, as applicable.

II. To remove accumulated sludge or other residues from the bottom of surface impoundment.

(II) Opening of a safety device, as defined in subparagraph (b) of this paragraph, is allowed at any time conditions require doing so to avoid an unsafe condition.

(iii) The owner or operator shall inspect the floating membrane cover in accordance with the following procedures:

(I) The floating membrane cover and its closure devices shall be visually inspected by the owner or operator to check for defects that could result in air pollutant emissions. Defects include, but are not limited to, visible cracks, holes, or gaps in the cover section seams or between the interface of the cover edge and its foundation mountings; broken, cracked, or otherwise damaged seals or gaskets on closure devices; and broken or missing hatches, access covers, caps, or other closure devices.

(II) The owner or operator shall perform an initial inspection of the floating membrane cover and its closure devices on or before the date that the surface impoundment becomes subject to this subparagraph. Thereafter, the owner or operator shall perform the inspections at least once every year except for the special conditions provided for in part 7 of this subparagraph.

(III) In the event that a defect is detected, the owner or operator shall repair the defect in accordance with the requirements of part 6 of this subparagraph.

(IV) The owner or operator shall maintain a record of the inspection in accordance with the requirements specified in part (k)3 of this paragraph.

4. The owner or operator who controls air pollutant emissions from a surface impoundment using a cover vented to a control device shall meet the requirements specified in subparts (i) through (iii) of this part.

(i) The surface impoundment shall be covered by a cover and vented directly through a closed-vent system to a control device in accordance with the following requirements:

(I) The cover and its closure devices shall be designed to form a continuous barrier over the entire surface area of the liquid in the surface impoundment.

(II) Each opening in the cover not vented to the control device shall be

equipped with a closure device. If the pressure in the vapor headspace underneath the cover is less than atmospheric pressure when the control device is operating, the closure devices shall be designed to operate such that when the closure device is secured in the closed position there are no visible cracks, holes, gaps, or other open spaces in the closure device or between the perimeter of the cover opening and the closure device. If the pressure in the vapor headspace underneath the cover is equal to or greater than atmospheric pressure when the control device is operating, the closure device shall be designed to operate with no detectable organic emissions using the procedure specified in part (e)4 of this paragraph.

(III) The cover and its closure devices shall be made of suitable materials that will minimize exposure of the hazardous waste to the atmosphere, to the extent practical, and will maintain the integrity of the cover and closure devices throughout their intended service life. Factors to be considered when selecting the materials of construction and designing the cover and closure devices shall include: Organic vapor permeability; the effects of any contact with the liquid or its vapors managed in the surface impoundment; the effects of outdoor exposure to wind, moisture, and sunlight; and the operating practices used for the surface impoundment on which the cover is installed.

(IV) The closed-vent system and control device shall be designed and operated in accordance with the requirements of subparagraph (i) of this paragraph.

(ii) Whenever a hazardous waste is in the surface impoundment, the cover shall be installed with each closure device secured in the closed position and the vapor headspace underneath the cover vented to the control device except as follows:

(I) Venting to the control device is not required, and opening of closure devices or removal of the cover is allowed at the following times:

I. To provide access to the surface impoundment for performing routine inspection, maintenance, or other activities needed for normal operations. Examples of such activities include those times when a worker needs to open a port to sample liquid in the surface impoundment, or when a worker needs to open a hatch to maintain or repair equipment. Following completion of the activity, the owner or operator shall promptly secure the closure device in the closed position or reinstall the cover, as applicable, to the surface impoundment.

II. To remove accumulated sludge or other residues from the bottom of the surface impoundment.

(II) Opening of a safety device, as defined in subparagraph (b) of this paragraph, is allowed at any time conditions require doing so to avoid an unsafe condition.

(iii) The owner or operator shall inspect and monitor the air emission control equipment in accordance with the following procedures:

(I) The surface impoundment cover and its closure devices shall be visually inspected by the owner or operator to check for defects that could result in air pollutant emissions. Defects include, but are not limited to, visible cracks, holes, or gaps in the cover section seams or between the interface of the cover edge and its foundation mountings; broken,

cracked, or otherwise damaged seals or gaskets on closure devices; and broken or missing hatches, access covers, caps, or other closure devices.

(II) The closed-vent system and control device shall be inspected and monitored by the owner or operator in accordance with the procedures specified in subparagraph (i) of this paragraph.

(III) The owner or operator shall perform an initial inspection of the air emission control equipment on or before the date that the surface impoundment becomes subject to this subparagraph. Thereafter, the owner or operator shall perform the inspections at least once every year except for the special conditions provided for in part 7 of this subparagraph.

(IV) In the event that a defect is detected, the owner or operator shall repair the defect in accordance with the requirements of part 6 of this subparagraph.

(V) The owner or operator shall maintain a record of the inspection in accordance with the requirements specified in part (k)3 of this paragraph.

5. The owner or operator shall transfer hazardous waste to a surface impoundment subject to this subparagraph in accordance with the following requirements:

(i) Transfer of hazardous waste, except as provided in subpart (ii) of this part, to the surface impoundment from another surface impoundment subject to this subparagraph or from a tank subject to subparagraph (f) of this paragraph shall be conducted using continuous hard-piping or another closed system that does not allow exposure of the waste to the atmosphere. For the purpose of complying with this provision, an individual drain system is considered to be a closed system when it meets the requirements of 40 CFR Part 63, subpart RR-- National Emission Standards for Individual Drain Systems.

(ii) The requirements of subpart (i) of this part do not apply when transferring a hazardous waste to the surface impoundment under either of the following conditions:

(I) The hazardous waste meets the average VO concentration conditions specified in subpart (d)3(i) of this paragraph at the point of waste origination.

(II) The hazardous waste has been treated by an organic destruction or removal process to meet the requirements in subpart (d)3(ii) of this paragraph.

(III) The hazardous waste meets the requirements of subpart (d)3(iv) of this paragraph.

6. The owner or operator shall repair each defect detected during an inspection performed in accordance with the requirements of subpart 3(iii) or 4(iii) of this subparagraph as follows:

(i) The owner or operator shall make first efforts at repair of the defect no later than 5 calendar days after detection, and repair shall be completed as soon as possible but no later than 45 calendar days after detection except as provided in subpart (ii) of this part.

(ii) Repair of a defect may be delayed beyond 45 calendar days if the owner or

operator determines that repair of the defect requires emptying or temporary removal from service of the surface impoundment and no alternative capacity is available at the site to accept the hazardous waste normally managed in the surface impoundment. In this case, the owner or operator shall repair the defect the next time the process or unit that is generating the hazardous waste managed in the tank stops operation. Repair of the defect shall be completed before the process or unit resumes operation.

7. Following the initial inspection and monitoring of the cover as required by the applicable provisions of this subpart, subsequent inspection and monitoring may be performed at intervals longer than 1 year in the case when inspecting or monitoring the cover would expose a worker to dangerous, hazardous, or other unsafe conditions. In this case, the owner or operator may designate the cover as an "unsafe to inspect and monitor cover" and comply with all of the following requirements:

   (i) Prepare a written explanation for the cover stating the reasons why the cover is unsafe to visually inspect or to monitor, if required.

   (ii) Develop and implement a written plan and schedule to inspect and monitor the cover using the procedures specified in the applicable subparagraph of this paragraph as frequently as practicable during those times when a worker can safely access the cover.

(h) Standards: Containers [40 CFR 265.1087]

1. The provisions of this subparagraph apply to the control of air pollutant emissions from containers for which part (d)2 of this paragraph references the use of this subparagraph for such air emission control.

2. General requirements.

   (i) The owner or operator shall control air pollutant emissions from each container subject to this subparagraph in accordance with the following requirements, as applicable to the container, except when the special provisions for waste stabilization processes specified in subpart (ii) of this part apply to the container.

      (I) For a container having a design capacity greater than 0.1 m^3 (26 gal.) and less than or equal to 0.46 m^3 (119 gal.), the owner or operator shall control air pollutant emissions from the container in accordance with the Container Level 1 standards specified in part 3 of this subparagraph.

      (II) For a container having a design capacity greater than 0.46 m^3 (119 gal.) that is not in light material service, the owner or operator shall control air pollutant emissions from the container in accordance with the Container Level 1 standards specified in part 3 of this subparagraph.

      (III) For a container having a design capacity greater than 0.46 m^3 (119 gal.) that is in light material service, the owner or operator shall control air pollutant emissions from the container in accordance with the Container Level 2 standards specified in part 4 of this subparagraph.

   (ii) When a container having a design capacity greater than 0.1 m^3 (26 gal.) is used for treatment of a hazardous waste by a waste stabilization process, the owner or operator shall control air pollutant emissions from the container in accordance with the Container Level 3 standards specified in part 5 of this subparagraph at those times during the waste stabilization process when the hazardous waste in the container is exposed to the atmosphere.

3. Container Level 1 standards.

(i) A container using Container Level 1 controls is one of the following:

(I) A container that meets the applicable U.S. Department of Transportation (DOT) regulations on packaging hazardous materials for transportation as specified in part 6 of this subparagraph.

(II) 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 (e.g., a lid on a drum or a suitably secured tarp on a roll-off box) or may be an integral part of the container structural design (e.g., a "portable tank" or bulk cargo container equipped with a screw-type cap).

(III) An open-top container in which an organic-vapor suppressing barrier is placed on or over the hazardous waste in the container such that no hazardous waste is exposed to the atmosphere. One example of such a barrier is application of a suitable organic-vapor suppressing foam.

(ii) A container used to meet the requirements of item (i)(II) or (III) of this part shall be equipped with covers and closure devices, as applicable to the container, that are composed of suitable materials to minimize exposure of the hazardous waste to the atmosphere and to maintain the equipment integrity for as long as it is in service. Factors to be considered in selecting the materials of construction and designing the cover and closure devices shall include: Organic vapor permeability, the effects of contact with the hazardous waste or its vapor managed in the container; the effects of outdoor exposure of the closure device or cover material to wind, moisture, and sunlight; and the operating practices for which the container is intended to be used.

(iii) Whenever a hazardous waste is in a container using Container Level 1 controls, the owner or operator shall install all covers and closure devices for the container, as applicable to the container, and secure and maintain each closure device in the closed position except as follows:

(I) Opening of a closure device or cover is allowed for the purpose of adding hazardous waste or other material to the container as follows:

I. In the case when the container is filled to the intended final level in one continuous operation, the owner or operator shall promptly secure the closure devices in the closed position and install the covers, as applicable to the container, upon conclusion of the filling operation.

II. In the case when discrete quantities or batches of material intermittently are added to the container over a period of time, the owner or operator shall promptly secure the closure devices in the closed position and install covers, as applicable to the container, upon either the container being filled to the intended final level; the completion of a batch loading after which no additional material will be added to the container within 15 minutes; the person performing the loading operation leaving the immediate vicinity of the container; or the shutdown of the process generating the material being added to the container, whichever condition occurs first.

(II) Opening of a closure device or cover is allowed for the purpose of

removing hazardous waste from the container as follows:

I. For the purpose of meeting the requirements of this subparagraph, an empty container as defined in Rule 0400-12-01-.02(1)(g)2 may be open to the atmosphere at any time (i.e., covers and closure devices are not required to be secured in the closed position on an empty container).

II. In the case when discrete quantities or batches of material are removed from the container but the container does not meet the conditions to be an empty container as defined in Rule 0400-12-01-.02(1)(g)2, the owner or operator shall promptly secure the closure devices in the closed position and install covers, as applicable to the container, upon the completion of a batch removal after which no additional material will be removed from the container within 15 minutes or the person performing the unloading operation leaves the immediate vicinity of the container, whichever condition occurs first.

(III) Opening of a closure device or cover is allowed when access inside the container is needed to perform routine activities other than transfer of hazardous waste. Examples of such activities include those times when a worker needs to open a port to measure the depth of or sample the material in the container, or when a worker needs to open a manhole hatch to access equipment inside the container. Following completion of the activity, the owner or operator shall promptly secure the closure device in the closed position or reinstall the cover, as applicable to the container.

(IV) Opening of a spring-loaded, pressure-vacuum relief valve, conservation vent, or similar type of pressure relief device which vents to the atmosphere is allowed during normal operations for the purpose of maintaining the container internal pressure in accordance with the design specifications of the container. The device shall be designed to operate with no detectable organic emissions when the device is secured in the closed position. The settings at which the device opens shall be established such that the device remains in the closed position whenever the internal pressure of the container is within the internal pressure operating range determined by the owner or operator based on container manufacturer recommendations, applicable regulations, fire protection and prevention codes, standard engineering codes and practices, or other requirements for the safe handling of flammable, ignitable, explosive, reactive, or hazardous materials. Examples of normal operating conditions that may require these devices to open are during those times when the internal pressure of the container exceeds the internal pressure operating range for the container as a result of loading operations or diurnal ambient temperature fluctuations.

(V) Opening of a safety device, as defined in subparagraph (b) of this paragraph, is allowed at any time conditions require doing so to avoid an unsafe condition.

(iv) The owner or operator of containers using Container Level 1 controls shall inspect the containers and their covers and closure devices as follows:

(I) In the case when a hazardous waste already is in the container at the time the owner or operator first accepts possession of the container at the facility and the container is not emptied within 24 hours after the container is accepted at the facility (i.e., does not meet the conditions for

an empty container as specified in Rule 0400-12-01-.02(1)(g)2), the owner or operator shall visually inspect the container and its cover and closure devices to check for visible cracks, holes, gaps, or other open spaces into the interior of the container when the cover and closure devices are secured in the closed position. The container visual inspection shall be conducted on or before the date that the container is accepted at the facility (i.e., the date the container becomes subject to the container standards of this paragraph). For purposes of this requirement, the date of acceptance is the date of signature that the facility owner or operator enters on Item 20 of the Uniform Hazardous Waste Manifest in the appendix to Rule 0400-12-01-.03 (EPA Forms 8700-22 and 8700-22A), as required under subparagraph (5)(b) of this rule. If a defect is detected, the owner or operator shall repair the defect in accordance with the requirements of item (III) of this subpart.

(II) In the case when a container used for managing hazardous waste remains at the facility for a period of 1 year or more, the owner or operator shall visually inspect the container and its cover and closure devices initially and thereafter, at least once every 12 months, to check for visible cracks, holes, gaps, or other open spaces into the interior of the container when the cover and closure devices are secured in the closed position. If a defect is detected, the owner or operator shall repair the defect in accordance with the requirements of item (III) of this subpart.

(III) When a defect is detected for the container, cover, or closure devices, the owner or operator shall make first efforts at repair of the defect no later than 24 hours after detection, and repair shall be completed as soon as possible but no later than 5 calendar days after detection. If repair of a defect cannot be completed within 5 calendar days, then the hazardous waste shall be removed from the container and the container shall not be used to manage hazardous waste until the defect is repaired.

(v) The owner or operator shall maintain at the facility a copy of the procedure used to determine that containers with capacity of 0.46 m^3 or greater, which do not meet applicable DOT regulations as specified in part 6 of this subparagraph, are not managing hazardous waste in light material service.

4. Container Level 2 standards.

(i) A container using Container Level 2 controls is one of the following:

(I) A container that meets the applicable U.S. Department of Transportation (DOT) regulations on packaging hazardous materials for transportation as specified in part 6 of this subparagraph.

(II) A container that operates with no detectable organic emissions as defined in subparagraph (b) of this paragraph and determined in accordance with the procedure specified in part 7 of this subparagraph.

(III) A container that has been demonstrated within the preceding 12 months to be vapor-tight by using 40 CFR Part 60, Appendix A, Method 27 in accordance with the procedure specified in part 8 of this subparagraph.

(ii) Transfer of hazardous waste in or out of a container using Container Level 2 controls shall be conducted in such a manner as to minimize exposure of the hazardous waste to the atmosphere, to the extent practical, considering the physical properties of the hazardous waste and good engineering and safety

practices for handling flammable, ignitable, explosive, reactive or other hazardous materials. Examples of container loading procedures that the Department considers to meet the requirements of this subpart include using any one of the following: A submerged-fill pipe or other submerged-fill method to load liquids into the container; a vapor-balancing system or a vapor-recovery system to collect and control the vapors displaced from the container during filling operations; or a fitted opening in the top of a container through which the hazardous waste is filled and subsequently purging the transfer line before removing it from the container opening.

(iii) Whenever a hazardous waste is in a container using Container Level 2 controls, the owner or operator shall install all covers and closure devices for the container, and secure and maintain each closure device in the closed position except as follows:

(I) Opening of a closure device or cover is allowed for the purpose of adding hazardous waste or other material to the container as follows:

I. In the case when the container is filled to the intended final level in one continuous operation, the owner or operator shall promptly secure the closure devices in the closed position and install the covers, as applicable to the container, upon conclusion of the filling operation.

II. In the case when discrete quantities or batches of material intermittently are added to the container over a period of time, the owner or operator shall promptly secure the closure devices in the closed position and install covers, as applicable to the container, upon either the container being filled to the intended final level; the completion of a batch loading after which no additional material will be added to the container within 15 minutes; the person performing the loading operation leaving the immediate vicinity of the container; or the shutdown of the process generating the material being added to the container, whichever condition occurs first.

(II) Opening of a closure device or cover is allowed for the purpose of removing hazardous waste from the container as follows:

I. For the purpose of meeting the requirements of this subparagraph, an empty container as defined in Rule 0400-12-01-.02(1)(g)2 may be open to the atmosphere at any time (i.e., covers and closure devices are not required to be secured in the closed position on an empty container).

II. In the case when discrete quantities or batches of material are removed from the container but the container does not meet the conditions to be an empty container as defined in Rule 0400-12-01-.02(1)(g)2, the owner or operator shall promptly secure the closure devices in the closed position and install covers, as applicable to the container, upon the completion of a batch removal after which no additional material will be removed from the container within 15 minutes or the person performing the unloading operation leaves the immediate vicinity of the container, whichever condition occurs first.

(III) Opening of a closure device or cover is allowed when access inside the container is needed to perform routine activities other than transfer of hazardous waste. Examples of such activities include those times when

a worker needs to open a port to measure the depth of or sample the material in the container, or when a worker needs to open a manhole hatch to access equipment inside the container. Following completion of the activity, the owner or operator shall promptly secure the closure device in the closed position or reinstall the cover, as applicable to the container.

(IV) Opening of a spring-loaded, pressure-vacuum relief valve, conservation vent, or similar type of pressure relief device which vents to the atmosphere is allowed during normal operations for the purpose of maintaining the internal pressure of the container in accordance with the container design specifications. The device shall be designed to operate with no detectable organic emission when the device is secured in the closed position. The settings at which the device opens shall be established such that the device remains in the closed position whenever the internal pressure of the container is within the internal pressure operating range determined by the owner or operator based on container manufacturer recommendations, applicable regulations, fire protection and prevention codes, standard engineering codes and practices, or other requirements for the safe handling of flammable, ignitable, explosive, reactive, or hazardous materials. Examples of normal operating conditions that may require these devices to open are during those times when the internal pressure of the container exceeds the internal pressure operating range for the container as a result of loading operations or diurnal ambient temperature fluctuations.

(V) Opening of a safety device, as defined in subparagraph (b) of this paragraph, is allowed at any time conditions require doing so to avoid an unsafe condition.

(iv) The owner or operator of containers using Container Level 2 controls shall inspect the containers and their covers and closure devices as follows:

(I) In the case when a hazardous waste already is in the container at the time the owner or operator first accepts possession of the container at the facility and the container is not emptied within 24 hours after the container is accepted at the facility (i.e., does not meet the conditions for an empty container as specified in Rule 0400-12-01-.02(1)(g)2), the owner or operator shall visually inspect the container and its cover and closure devices to check for visible cracks, holes, gaps, or other open spaces into the interior of the container when the cover and closure devices are secured in the closed position. The container visual inspection shall be conducted on or before the date that the container is accepted at the facility (i.e., the date the container becomes subject to the container standards of this paragraph). For purposes of this requirement, the date of acceptance is the date of signature that the facility owner or operator enters on Item 20 of the Uniform Hazardous Waste Manifest in the appendix to Rule 0400-12-01-.03 (EPA Forms 8700-22 and 8700-22A), as required under subparagraph (5)(b) of this rule. If a defect is detected, the owner or operator shall repair the defect in accordance with the requirements of item (III) of this subpart.

(II) In the case when a container used for managing hazardous waste remains at the facility for a period of 1 year or more, the owner or operator shall visually inspect the container and its cover and closure devices initially and thereafter, at least once every 12 months, to check for visible cracks, holes, gaps, or other open spaces into the interior of the container when the cover and closure devices are secured in the closed position. If a defect is detected, the owner or operator shall repair

the defect in accordance with the requirements of item (III) of this subpart.

(III) When a defect is detected for the container, cover, or closure devices, the owner or operator shall make first efforts at repair of the defect no later than 24 hours after detection, and repair shall be completed as soon as possible but no later than 5 calendar days after detection. If repair of a defect cannot be completed within 5 calendar days, then the hazardous waste shall be removed from the container and the container shall not be used to manage hazardous waste until the defect is repaired.

5. Container Level 3 standards.

(i) A container using Container Level 3 controls is one of the following:

(I) A container that is vented directly through a closed-vent system to a control device in accordance with the requirements of item (ii)(II) of this part.

(II) A container that is vented inside an enclosure which is exhausted through a closed-vent system to a control device in accordance with the requirements of items (ii)(I) and (II) of this part.

(ii) The owner or operator shall meet the following requirements, as applicable to the type of air emission control equipment selected by the owner or operator:

(I) The container enclosure shall be designed and operated in accordance with the criteria for a permanent total enclosure as specified in "Procedure T--Criteria for and Verification of a Permanent or Temporary Total Enclosure" under 40 CFR 52.741, Appendix B. The enclosure may have permanent or temporary openings to allow worker access; passage of containers through the enclosure by conveyor or other mechanical means; entry of permanent mechanical or electrical equipment; or direct airflow into the enclosure. The owner or operator shall perform the verification procedure for the enclosure as specified in Section 5.0 to "Procedure T--Criteria for and Verification of a Permanent or Temporary Total Enclosure" initially when the enclosure is first installed and, thereafter, annually.

(II) The closed-vent system and control device shall be designed and operated in accordance with the requirements of subparagraph (i) of this paragraph.

(iii) Safety devices, as defined in subparagraph (b) of this paragraph, may be installed and operated as necessary on any container, enclosure, closed-vent system, or control device used to comply with the requirements of subpart (i) of this part.

(iv) Owners and operators using Container Level 3 controls in accordance with the provisions of this paragraph shall inspect and monitor the closed-vent systems and control devices as specified in subparagraph (i) of this paragraph.

(v) Owners and operators that use Container Level 3 controls in accordance with the provisions of this paragraph shall prepare and maintain the records specified in part (k)4 of this paragraph.

(vi) Transfer of hazardous waste in or out of a container using Container Level 3 controls shall be conducted in such a manner as to minimize exposure of the

hazardous waste to the atmosphere, to the extent practical, considering the physical properties of the hazardous waste and good engineering and safety practices for handling flammable, ignitable, explosive, reactive, or other hazardous materials. Examples of container loading procedures that the Department considers to meet the requirements of this subpart include using any one of the following: A submerged-fill pipe or other submerged-fill method to load liquids into the container; a vapor-balancing system or a vapor-recovery system to collect and control the vapors displaced from the container during filling operations; or a fitted opening in the top of a container through which the hazardous waste is filled and subsequently purging the transfer line before removing it from the container opening.

6. For the purpose of compliance with item 3(i)(I) or 4(i)(I) of this subparagraph, containers shall be used that meet the applicable U.S. Department of Transportation (DOT) regulations on packaging hazardous materials for transportation as follows:

   (i) The container meets the applicable requirements specified in 49 CFR part 178-- Specifications for Packaging or 49 CFR part 179-- Specifications for Tank Cars.

   (ii) Hazardous waste is managed in the container in accordance with the applicable requirements specified in 49 CFR part 107, subpart B-- Exemptions; 49 CFR part 172--Hazardous Materials Table, Special Provisions, Hazardous Materials Communications, Emergency Response Information, and Training Requirements; 49 CFR part 173--Shippers-- General Requirements for Shipments and Packages; and 49 CFR part 180-- Continuing Qualification and Maintenance of Packagings.

   (iii) For the purpose of complying with this paragraph, no exceptions to the 49 CFR part 178 or part 179 regulations are allowed except as provided for in subpart (iv) of this part.

   (iv) For a lab pack that is managed in accordance with the requirements of 49 CFR part 178 for the purpose of complying with this paragraph, an owner or operator may comply with the exceptions for combination packagings specified in 49 CFR 173.12(b).

7. To determine compliance with the no detectable organic emissions requirements of item 4(i)(II) of this subparagraph, the procedure specified in part (e)4 of this paragraph shall be used.

   (i) Each potential leak interface (i.e., a location where organic vapor leakage could occur) on the container, its cover, and associated closure devices, as applicable to the container, shall be checked. Potential leak interfaces that are associated with containers include, but are not limited to: The interface of the cover rim and the container wall; the periphery of any opening on the container or container cover and its associated closure device; and the sealing seat interface on a spring-loaded pressure-relief valve.

   (ii) The test shall be performed when the container is filled with a material having a volatile organic concentration representative of the range of volatile organic concentrations for the hazardous wastes expected to be managed in this type of container. During the test, the container cover and closure devices shall be secured in the closed position.

8. Procedure for determining a container to be vapor-tight using Method 27 of 40 CFR Part 60, Appendix A for the purpose of complying with item 4(i)(III) of this subparagraph.

   (i) The test shall be performed in accordance with Method 27 of 40 CFR part 60, Appendix A.

(ii) A pressure measurement device shall be used that has a precision of ± 2.5 mm water and that is capable of measuring above the pressure at which the container is to be tested for vapor tightness.

(iii) If the test results determined by Method 27 indicate that the container sustains a pressure change less than or equal to 750 Pascals within 5 minutes after it is pressurized to a minimum of 4,500 Pascals, then the container is determined to be vapor-tight.

(i) Standards: Closed-vent Systems and Control Devices [40 CFR 265.1088]

1. This subparagraph applies to each closed-vent system and control device installed and operated by the owner or operator to control air emissions in accordance with standards of this paragraph.

2. The closed-vent system shall meet the following requirements:

(i) The closed-vent system shall route the gases, vapors, and fumes emitted from the hazardous waste in the waste management unit to a control device that meets the requirements specified in part 3 of this subparagraph.

(ii) The closed-vent system shall be designed and operated in accordance with the requirements specified in part (27)(d)10 of this rule.

(iii) In the case when the closed-vent system includes bypass devices that could be used to divert the gas or vapor stream to the atmosphere before entering the control device, each bypass device shall be equipped with either a flow indicator as specified in item (I) of this subpart or a seal or locking device as specified in item (II) of this subpart. For the purpose of complying with this subpart, low leg drains, high point bleeds, analyzer vents, open-ended valves or lines, spring-loaded pressure relief valves, and other fittings used for safety purposes are not considered to be bypass devices.

(I) If a flow indicator is used to comply with this subpart, the indicator shall be installed at the inlet to the bypass line used to divert gases and vapors from the closed-vent system to the atmosphere at a point upstream of the control device inlet. For this item, a flow indicator means a device which indicates the presence of either gas or vapor flow in the bypass line.

(II) If a seal or locking device is used to comply with this subpart, the device shall be placed on the mechanism by which the bypass device position is controlled (e.g., valve handle, damper lever) when the bypass device is in the closed position such that the bypass device cannot be opened without breaking the seal or removing the lock. Examples of such devices include, but are not limited to, a car-seal or a lock-and-key configuration valve. The owner or operator shall visually inspect the seal or closure mechanism at least once every month to verify that the bypass mechanism is maintained in the closed position.

(iv) The closed-vent system shall be inspected and monitored by the owner or operator in accordance with the procedure specified in part (27)(d)11 of this rule.

3. The control device shall meet the following requirements:

(i) The control device shall be one of the following devices:

(I) A control device designed and operated to reduce the total organic

content of the inlet vapor stream vented to the control device by at least 95 percent by weight;

(II) An enclosed combustion device designed and operated in accordance with the requirements of part (27)(d)3 of this rule; or

(III) A flare designed and operated in accordance with the requirements of part (27)(d)4 of this rule.

(ii) The owner or operator who elects to use a closed-vent system and control device to comply with the requirements of this subparagraph shall comply with the requirements specified in items (I) through (VI) of this subpart.

(I) Periods of planned routine maintenance of the control device, during which the control device does not meet the specifications of items (i)(I), (II), or (III) of this part, as applicable, shall not exceed 240 hours per year.

(II) The specifications and requirements in items (i)(I), (II), and (III) of this part for control devices do not apply during periods of planned routine maintenance.

(III) The specifications and requirements in items (i)(I), (II), and (III) of this part for control devices do not apply during a control device system malfunction.

(IV) The owner or operator shall demonstrate compliance with the requirements of item (I) of this subpart (i.e., planned routine maintenance of a control device, during which the control device does not meet the specifications of subpart (i) of this part, as applicable, shall not exceed 240 hours per year) by recording the information specified in item (k)5(i)(V) of this paragraph.

(V) The owner or operator shall correct control device system malfunctions as soon as practicable after their occurrence in order to minimize excess emissions of air pollutants.

(VI) The owner or operator shall operate the closed-vent system such that gases, vapors, and/or fumes are not actively vented to the control device during periods of planned maintenance or control device system malfunction (i.e., periods when the control device is not operating or not operating normally) except in cases when it is necessary to vent the gases, vapors, or fumes to avoid an unsafe condition or to implement malfunction corrective actions or planned maintenance actions.

(iii) The owner or operator using a carbon adsorption system to comply with subpart (i) of this part shall operate and maintain the control device in accordance with the following requirements:

(I) Following the initial startup of the control device, all activated carbon in the control device shall be replaced with fresh carbon on a regular basis in accordance with the requirements of part (27)(d)7 or part (27)(d)8 of this rule.

(II) All carbon that is a hazardous waste and that is removed from the control device shall be managed in accordance with the requirements of part (27)(d)13 of this rule, regardless of the average volatile organic concentration of the carbon.

(iv) An owner or operator using a control device other than a thermal vapor incinerator, flare, boiler, process heater, condenser, or carbon adsorption system to comply with subpart (i) of this part shall operate and maintain the control device in accordance with the requirements of part (27)(d)9 of this rule.

(v) The owner or operator shall demonstrate that a control device achieves the performance requirements of subpart (i) of this part as follows:

(I) An owner or operator shall demonstrate using either a performance test as specified in item (III) of this subpart or a design analysis as specified in item (IV) of this subpart the performance of each control device except for the following:

I. A flare;

II. A boiler or process heater with a design heat input capacity of 44 megawatts or greater;

III. A boiler or process heater into which the vent stream is introduced with the primary fuel;

IV. A boiler or industrial furnace burning hazardous waste for which the owner or operator has been issued a final permit under Rule 0400-12-01-.07 and has designed and operates the unit in accordance with the requirements of Rule 0400-12-01-.09(8); or

V. A boiler or industrial furnace burning hazardous waste for which the owner or operator has designed and operates in accordance with the interim status requirements of Rule 0400-12-01-.09(8).

(II) An owner or operator shall demonstrate the performance of each flare in accordance with the requirements specified in part (27)(d)5 of this rule.

(III) For a performance test conducted to meet the requirements of item (I) of this subpart, the owner or operator shall use the test methods and procedures specified in subparts (27)(e)3(i) through (iv) of this rule.

(IV) For a design analysis conducted to meet the requirements of item (I) of this subpart, the design analysis shall meet the requirements specified in item (27)(f)2(iv)(III) of this rule.

(V) The owner or operator shall demonstrate that a carbon adsorption system achieves the performance requirements of subpart (i) of this part based on the total quantity of organics vented to the atmosphere from all carbon adsorption system equipment that is used for organic adsorption, organic desorption or carbon regeneration, organic recovery, and carbon disposal.

(vi) If the owner or operator and the Commissioner do not agree on a demonstration of control device performance using a design analysis then the disagreement shall be resolved using the results of a performance test performed by the owner or operator in accordance with the requirements of item (v)(III) of this part. The Commissioner may choose to have an authorized representative observe the performance test.

(vii) The closed-vent system and control device shall be inspected and monitored by the owner or operator in accordance with the procedures specified in subpart (27)(d)6(ii) and part (27)(d)11 of this rule. The readings from each monitoring device required by subpart (27)(d)6(ii) of this rule shall be inspected at least once

each operating day to check control device operation. Any necessary corrective measures shall be immediately implemented to ensure the control device is operated in compliance with the requirements of this subparagraph.

(j) Inspection and Monitoring Requirements [40 CFR 265.1089]

1. The owner or operator shall inspect and monitor air emission control equipment used to comply with this paragraph in accordance with the applicable requirements specified in subparagraphs (f) through (i) of this paragraph.

2. The owner or operator shall develop and implement a written plan and schedule to perform the inspections and monitoring required part 1 of this subparagraph. The owner or operator shall incorporate this plan and schedule into the facility inspection plan required under subparagraph (2)(f) of this rule.

(k) Recordkeeping Requirements [40 CFR 265.1090]

1. Each owner or operator of a facility subject to requirements in this paragraph shall record and maintain the information specified in parts 2 through 10 of this subparagraph, as applicable to the facility. Except for air emission control equipment design documentation and information required by parts 9 and 10 of this subparagraph, records required by this subparagraph shall be maintained in the operating record for a minimum of 3 years. Air emission control equipment design documentation shall be maintained in the operating record until the air emission control equipment is replaced or otherwise no longer in service. Information required by parts 9 and 10 of this subparagraph shall be maintained in the operating record for as long as the waste management unit is not using air emission controls specified in subparagraphs (f) through (i) of this paragraph in accordance with the conditions specified in part (a)4 or subpart (a)2(vii) of this paragraph, respectively.

2. The owner or operator of a tank using air emission controls in accordance with the requirements of subparagraph (f) of this paragraph shall prepare and maintain records for the tank that include the following information:

(i) For each tank using air emission controls in accordance with the requirements of subparagraph (f) of this paragraph, the owner or operator shall record:

(I) A tank identification number (or other unique identification description as selected by the owner or operator).

(II) A record for each inspection required by subparagraph (f) of this paragraph that includes the following information:

I. Date inspection was conducted.

II. For each defect detected during the inspection: The location of the defect, a description of the defect, the date of detection, and corrective action taken to repair the defect. In the event that repair of the defect is delayed in accordance with the provisions of subparagraph (f) of this paragraph, the owner or operator shall also record the reason for the delay and the date that completion of repair of the defect is expected.

(ii) In addition to the information required by subpart (i) of this part, the owner or operator shall record the following information, as applicable to the tank:

(I) The owner or operator using a fixed roof to comply with the Tank Level 1 control requirements specified in part (f)3 of this paragraph shall prepare and maintain records for each determination for the maximum organic

vapor pressure of the hazardous waste in the tank performed in accordance with the requirements of part (f)3 of this paragraph. The records shall include the date and time the samples were collected, the analysis method used, and the analysis results.

(II) The owner or operator using an internal floating roof to comply with the Tank Level 2 control requirements specified in part (f)5 of this paragraph shall prepare and maintain documentation describing the floating roof design.

(III) Owners and operators using an external floating roof to comply with the Tank Level 2 control requirements specified in part (f)6 of this paragraph shall prepare and maintain the following records:

I. Documentation describing the floating roof design and the dimensions of the tank.

II. Records for each seal gap inspection required by subpart (f)6(iii) of this paragraph describing the results of the seal gap measurements. The records shall include the date that the measurements were performed, the raw data obtained for the measurements, and the calculations of the total gap surface area. In the event that the seal gap measurements do not conform to the specifications in subpart (f)6(i) of this paragraph, the records shall include a description of the repairs that were made, the date the repairs were made, and the date the tank was emptied, if necessary.

(IV) Each owner or operator using an enclosure to comply with the Tank Level 2 control requirements specified in part (f)9 of this paragraph shall prepare and maintain the following records:

I. Records for the most recent set of calculations and measurements performed by the owner or operator to verify that the enclosure meets the criteria of a permanent total enclosure as specified in "Procedure T--Criteria for and Verification of a Permanent or Temporary Total Enclosure" under 40 CFR 52.741, Appendix B.

II. Records required for the closed-vent system and control device in accordance with the requirements of part 5 of this paragraph.

3. The owner or operator of a surface impoundment using air emission controls in accordance with the requirements of subparagraph (g) of this paragraph shall prepare and maintain records for the surface impoundment that include the following information:

(i) A surface impoundment identification number (or other unique identification description as selected by the owner or operator).

(ii) Documentation describing the floating membrane cover or cover design, as applicable to the surface impoundment, that includes information prepared by the owner or operator or provided by the cover manufacturer or vendor describing the cover design, and certification by the owner or operator that the cover meets the specifications listed in part (g)3 of this paragraph.

(iii) A record for each inspection required by subparagraph (g) of this paragraph that includes the following information:

(I) Date inspection was conducted.

(II) For each defect detected during the inspection the following information: The location of the defect, a description of the defect, the date of detection, and corrective action taken to repair the defect. In the event that repair of the defect is delayed in accordance with the provisions of part (g)6 of this paragraph, the owner or operator shall also record the reason for the delay and the date that completion of repair of the defect is expected.

(iv) For a surface impoundment equipped with a cover and vented through a closed-vent system to a control device, the owner or operator shall prepare and maintain the records specified in part 5 of this subparagraph.

4. The owner or operator of containers using Container Level 3 air emission controls in accordance with the requirements of subparagraph (h) of this paragraph shall prepare and maintain records that include the following information:

(i) Records for the most recent set of calculations and measurements performed by the owner or operator to verify that the enclosure meets the criteria of a permanent total enclosure as specified in "Procedure T--Criteria for and Verification of a Permanent or Temporary Total Enclosure" under 40 CFR 52.741, Appendix B.

(ii) Records required for the closed-vent system and control device in accordance with the requirements of part 5 of this subparagraph.

5. The owner or operator using a closed-vent system and control device in accordance with the requirements of subparagraph (i) of this paragraph shall prepare and maintain records that include the following information:

(i) Documentation for the closed-vent system and control device that includes:

(I) Certification that is signed and dated by the owner or operator stating that the control device is designed to operate at the performance level documented by a design analysis as specified in item (II) of this subpart or by performance tests as specified in item (III) of this subpart when the tank, surface impoundment, or container is or would be operating at capacity or the highest level reasonably expected to occur.

(II) If a design analysis is used, then design documentation as specified in subpart (27)(f)2(iv) of this rule. The documentation shall include information prepared by the owner or operator or provided by the control device manufacturer or vendor that describes the control device design in accordance with item (27)(f)2(iv)(III) of this rule and certification by the owner or operator that the control equipment meets the applicable specifications.

(III) If performance tests are used, then a performance test plan as specified in subpart (27)(f)2(iii) of this rule and all test results.

(IV) Information as required by subparts (27)(f)3(i) and (ii) of this rule, as applicable.

(V) An owner or operator shall record, on a semiannual basis, the information specified in subitems I and II of this item for those planned routine maintenance operations that would require the control device not to meet the requirements of item (i)3(i)(I), (II) or (III) of this paragraph, as applicable.

I. A description of the planned routine maintenance that is anticipated to be performed for the control device during the next 6-month period. This description shall include the type of maintenance necessary, planned frequency of maintenance, and lengths of maintenance periods.

II. A description of the planned routine maintenance that was performed for the control device during the previous 6-month period. This description shall include the type of maintenance performed and the total number of hours during those 6 months that the control device did not meet the requirements of item (i)3(i)(I), (II) or (III) of this paragraph, as applicable, due to planned routine maintenance.

(VI) An owner or operator shall record the information specified in subitems I through III of this item for those unexpected control device system malfunctions that would require the control device not to meet the requirements of item (i)3(i)(I), (II) or (III) of this paragraph, as applicable.

I. The occurrence and duration of each malfunction of the control device system.

II. The duration of each period during a malfunction when gases, vapors, or fumes are vented from the waste management unit through the closed-vent system to the control device while the control device is not properly functioning.

III. Actions taken during periods of malfunction to restore a malfunctioning control device to its normal or usual manner of operation.

(VII) Records of the management of carbon removed from a carbon adsorption system conducted in accordance with item (i)3(iii)(II) of this paragraph.

6. The owner or operator of a tank, surface impoundment, or container exempted from standards in accordance with the provisions of part (d)3 of this paragraph shall prepare and maintain the following records, as applicable:

(i) For tanks, surface impoundments, or containers exempted under the hazardous waste organic concentration conditions specified in subpart (d)3(i) or items (d)3(ii)(I) through (VI) of this paragraph, the owner or operator shall record the information used for each waste determination (e.g., test results, measurements, calculations, and other documentation) in the facility operating log. If analysis results for waste samples are used for the waste determination, then the owner or operator shall record the date, time, and location that each waste sample is collected in accordance with applicable requirements of subparagraph (e) of this paragraph.

(ii) For tanks, surface impoundments, or containers exempted under the provisions of item (d)3(ii)(VII) or (VIII) of this paragraph, the owner or operator shall record the identification number for the incinerator, boiler, or industrial furnace in which the hazardous waste is treated.

7. An owner or operator designating a cover as "unsafe to inspect and monitor" pursuant to part (f)12 or (g)7 of this paragraph shall record in a log that is kept in the facility operating record the following information: The identification numbers for waste management units with covers that are designated as "unsafe to inspect and monitor," the explanation for each cover stating why the cover is unsafe to inspect and monitor, and the plan and

schedule for inspecting and monitoring each cover.

8. The owner or operator of a facility that is subject to this paragraph and to the control device standards in 40 CFR Part 60, subpart VV, or 40 CFR part 61, subpart V, may elect to demonstrate compliance with the applicable subparagraph of this paragraph by documentation either pursuant to this paragraph, or pursuant to the provisions of 40 CFR part 60, subpart VV or 40 CFR Part 61, subpart V, to the extent that the documentation required by 40 CFR parts 60 or 61 duplicates the documentation required by this subparagraph.

9. For each tank or container not using air emission controls specified in subparagraphs (f) through (i) of this paragraph in accordance with the conditions specified in part (a)4 of this paragraph, the owner or operator shall record and maintain the following information:

(i) A list of the individual organic peroxide compounds manufactured at the facility that meet the conditions specified in subpart (a)4(i) of this paragraph.

(ii) A description of how the hazardous waste containing the organic peroxide compounds identified in subpart (i) of this part are managed at the facility in tanks and containers. This description shall include the following information:

(I) For the tanks used at the facility to manage this hazardous waste, sufficient information shall be provided to describe for each tank: A facility identification number for the tank; the purpose and placement of this tank in the management train of this hazardous waste; and the procedures used to ultimately dispose of the hazardous waste managed in the tanks.

(II) For containers used at the facility to manage these hazardous wastes, sufficient information shall be provided to describe: A facility identification number for the container or group of containers; the purpose and placement of this container, or group of containers, in the management train of this hazardous waste; and the procedures used to ultimately dispose of the hazardous waste handled in the containers.

(iii) An explanation of why managing the hazardous waste containing the organic peroxide compounds identified in subpart (i) of this part in the tanks and containers as described in subpart (ii) of this part would create an undue safety hazard if the air emission controls, as required under subparagraphs (f) through (i) of this paragraph, are installed and operated on these waste management units. This explanation shall include the following information:

(I) For tanks used at the facility to manage these hazardous wastes, sufficient information shall be provided to explain: How use of the required air emission controls on the tanks would affect the tank design features and facility operating procedures currently used to prevent an undue safety hazard during the management of this hazardous waste in the tanks; and why installation of safety devices on the required air emission controls, as allowed under this subpart, will not address those situations in which evacuation of tanks equipped with these air emission controls is necessary and consistent with good engineering and safety practices for handling organic peroxides.

(II) For containers used at the facility to manage these hazardous wastes, sufficient information shall be provided to explain: How use of the required air emission controls on the containers would affect the container design features and handling procedures currently used to prevent an undue safety hazard during the management of this hazardous waste in the containers; and why installation of safety devices

on the required air emission controls, as allowed under this paragraph, will not address those situations in which evacuation of containers equipped with these air emission controls is necessary and consistent with good engineering and safety practices for handling organic peroxides.

10. For each hazardous waste management unit not using air emission controls specified in subparagraphs (f) through (i) of this paragraph in accordance with the provisions of subpart (a)2(vii) of this paragraph, the owner and operator shall record and maintain the following information:

    (i) Certification that the waste management unit is equipped with and operating air emission controls in accordance with the requirements of an applicable Clean Air Act regulation codified under 40 CFR Part 60, Part 61, or Part 63.

    (ii) Identification of the specific requirements codified under 40 CFR Part 60, Part 61, or Part 63 with which the waste management unit is in compliance.

(l) (RESERVED) [40 CFR 265.1091]

(30) Containment Buildings [40 CFR 265 Subpart DD]

(a) Applicability [40 CFR 265.1100]

The requirements of this paragraph apply to owners or operators who store or treat hazardous waste in units designed and operated under subparagraph (b) of this paragraph. The owner or operator is not subject to the definition of land disposal in Rule 0400-12-01-.01(2)(a) provided that the unit:

1. Is a completely enclosed, self-supporting structure that is designed and constructed of manmade materials of sufficient strength and thickness to support themselves, the waste contents, and any personnel and heavy equipment that operate within the units, and to prevent failure due to pressure gradients, settlement, compression, or uplift, physical contact with the hazardous wastes to which they are exposed; climatic conditions; and the stresses of daily operation, including the movement of heavy equipment within the unit and contact of such equipment with containment walls;

2. Has a primary barrier that is designed to be sufficiently durable to withstand the movement of personnel and handling equipment within the unit;

3. If the unit is used to manage liquids, has:

    (i) A primary barrier designed and constructed of materials to prevent migration of hazardous constituents into the barrier;

    (ii) A liquid collection system designed and constructed of materials to minimize the accumulation of liquid on the primary barrier; and

    (iii) A secondary containment system designed and constructed of materials to prevent migration of hazardous constituents into the barrier, with a leak detection and liquid collection system capable of detecting, collecting, and removing leaks of hazardous constituents at the earliest possible time, unless the unit has been granted a variance from the secondary containment system requirements under subpart (b)2(iv) of this paragraph;

4. Has controls as needed to prevent fugitive dust emissions; and

5. Is designed and operated to ensure containment and prevent the tracking of materials from the unit by personnel or equipment.

(b) Design and Operating Standards [40 CFR 265.1101]

1. All containment buildings must comply with the following design standards:

(i) The containment building must be completely enclosed with a floor, walls, and a roof to prevent exposure to the elements, (e.g., precipitation, wind, run-on), and to assure containment of managed wastes.

(ii) The floor and containment walls of the unit, including the secondary containment system if required under part 2 of this subparagraph, must be designed and constructed of materials of sufficient strength and thickness to support themselves, the waste contents, and any personnel and heavy equipment that operate within the unit, and to prevent failure due to pressure gradients, settlement, compression, or uplift, physical contact with the hazardous wastes to which they are exposed; climatic conditions; and the stresses of daily operation, including the movement of heavy equipment within the unit and contact of such equipment with containment walls. The unit must be designed so that it has sufficient structural strength to prevent collapse or other failure. All surfaces to be in contact with hazardous wastes must be chemically compatible with those wastes. The Commissioner will consider standards established by professional organizations generally recognized by the industry such as the American Concrete Institute (ACI) and the American Society of Testing Materials (ASTM) in judging the structural integrity requirements of this part. If appropriate to the nature of the waste management operation to take place in the unit, an exception to the structural strength requirement may be made for light-weight doors and windows that meet these criteria:

(I) They provide an effective barrier against fugitive dust emissions under item 3(i)(IV) of this subparagraph; and

(II) The unit is designed and operated in a fashion that assures that wastes will not actually come in contact with these openings.

(III) Incompatible hazardous wastes or treatment reagents must not be placed in the unit or its secondary containment system if they could cause the unit or secondary containment system to leak, corrode, or otherwise fail.

(IV) A containment building must have a primary barrier designed to withstand the movement of personnel, waste, and handling equipment in the unit during the operating life of the unit and appropriate for the physical and chemical characteristics of the waste to be managed.

2. For a containment building used to manage hazardous wastes containing free liquids or treated with free liquids (the presence of which is determined by the paint filter test, a visual examination, or other appropriate means), the owner or operator must include:

(i) A primary barrier designed and constructed of materials to prevent the migration of hazardous constituents into the barrier (e.g. a geomembrane covered by a concrete wear surface).

(ii) A liquid collection and removal system to prevent the accumulation of liquid on the primary barrier of the containment building:

(I) The primary barrier must be sloped to drain liquids to the associated collection system; and

(II) Liquids and waste must be collected and removed to minimize hydraulic

head on the containment system at the earliest practicable time that protects human health and the environment.

(iii) A secondary containment system including a secondary barrier designed and constructed to prevent migration of hazardous constituents into the barrier, and a leak detection system that is capable of detecting failure of the primary barrier and collecting accumulated hazardous wastes and liquids at the earliest practicable time.

(I) The requirements of the leak detection component of the secondary containment system are satisfied by installation of a system that is, at a minimum:

I. Constructed with a bottom slope of 1 percent or more; and

II. Constructed of a granular drainage material with a hydraulic conductivity of 1×10^{-2} cm/sec or more and a thickness of 12 inches (30.5 cm) or more, or constructed of synthetic or geonet drainage materials with a transmissivity of 3×10^{-5} m^2/sec or more.

(II) If treatment is to be conducted in the building, an area in which such treatment will be conducted must be designed to prevent the release of liquids, wet materials, or liquid aerosols to other portions of the building.

(III) The secondary containment system must be constructed of materials that are chemically resistant to the waste and liquids managed in the containment building and of sufficient strength and thickness to prevent collapse under the pressure exerted by overlaying materials and by any equipment used in the containment building. (Containment buildings can serve as secondary containment systems for tanks placed within the building under certain conditions. A containment building can serve as an external liner system for a tank, provided it meets the requirements of subpart (10)(d)5(i) of this rule. In addition, the containment building must meet the requirements of parts (10)(d)2 and 3 of this rule to be considered an acceptable secondary containment system for a tank.)

(iv) For existing units other than 90-day generator units, the Commissioner may delay the secondary containment requirement for up to two years, based on a demonstration by the owner or operator that the unit substantially meets the standards of this paragraph. In making this demonstration, the owner or operator must:

(I) Provide written notice to the Commissioner of their request by February 18, 1993. This notification must describe the unit and its operating practices with specific reference to the performance of existing containment systems, and specific plans for retrofitting the unit with secondary containment;

(II) Respond to any comments from the Commissioner on these plans within 30 days; and

(III) Fulfill the terms of the revised plans, if such plans are approved by the Commissioner.

3. Owners or operators of all containment buildings must:

(i) Use controls and practices to ensure containment of the hazardous waste within the unit; and, at a minimum:

(I) Maintain the primary barrier to be free of significant cracks, gaps, corrosion, or other deterioration that could cause hazardous waste to be released from the primary barrier;

(II) Maintain the level of the stored/treated hazardous waste within the containment walls of the unit so that the height of any containment wall is not exceeded;

(III) Take measures to prevent the tracking of hazardous waste out of the unit by personnel or by equipment used in handling the waste. An area must be designated to decontaminate equipment and any rinsate must be collected and properly managed; and

(IV) Take measures to control fugitive dust emissions such that any openings (doors, windows, vents, cracks, etc.) exhibit no visible emissions. In addition, all associated particulate collection devices (e.g., fabric filter, electrostatic precipitator) must be operated and maintained with sound air pollution control practices. This state of no visible emissions must be maintained effectively at all times during normal operating conditions, including when vehicles and personnel are entering and exiting the unit.

(ii) Obtain and keep on-site certification by a qualified Professional Engineer that the containment building design meets the requirements of parts 1 through 3 of this subparagraph.

(iii) Throughout the active life of the containment building, if the owner or operator detects a condition that could lead to or has caused a release of hazardous waste, the owner or operator must repair the condition promptly, in accordance with the following procedures.

(I) Upon detection of a condition that has led to a release of hazardous waste (e.g., upon detection of leakage from the primary barrier) the owner or operator must:

I. Enter a record of the discovery in the facility operating record;

II. Immediately remove the portion of the containment building affected by the condition from service;

III. Determine what steps must be taken to repair the containment building, remove any leakage from the secondary collection system, and establish a schedule for accomplishing the cleanup and repairs; and

IV. Within 7 days after the discovery of the condition, notify the Commissioner of the condition, and within 14 working days, provide a written notice to the Commissioner with a description of the steps taken to repair the containment building, and the schedule for accomplishing the work.

(II) The Commissioner will review the information submitted, make a determination regarding whether the containment building must be removed from service completely or partially until repairs and cleanup are complete, and notify the owner or operator of the determination and the underlying rationale in writing.

(III) Upon completing all repairs and cleanup the owner or operator must notify the Commissioner in writing and provide a verification, signed by a

qualified, registered professional engineer, that the repairs and cleanup have been completed according to the written plan submitted in accordance with subitem (I)IV of this subpart.

(iv) Inspect and record in the facility's operating record, at least once every seven days, data gathered from monitoring and leak detection equipment as well as the containment building and the area immediately surrounding the containment building to detect signs of releases of hazardous waste.

4. For a containment building that contains both areas with and without secondary containment, the owner or operator must:

(i) Design and operate each area in accordance with the requirements enumerated in parts 1 through 3 of this subparagraph;

(ii) Take measures to prevent the release of liquids or wet materials into areas without secondary containment; and

(iii) Maintain in the facility's operating log a written description of the operating procedures used to maintain the integrity of areas without secondary containment.

5. Notwithstanding any other provision of this paragraph, the Commissioner may waive requirements for secondary containment for a permitted containment building where the owner or operator demonstrates that the only free liquids in the unit are limited amounts of dust suppression liquids required to meet occupational health and safety requirements, and where containment of managed wastes and liquids can be assured without a secondary containment system.

(c) Closure and Post-closure Care [40 CFR 265.1102]

1. At closure of a containment building, the owner or operator must remove or decontaminate all waste residues, contaminated containment system components (liners, etc.), contaminated subsoils, and structures and equipment contaminated with waste and leachate, and manage them as hazardous waste unless Rule 0400-12-01-.02(1)(c)4 applies. The closure plan, closure activities, cost estimates for closure, and financial responsibility for containment buildings must meet all of the requirements specified in paragraphs (7) and (8) of this rule.

2. If, after removing or decontaminating all residues and making all reasonable efforts to effect removal or decontamination of contaminated components, subsoils, structures, and equipment as required in part 1 of this subparagraph, the owner or operator finds that not all contaminated subsoils can be practicably removed or decontaminated, he must close the facility and perform post-closure care in accordance with the closure and post-closure requirements that apply to landfills (subparagraph (14)(k) of this rule). In addition, for the purposes of closure, post-closure, and financial responsibility, such a containment building is then considered to be a landfill, and the owner or operator must meet all of the requirements for landfills specified in paragraphs (7) and (8) of this rule.

(31) Hazardous Waste Munitions and Explosives Storage [40 CFR 265 Subpart EE]

(a) Applicability [40 CFR 265.1200]

The requirements of this paragraph apply to owners or operators who store munitions and explosive hazardous wastes, except as subparagraph (1)(b) of this rule provides otherwise.

(NOTE: Depending on explosive hazards, hazardous waste munitions and explosives may also be managed in other types of storage units, including containment buildings (paragraph (30) of this rule), tanks (paragraph (10) of this rule), or containers (paragraph (9) of this rule); see Rule

0400-12-01-.09(13)(f) for storage of waste military munitions.)

(b) Design and Operating Standards [40 CFR 265.1201]

1. Hazardous waste munitions and explosives storage units must be designed and operated with containment systems, controls, and monitoring that:

(i) Minimize the potential for detonation or other means of release of hazardous waste, hazardous constituents, hazardous decomposition products, or contaminated run-off to the soil, ground water, surface water, and atmosphere;

(ii) Provide a primary barrier, which may be a container (including a shell) or tank, designed to contain the hazardous waste;

(iii) For wastes stored outdoors, provide that the waste and containers will not be in standing precipitation;

(iv) For liquid wastes, provide a secondary containment system that assures that any released liquids are contained and promptly detected and removed from the waste area or vapor detection system that assures that any released liquids or vapors are promptly detected and an appropriate response taken (e.g., additional containment, such as overpacking, or removal from the waste area); and

(v) Provide monitoring and inspection procedures that assure the controls and containment systems are working as designed and that releases that may adversely impact human health or the environment are not escaping from the unit.

2. Hazardous waste munitions and explosives stored under this paragraph may be stored in one of the following:

(i) Earth-covered magazines. Earth-covered magazines must be:

(I) Constructed of waterproofed, reinforced concrete or structural steel arches, with steel doors that are kept closed when not being accessed;

(II) Designed and constructed:

I. To be of sufficient strength and thickness to support the weight of any explosives or munitions stored and any equipment used in the unit;

II. To provide working space for personnel and equipment in the unit; and

III. To withstand movement activities that occur in the unit; and

(III) Located and designed, with walls and earthen covers that direct an explosion in the unit in a safe direction, so as to minimize the propagation of an explosion to adjacent units and to minimize other effects of any explosion.

(ii) Above-ground magazines. Above-ground magazines must be located and designed so as to minimize the propagation of an explosion to adjacent units and to minimize other effects of any explosion.

(iii) Outdoor or open storage areas. Outdoor or open storage areas must be located and designed so as to minimize the propagation of an explosion to adjacent units and to minimize other effects of any explosion.

3. Hazardous waste munitions and explosives must be stored in accordance with a Standard Operating Procedure specifying procedures to ensure safety, security, and environmental protection. If these procedures serve the same purpose as the security and inspection requirements of subparagraph (2)(e) of this rule, the preparedness and prevention procedures of paragraph (3) of this rule, and the contingency plan and emergency procedures requirements of paragraph (4) of this rule, then these procedures will be used to fulfill those requirements.

4. Hazardous waste munitions and explosives must be packaged to ensure safety in handling and storage.

5. Hazardous waste munitions and explosives must be inventoried at least annually.

6. Hazardous waste munitions and explosives and their storage units must be inspected and monitored as necessary to ensure explosives safety and to ensure that there is no migration of contaminants out of the unit.

(c) Closure and Post-closure Care [40 CFR 265.1202]

1. At closure of a magazine or unit which stored hazardous waste under this paragraph, the owner or operator must remove or decontaminate all waste residues, contaminated containment system components, contaminated subsoils, and structures and equipment contaminated with waste and manage them as hazardous waste unless Rule 0400-12-01-.02(1)(c)4 applies. The closure plan, closure activities, cost estimates for closure, and financial responsibility for magazines or units must meet all of the requirements specified in paragraph (7) and (8) of this rule, except that the owner or operator may defer closure of the unit as long as it remains in service as a munitions or explosives magazine or storage unit.

2. If, after removing or decontaminating all residues and making all reasonable efforts to effect removal or decontamination of contaminated components, subsoils, structures, and equipment as required in part 1 of this subparagraph, the owner or operator finds that not all contaminated subsoils can be practicably removed or decontaminated, he or she must close the facility and perform post-closure care in accordance with the closure and post-closure requirements that apply to landfills (Rule 0400-12-01-.06(14)(k)).

(32) through (52) (RESERVED)

(53) Appendices [40 CFR 265 APPENDICES]

Appendix I -- Recordkeeping Instructions [40 CFR 265 Appendix I]

The recordkeeping provisions of subparagraph (5)(d) of this rule specify that an owner or operator must keep a written operating record at his facility. This appendix provides additional instructions for keeping portions of the operating record. See part (5)(d)2 of this rule for additional recordkeeping requirements.

The following information must be recorded, as it becomes available, and maintained in the operating record until closure of the facility in the following manner:

(a) Records of each hazardous waste received, treated, stored, or disposed of at the facility which include the following:

1. A description by its common name and the Hazardous Waste Code(s) from Rule 0400-12-01-.02 which apply to the waste. The waste description also must include the waste's physical form, i.e., liquid, sludge, solid, or contained gas. If the waste is not listed in Rule 0400-12-01-.02(4), the description also must include the process that produced it (for example, solid filter cake from production of -- -- -- Hazardous Waste Code W051).

Each hazardous waste listed in Rule 0400-12-01-.02(4), and each hazardous waste characteristic defined in Rule 0400-12-01-.02(3), has a four-digit Hazardous Waste Code assigned to it. This code must be used for recordkeeping and reporting purposes. Where a hazardous waste contains more than one listed hazardous waste, or where more than one hazardous waste characteristic applies to the waste, the waste description must include all applicable Hazardous Waste Codes.

2. The estimated or manifest-reported weight, or volume and density, where applicable, in one of the units of measure specified in Table 1; and

Table 1

Unit of Measure	Code[1]
Gallons	G
Gallons per Hour	E
Gallons per Day	U
Liters	L
Liters Per Hour	H
Liters Per Day	V
Tons	M
Short tons	T
Short Tons Per Hour	D
Metric Tons Per Hour	W
Short Tons Per Day	N
Metric Tons Per Day	S
Pounds	P
Pounds Per Hour	J
Kilograms	K
Kilograms Per Hour	R
Cubic Yards	Y
Cubic Meters	C
Acres	B
Acre-feet	A
Hectares	Q
Hectare-meter	F
Btu's per Hour	I

FOOTNOTE: [1]Single digit symbols are used here for data processing purposes.

3. The method(s) (by handling code(s) as specified in Table 2) and date(s) of treatment, storage, or disposal.

Table 2-Handling Codes for Treatment, Storage and Disposal Methods

Enter the handling code(s) listed below that most closely represents the technique(s) used at the facility to treat, store or dispose of each quantity of hazardous waste received.

1. Storage
   - S01 Container (barrel, drum, etc.)
   - S02 Tank
   - S03 Waste Pile
   - S04 Surface Impoundment
   - S05 Drip Pad
   - S06 Containment Building (Storage)
   - S99 Other Storage (specify)
2. Treatment
   - (a) Thermal Treatment--
     - T06 Liquid injection incinerator
     - T07 Rotary kiln incinerator

T08 Fluidized bed incinerator
T09 Multiple hearth incinerator
T10 Infrared furnace incinerator
T11 Molten salt destructor
T12 Pyrolysis
T13 Wet Air oxidation
T14 Calcination
T15 Microwave discharge
T18 Other (specify)

(b) Chemical Treatment--
T19 Absorption mound
T20 Absorption field
T21 Chemical fixation
T22 Chemical oxidation
T23 Chemical precipitation
T24 Chemical reduction
T25 Chlorination
T26 Chlorinolysis
T27 Cyanide destruction
T28 Degradation
T29 Detoxification
T30 Ion exchange
T31 Neutralization
T32 Ozonation
T33 Photolysis
T34 Other (specify)

(c) Physical Treatment--
(1) Separation of components
T35 Centrifugation
T36 Clarification
T37 Coagulation
T38 Decanting
T39 Encapsulation
T40 Filtration
T41 Flocculation
T42 Flotation
T43 Foaming
T44 Sedimentation
T45 Thickening
T46 Ultrafiltration
T47 Other (specify)

(2) Removal of Specific Components
T48 Absorption-molecular sieve
T49 Activated carbon
T50 Blending
T51 Catalysis
T52 Crystallization
T53 Dialysis
T54 Distillation
T55 Electrodialysis
T56 Electrolysis
T57 Evaporation
T58 High gradient magnetic separation
T59 Leaching
T60 Liquid ion exchange
T61 Liquid-liquid extraction
T62 Reverse osmosis
T63 Solvent recovery
T64 Stripping

T65 Sand filter
T66 Other (specify)

(d) Biological Treatment
T67 Activated sludge
T68 Aerobic lagoon
T69 Aerobic tank
T70 Anaerobic tank
T71 Composting
T72 Septic tank
T73 Spray irrigation
T74 Thickening filter
T75 Trickling filter
T76 Waste stabilization pond
T77 Other (specify)
T78 [Reserved]
T79 [Reserved]

(e) Boilers and Industrial Furnaces
T80 Boiler
T81 Cement Kiln
T82 Lime Kiln
T83 Aggregate Kiln
T84 Phosphate Kiln
T85 Coke Oven
T86 Blast Furnace
T87 Smelting, Melting, or Refining Furnace
T88 Titanium Dioxide Chloride Process Oxidation Reactor
T89 Methane Reforming Furnace
T90 Pulping Liquor Recovery Furnace
T91 Combustion Device Used in the Recovery of Sulfur Values from Spent Sulfuric Acid
T92 Halogen Acid Furnaces
T93 Other Industrial Furnaces Listed in 40 CFR 260.10 (specify)

(f) Other Treatment
T94 Containment Building (Treatment)

3. Disposal
D79 Underground Injection
D80 Landfill
D81 Land Treatment
D82 Ocean Disposal
D83 Surface Impoundment (to be closed as a landfill)
D99 Other Disposal (specify)

4. Miscellaneous
X01 Open Burning/Open Detonation
X02 Mechanical Processing
X03 Thermal Unit
X04 Geologic Repository
X99 Other (specify)

Appendix II -- (RESERVED) [40 CFR 265 Appendix II]

Appendix III -- EPA Interim Primary Drinking Water Standards [40 CFR 265 Appendix III]

Parameter	Maximum Level (mg/l)
Arsenic	0.05
Barium	1.0
Cadmium	0.01
Chromium	0.05
Fluoride	1.4-2.4

Lead	0.05
Mercury	0.002
Nitrate (as N)	10
Selenium	0.01
Silver	0.05
Endrin	0.0002
Lindane	0.004
Methoxychlor	0.1
Toxaphene	0.005
2,4-D	0.1
2,4,5-TP Silver	0.01
Radium	5 pCi/1
Gross Alpha	15 pCi/1
Gross Beta	4 millirem/yr
Turbidity	1/TU
Coliform Bacteria	1/100 ml

Footnote: (Comment: Turbidity is applicable only to surface water supplies.)

Appendix IV-- Tests for Significance [40 CFR 265 Appendix IV]

As required in part (6)(d)2 of this rule the owner or operator must use the Student's t-test to determine statistically significant changes in the concentration or value of an indicator parameter in periodic ground-water samples when compared to the initial background concentration or value of that indicator parameter. The comparison must consider individually each of the wells in the monitoring system. For three of the indicator parameters (specific conductance, total organic carbon, and total organic halogen) a single-tailed Student's t-test must be used to test at the 0.01 level of significance for significant increases over background. The difference test for pH must be a two-tailed Student's t-test at the overall 0.01 level of significance.

The student's t-test involves calculation of the value of a t-statistic for each comparison of the mean (average) concentration or value (based on a minimum of four replicate measurements) of an indicator parameter with its initial background concentration or value. The calculated value of the t-statistic must then be compared to the value of the t-statistic found in a table for t-test of significance at the specified level of significance. A calculated value of t which exceeds the value of t found in the table indicates a statistically significant change in the concentration or value of the indicator parameter.

Formulae for calculation of the t-statistic and tables for t-test of significance can be found in most introductory statistics texts.

Appendix V -- Examples of Potentially Incompatible Waste [40 CFR 265 Appendix V]

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_2C1_2, $SOC1_2$, $PC1_3$, CH_3SiC1_3
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
Hyphochlorites
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.

* * * * * * * * * *

Appendix VI--Compounds With Henry's Law Constant Less Than 0.1 Y/X [40 CFR 265 Appendix VI]

Compound name	CAS No.
Acetaldol	107-89-1
Acetamide	60-35-5
2-Acetylaminofluorene	53-96-3
3-Acetyl-5-hydroxypiperidine	
3-Acetylpiperidine	618-42-8
1-Acetyl-2-thiourea	591-08-2
Acrylamide	79-06-1
Acrylic acid	79-10-7
Adenine	73-24-5
Adipic acid	124-04-9
Adiponitrile	111-69-3
Alachlor	15972-60-8
Aldicarb	116-06-3
Ametryn	834-12-8
4-Aminobiphenyl	92-67-1
4-Aminopyridine	504-24-5
Aniline	62-53-3
o-Anisidine	90-04-0
Anthraquinone	84-65-1
Atrazine	1912-24-9
Benzenearsonic acid	98-05-5
Benzenesulfonic acid	98-11-3
Benzidine	92-87-5
Benzo(a)anthracene	56-55-3
Benzo(k)fluoranthene	207-08-9
Benzoic acid	65-85-0
Benzo(g,h,i)perylene	191-24-2
Benzo(a)pyrene	50-32-8
Benzyl alcohol	100-51-6
gamma-BHC	58-89-9
Bis(2-ethylhexyl)phthalate	117-81-7
Bromochloromethyl acetate	
Bromoxynil	1689-84-5
Butyric acid	107-92-6
Caprolactam (hexahydro-2H-azepin-2-one)	105-60-2
Catechol (o-dihydroxybenzene)	120-80-9
Cellulose	9004-34-6
Cell wall	
Chlorhydrin (3-Chloro-1,2-propanediol).	96-24-2
Chloroacetic acid	79-11-8
2-Chloroacetophenone	93-76-5
p-Chloroaniline	106-47-8
p-Chlorobenzophenone	134-85-0
Chlorobenzilate	510-15-6
p-Chloro-m-cresol (6-chloro-m-cresol)	59-50-7
3-Chloro-2,5-diketopyrrolidine	

Chloro-1,2-ethane diol	
4-Chlorophenol	106-48-9
Chlorophenol polymers (2-chlorophenol & 4-chlorophenol)	95-57-8 & 106-48-9
1-(o-Chlorophenyl)thiourea	5344-82-1
Chrysene	218-01-9
Citric acid	77-92-9
Creosote	8001-58-9
m-Cresol	108-39-4
o-Cresol	95-48-7
p-Cresol	106-44-5
Cresol (mixed isomers)	19-77-3
4-Cumylphenol	27576-86
Cyanide	57-12-5
4-Cyanomethyl benzoate	
Diazinon	333-41-5
Dibenzo(a,h)anthracene	53-70-3
Dibutylphthalate	84-74-2
2,5-Dichloroaniline (N,N'-dichloroaniline)	95-82-9
2,6-Dichlorobenzonitrile11	1194-65-6
2,6-Dichloro-4-nitroaniline	99-30-9
2,5-Dichlorophenol	333-41-5
3,4-Dichlorotetrahydrofuran	3511-19
Dichlorvos (DDVP)	62-73-7
Diethanolamine	111-42-2
N,N-Diethylaniline	91-66-7
Diethylene glycol	111-46-6
Diethylene glycol dimethyl ether (dimethyl Carbitol)	111-96-6
Diethylene glycol monobutyl ether (butyl Carbitol)	112-34-5
Diethylene glycol monoethyl ether acetate (Carbitol acetate)	112-15-2
Diethylene glycol monoethyl ether (Carbitol Cellosolve)	111-90-0
Diethylene glycol monomethyl ether (methyl Carbitol)	111-77-3
N,N'-Diethylhydrazine	1615-80-1
Diethyl (4-methylumbelliferyl) thionophosphate	299-45-6
Diethyl phosphorothioate	126-75-0
N,N'-Diethylpropionamide	15299-99-7
Dimethoate	60-51-5
2,3-Dimethoxystrychnidin-10-one	357-57-3
4-Dimethylaminoazobenzene	60-11-7
7,12-Dimethylbenz(a)anthracene	57-97-6
3,3-Dimethylbenzidine	119-93-7
Dimethylcarbamoyl chloride	79-44-7
Dimethyldisulfide	624-92-0
Dimethylformamide	68-12-2
1,1-Dimethylhydrazine	57-14-7
Dimethylphthalate	131-11-3
Dimethylsulfone	67-71-0
Dimethylsulfoxide	67-68-5
4,6-Dinitro-o-cresol	534-52-1
1,2-Diphenylhydrazine	122-66-7
Dipropylene glycol (1,1'-oxydi-2-propanol)	110-98-5
Endrin	72-20-8
Epinephrine	51-43-4
mono-Ethanolamine	141-43-5
Ethyl carbamate (urethane)	5-17-96
Ethylene glycol	107-21-1
Ethylene glycol monobutyl ether (butyl Cellosolve)	111-76-2
Ethylene glycol monoethyl ether (Cellosolve)	110-80-5
Ethylene glycol monoethyl ether acetate (Cellosolve acetate)	111-15-9

Ethylene glycol monomethyl ether (methyl Cellosolve)	109-86-4
Ethylene glycol monophenyl ether (phenyl Cellosolve)	122-99-6
Ethylene glycol monopropyl ether (propyl Cellosolve)	2807-30-9
Ethylene thiourea (2-imidazolidinethione)	96-45-7
4-Ethylmorpholine	100-74-3
3-Ethylphenol	620-17-7
Fluoroacetic acid, sodium salt	62-74-8
Formaldehyde	50-00-0
Formamide	75-12-7
Formic acid	64-18-6
Fumaric acid	110-17-8
Glutaric acid	110-94-1
Glycerin (Glycerol)	56-81-5
Glycidol	556-52-5
Glycinamide	598-41-4
Glyphosate	1071-83-6
Guthion	86-50-0
Hexamethylene-1,6-diisocyanate (1,6-diisocyanatohexane)	822-06-0
Hexamethyl phosphoramide	680-31-9
Hexanoic acid	142-62-1
Hydrazine	302-01-2
Hydrocyanic acid	74-90-8
Hydroquinone	123-31-9
Hydroxy-2-propionitrile (hydracrylonitrile)	109-78-4
Indeno (1,2,3-cd) pyrene	193-39-5
Lead acetate	301-04-2
Lead subacetate (lead acetate, monobasic)	1335-32-6
Leucine	61-90-5
Malathion	121-75-5
Maleic acid	110-16-7
Maleic anhydride	108-31-6
Mesityl oxide	141-79-7
Methane sulfonic acid	75-75-2
Methomyl	16752-77-5
p-Methoxyphenol	150-76-5
Methyl acrylate	96-33-3
4,4'-Methylene-bis-(2-chloroaniline)	101-14-4
4,4'-Methylenediphenyl diisocyanate (diphenyl methane diisocyanate)	101-68-8
4,4'-Methylenedianiline	101-77-9
Methylene diphenylamine (MDA)	
5-Methylfurfural	620-02-0
Methylhydrazine	60-34-4
Methyliminoacetic acid	
Methyl methane sulfonate	66-27-3
1-Methyl-2-methoxyaziridine	
Methylparathion	298-00-0
Methyl sulfuric acid (sulfuric acid, dimethyl ester)	77-78-1
4-Methylthiophenol	106-45-6
Monomethylformamide (N-methylformamide)	123-39-7
Nabam	142-59-6
alpha-Naphthol	90-15-3
beta-Naphthol	135-19-3
alpha-Naphthylamine	134-32-7
beta-Naphthylamine	91-59-8
Neopentyl glycol (dimethylpropane)	126-30-7
Niacinamide	98-92-0
o-Nitroaniline	88-74-4
Nitroglycerin	55-63-0

2-Nitrophenol	88-75-5
4-Nitrophenol	100-02-7
N-Nitrosodimethylamine	62-75-9
Nitrosoguanidine	674-81-7
N-Nitroso-n-methylurea	684-93-5
N-Nitrosomorpholine (4-nitrosomorpholine)	59-89-2
Oxalic acid	144-62-7
Parathion	56-38-2
Pentaerythritol	115-77-5
Phenacetin	62-44-2
Phenol	108-95-2
Phenylacetic acid	103-82-2
m-Phenylene diamine	108-45-2
o-Phenylene diamine	95-54-5
p-Phenylene diamine	106-50-3
Phenyl mercuric acetate	62-38-4
Phorate	298-02-2
Phthalic anhydride	85-44-9
alpha-Picoline (2-methyl pyridine)	109-06-8
1,3-Propane sultone	1120-71-4
beta-Propiolactone	57-57-8
Proporur (Baygon)	
Propylene glycol	57-55-6
Pyrene	129-00-0
Pyridinium bromide	39416-48-3
Quinoline	91-22-5
Quinone (p-benzoquinone)	106-51-4
Resorcinol	108-46-3
Simazine	122-34-9
Sodium acetate	127-09-3
Sodium formate	141-53-7
Strychnine	57-24-9
Succinic acid	110-15-6
Succinimide	123-56-8
Sulfanilic acid	121-47-1
Terephthalic acid	100-21-0
Tetraethyldithiopyrophosphate	3689-24-5
Tetraethylenepentamine	112-57-2
Thiofanox	39196-18-4
Thiosemicarbazide	79-19-6
2,4-Toluenediamine	95-80-7
2,6-Toluenediamine	823-40-5
3,4-Toluenediamine	496-72-0
2,4-Toluene diisocyanate	584-84-9
p-Toluic acid	99-94-5
m-Toluidine	108-44-1
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1
Triethanolamine	102-71-6
Triethylene glycol dimethyl ether	
Tripropylene glycol	24800-44-0
Warfarin	81-81-2
3,4-Xylenol (3,4-dimethylphenol)	95-65-8

NOTE: RELATION BETWEEN HENRY'S LAW CONSTANT AS Y/X (MOLE FRACTION GAS PHASE/MOLE FRACTION AQUEOUS PHASE, UNITLESS) AND HENRY'S LAW CONSTANT AS EQUILIBRIUM CONSTANT (K_a) IN UNITS OF ATMOSPHERES/(MOLE/M^3):
$Y/X = K_a \times 5.2 \times 10^{-4}$; THUS, 0.1 $Y/X = 1.8 \times 10^{-4}$ atmospheres/mole/m^3, which is the partial pressure of the compound in the gas phase in equilibrium with the compound dissolved in water at a concentration of one mole per cubic meter. (Volume of one cubic meter=1,000 liters=1 kiloliter.)

Authority: T.C.A. §§ 68-212-101 et seq. and 4-5-201 et seq.

* If a roll-call vote was necessary, the vote by the Agency on these rulemaking hearing rules was as follows:

Board Member	Aye	No	Abstain	Absent	Signature (if required)
Dr. Warren Anderson	✓				
Michael Atchison	✓				
Elaine Boyd	✓				
Melissa Bryant				✓	
Dr. Jack Deibert	✓				
Kenneth Donaldson	✓				
Dr. George Hyfantis, Jr.	✓				
Jared L. Lynn	✓				
Mayor Franklin Smith, III	✓				
Mark Williams				✓	
Glenn Youngblood	✓				

I certify that this is an accurate and complete copy of rulemaking hearing rules, lawfully promulgated and adopted by the Solid Waste Disposal Control Board on 10/04/2011, and is in compliance with the provisions of TCA 4-5-222.

I further certify the following:

Notice of Rulemaking Hearing filed with the Department of State on: 06/07/11

Rulemaking Hearing(s) Conducted on: (add more dates). 08/05/11

Date: October 4, 2011

Signature: [signature]

Name of Officer: Kenneth Donaldson

Title of Officer: Chairman

MARY EVANS
STATE OF TENNESSEE
NOTARY PUBLIC
DAVIDSON COUNTY

Subscribed and sworn to before me on: October 4, 2011

Notary Public Signature: Mary Evans

My commission expires on: January 6, 2014

All rulemaking hearing rules provided for herein have been examined by the Attorney General and Reporter of the State of Tennessee and are approved as to legality pursuant to the provisions of the Administrative Procedures Act, Tennessee Code Annotated, Title 4, Chapter 5.

[signature]

Robert E. Cooper, Jr.
Attorney General and Reporter

6-12-12

Date

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Tre Hargett
Secretary of State

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PUBLICATIONS

Public Hearing Comments

One copy of a document containing responses to comments made at the public hearing must accompany the filing pursuant to T.C.A. §4-5-222. Agencies shall include only their responses to public hearing comments, which can be summarized. No letters of inquiry from parties questioning the rule will be accepted. When no comments are received at the public hearing, the agency need only draft a memorandum stating such and include it with the Rulemaking Hearing Rule filing. Minutes of the meeting will not be accepted. Transcripts are not acceptable.

Comment: While reviewing the public notice and comparing its contents against the technical corrections and clarifications that EPA published on March 18, 2010, June 4, 2010 and December 20, 2010, a commenter noticed that some of EPA's technical corrections and clarifications were missing. These omissions are required to be included in order for the state to maintain state authorization for the program. Therefore, the following corrections or clarifications should be made to conform to EPA's regulations:

Rule 0400-12-01-.01: The definition of "new hazardous waste management facility" in paragraph (2): Delete the obsolete verbiage and replace it with October 31, 1980, since that is the date hazardous waste first became subject to regulation in Tennessee.

Rule 0400-12-01-.02: Subpart (1)(b)3(iv): In the Table under the category of scrap metal correct the reference to excluded scrap metal to be consistent with EPA; in subparts (1)(g)2(i) and (iii) delete the reference to subparagraph (4)(c) since that subparagraph does not contained listed acute hazardous waste; in subparts (1)(e)5(i) and (ii) delete the reference to subparagraph (4)(c) since that subparagraph does not contained listed acute hazardous waste; in part (1)(e)6 reorder the phrases so that "under this subparagraph" follows "from full regulation" to make it consistent with EPA; in part (1)(e)7 amend the language to make it consistent with EPA; in subpart (1)(e)7(ii): amend the language to make it consistent with EPA; in subpart (1)(f)1(ii), to be consistent with EPA, add references to paragraphs (13) and (14) of Rule 0400-12-01-.09; in part (4)(a)3 amend the language to be consistent with EPA; in part (4)(a)4 delete the reference to subparagraph (4)(c) since that subparagraph does not contained listed acute hazardous waste; and in part (4)(c)1 in the listed description for K107 change the word "hydrazines" to its correct spelling "hydrazides".

Rule 0400-12-01-.03: in subpart (4)(e)2(iv) to be consistent with EPA, change the subpart to clarify that generators accumulating hazardous waste on-site must also comply with all applicable requirements under Rule 0400-12-01-.10 (Land Disposal Restrictions); in part (4)(e)3 change the language of this part to be consistent with the language used by EPA; in subparts (4)(e)5(i) and (ii) delete the reference to subparagraph (4)(c) since that subparagraph does not contained listed acute hazardous waste; in subpart (4)(e)6(vi) to be consistent with EPA change the subpart to clarify that generators accumulating hazardous waste on-site must also comply with all applicable requirements under Rule 0400-12-01-.10 (Land Disposal Restrictions); in part (5)(c)3 use the correct regulatory reference in Rule 040-12-01-.05 and 0400-12-01-.06 to be consistent with EPA; in part (8)(a)2 change the reference from "part (3)(a)1" to "subparagraph (3)(a)" to be consistent with EPA; in part (12)(a)1 change the language in this part to be consistent with EPA; in item (12)(g)2(iii)(I) change the word "consolidating" to "bulking" to be consistent with EPA; in part (12)(l)3 change the language in this part to be consistent with the change made to part (12)(a)1; in subpart (12)(m)5(i) change the language in this subpart to be consistent with EPA; in subpart (12)(o)1(i) change the language in this subpart to be consistent with EPA; and in subpart (12)(o)2(i) change the language in this subpart to be consistent with EPA.

Response: The Department agrees and all of the requested changes have been made.

Comment: On May 14, 2009, EPA published in the Federal Register a notice that the National Environmental Performance Track Program was terminated. All regulations referring to EPA's Performance Track Program should be terminated and it is recommended that the following regulations be appropriately amended, deleted, or deleted and its place "reserved" since they are now obsolete:

Rule 0400-12-01-.01: in subparagraph (2)(a) the definitions of "performance track member facility" and "source at a performance track member facility" should be deleted.

Rule 0400-12-01-.03: In parts (12)(a)1 and (12)(l)3 amend out the reference to the performance track program.

Rule 0400-12-01-.05: Subparts (2)(f)2(iv) and (v) should be deleted and reserved; in subparagraph (9)(e) amend out the reference to the performance track program; part (10)(f)4 should be deleted and reserved; part (10)(l)5 should be deleted and reserved; and in subpart (30)(b)3(iv) amend out the reference to the performance track program.

Response: The Department checked with EPA Region IV and was directed to delete all references to the National Performance Track Program from Tennessee's regulations since that program has been terminated by the EPA. Therefore, the Department agrees with the commenter and all requested changes (deletions) have been made.

Regulatory Flexibility Addendum
Pursuant to T.C.A. § 4-5-401 through 4-5-404, prior to initiating the rule making process as described in T.C.A. § 4-5-202(a)(3) and T.C.A. § 4-5-202(a), all agencies shall conduct a review of whether a proposed rule or rule affects small businesses.

This rulemaking includes the adoption of the December 1, 2008, federal revisions that establishes a voluntary alternate set of generator requirements applicable to laboratories owned by eligible academic entities; the adoption of the January 8, 2010, federal revisions incorporating recent changes to the agreements concerning transboundary movement of hazardous waste among countries belonging to the Organization for Economic Cooperation and Development (OECD); and the federal technical corrections published by EPA on March 18, 2010, June 4, 2010 and December 20, 2010. The vast majority of the changes to these regulations substantially codify federal regulations. On May 14, 2009, EPA published in the Federal Register a notice that the National Environmental Performance Track Program was terminated, and as result, all references to this program have been eliminated from these rules. The remaining changes are those necessary to change the regulatory Chapter designation from "1200-01-11" to "0400-12-01", correcting typos, delete obsolete language, and to make general housekeeping changes. Therefore, these questions regarding the impact on small businesses will address the impact of the non-federal changes.

(1) The type or types of small business and an identification and estimate of the number of small businesses subject to the proposed rule that would bear the cost of, or directly benefit from the proposed rule.

This rulemaking changes the rule numbers from Chapter 1200-01-11 to 0400-12-01. It also makes housekeeping changes correcting editorial errors. Therefore, there is no impact on small business.

(2) The projected reporting, recordkeeping, and other administrative costs required for compliance with the proposed rule, including the type of professional skills necessary for preparation of the report or record.

There are no projected additional reporting, recordkeeping or administrative costs as a result of this rulemaking.

(3) A statement of the probable effect on impacted small businesses and consumers.

There is no adverse affect on small businesses as a result of this rulemaking.

(4) A description of any less burdensome, less intrusive or less costly alternative methods of achieving the purpose and objectives of the proposed rule that may exist, and to what extent the alternative means might be less burdensome to small business.

The Department is unaware of alternatives to the proposed rules.

(5) A comparison of the proposed rule with any federal or state counterparts.

There is no exact match with any federal or state counterparts.

(6) Analysis of the effect of the possible exemption of small businesses from all or any part of the requirements contained in the proposed rule.

Due to the administrative nature of this rulemaking, small businesses could not be exempt from this rulemaking.

Impact on Local Governments

Pursuant to T.C.A. 4-5-220 and 4-5-228 "any rule to proposed to be promulgated shall state in a simple declarative sentence, without additional comments on the merits of the policy of the rules or regulation, whether the rule or regulation may have a projected impact on local governments." (See Public Chapter Number 1070 (http://state.tn.us/sos/acts/106/pub/pc1070.pdf) of the 2010 Session of the General Assembly)

The Department does not anticipate that this rulemaking will have an impact on local government.

Additional Information Required by Joint Government Operations Committee

All agencies, upon filing a rule, must also submit the following pursuant to TCA 4-5-226(i)(1).

(A) A brief summary of the rule and a description of all relevant changes in previous regulations effectuated by such rule;

This rulemaking includes the adoption of the December 1, 2008, federal revisions that establishes a voluntary alternate set of generator requirements applicable to laboratories owned by eligible academic entities; the adoption of the January 8, 2010, federal revisions incorporating recent changes to the agreements concerning transboundary movement of hazardous waste among countries belonging to the Organization for Economic Cooperation and Development (OECD); and the federal technical corrections published by EPA on March 18, 2010, June 4, 2010 and December 20, 2010. The vast majority of the changes to these regulations substantially codify federal regulations. On May 14, 2009, EPA published in the Federal Register a notice that the National Environmental Performance Track Program was terminated, and as result, all references to this program have been eliminated from these rules. The remaining changes reflect a reorganization of all TDEC rules in order to be more logical and user friendly. The regulatory Chapter designation is being changed from "1200-01-11" to "0400-12-01", along with correcting typos, delete obsolete language, and to make general housekeeping changes.

(B) A citation to and brief description of any federal law or regulation or any state law or regulation mandating promulgation of such rule or establishing guidelines relevant thereto;

These rules are promulgated under the authorities of T.C.A. §§ 68-212-101 et seq. and 4-5-201 et seq.

(C) Identification of persons, organizations, corporations or governmental entities most directly affected by this rule, and whether those persons, organizations, corporations or governmental entities urge adoption or rejection of this rule;

All entities regulated under T.C.A. §§ 68-212-101 et seq. are affected by this rule. None of these affected entities commented on this rule change.

(D) Identification of any opinions of the attorney general and reporter or any judicial ruling that directly relates to the rule;

The Board is not aware of any related Attorney General Actions or judicial ruling directly relating to the rule.

(E) An estimate of the probable increase or decrease in state and local government revenues and expenditures, if any, resulting from the promulgation of this rule, and assumptions and reasoning upon which the estimate is based. An agency shall not state that the fiscal impact is minimal if the fiscal impact is more than two percent (2%) of the agency's annual budget or five hundred thousand dollars ($500,000), whichever is less;

The Department is not aware of any increase of decrease of revenues resulting from this rulemaking.

(F) Identification of the appropriate agency representative or representatives, possessing substantial knowledge and understanding of the rule;

David Moran
Division of Solid Waste Management
5th Floor, L & C Tower, 401 Church Street
Nashville, TN 37243
Phone: (615) 532-0875

(G) Identification of the appropriate agency representative or representatives who will explain the rule at a scheduled meeting of the committees;

Alan M. Leiserson
Legal Services Director, Office of General Counsel

Tennessee Department of Environment and Conservation
20th Floor, L & C Tower
Nashville, TN 37243-1548

(H) Office address, telephone number, and email address of the agency representative or representatives who will explain the rule at a scheduled meeting of the committees; and

Legal Services Director, Office of General Counsel
Tennessee Department of Environment and Conservation
20th Floor, L & C Tower
Nashville, TN 37243-1548
Alan.Leiserson@tn.gov

(I) Any additional information relevant to the rule proposed for continuation that the committee requests.

The Board is not aware of any additional information requested by the committee.

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Sequence Number: _____
Rule ID(s): _____
File Date: _____
Effective Date: _____

Rulemaking Hearing Rule(s) Filing Form

Rulemaking Hearing Rules are rules filed after and as a result of a rulemaking hearing. TCA Section 4-5-205

Agency/Board/Commission:	Environment and Conservation
Division:	Solid Waste Management
Contact Person:	David Moran
Address:	5th Floor, L & C Annex 401 Church Street Nashville, Tennessee
Zip:	37243-1535
Phone:	(615) 532-0875
Email:	David.Moran@tn.gov

Revision Type (check all that apply):

___ Amendment
_X_ New
_X_ Repeal

Rule(s) Revised (**ALL** chapters and rules contained in filing must be listed here. If needed, copy and paste additional tables to accommodate multiple chapters. Please enter only **ONE** Rule Number/Rule Title per row)

Chapter Number	**Chapter Title**
0400-12-01	Hazardous Waste Management
Rule Number	**Rule Title**
0400-12-01-.01	Hazardous Waste Management System: General
0400-12-01-.02	Identification and Listing of Hazardous Waste
0400-12-01-.03	Notification Requirements and Standards Applicable to Generators of Hazardous Wastes
0400-12-01-.04	Requirements Applicable to Transfer Facilities and Permit Requirements and Standards Applicable to Transporters of Hazardous Waste
0400-12-01-.05	Interim Status Standards for Owners and Operators of Existing Hazardous Waste Treatment, Storage, and Disposal Facilities

Chapter Number	**Chapter Title**
1200-01-11	Hazardous Waste Management Regulations
Rule Number	**Rule Title**
1200-01-11-.01	Hazardous Waste Management System: General
1200-01-11-.02	Identification and Listing of Hazardous Waste
1200-01-11-.03	Notification Requirements and Standards Applicable to Generators of Hazardous Wastes
1200-01-11-.04	Requirements Applicable to Transfer Facilities and Permit Requirements and Standards Applicable to Transporters of Hazardous Waste
1200-01-11-.05	Interim Status Standards for Owners and Operators of Existing Hazardous Waste Treatment, Storage, and Disposal Facilities

(Place substance of rules and other info here. Statutory authority must be given for each rule change. For information on formatting rules go to http://tn.gov/sos/rules/1360/1360.htm)

Repeals

Chapter 1200-01-11
Hazardous Waste Management Regulations

Rules 1200-01-11-.01 Hazardous Waste Management System: General, 1200-01-11-.02 Identification and Listing of Hazardous Waste, 1200-01-11-.03 Notification Requirements and Standards Applicable to Generators of Hazardous Wastes, 1200-01-11-.04 Requirements Applicable to Transfer Facilities and Permit Requirements and Standards Applicable to Transporters of Hazardous Waste, and Rule 1200-01-11-.05 Interim Status Standards for Owners and Operators of Existing Hazardous Waste Treatment, Storage, and Disposal Facilities are repealed.

Authority: T.C.A. §§ 68-212-101 et seq. and 4-5-201 et seq.

New Rules

Chapter 0400-12-01
Hazardous Waste Management

~~1200-01-11-.01~~ 0400-12-01-.01 Hazardous Waste Management System: General

(1) General

(a) Purpose, Scope, and Applicability

This rule provides definitions of terms, general standards and procedures, and overview information applicable to these rules.

(b) Use of Number and Gender

As used in these rules:

1. Words in the masculine gender also include the feminine and neuter genders; and

2. Words in the singular include the plural; and

3. Words in the plural include the singular.

(c) Rule Structure

These rules are organized, numbered, and referenced according to the following outline form:

(1) paragraph

(a) subparagraph

1. part

(i) subpart

(I) item

I. subitem

A. section

(A) subsection

(2) Definitions and References

(a) Definitions

When used in Rules ~~1200-01-11-.01~~ 0400-12-01-.01 through .12, the following terms have the meanings given below unless otherwise specified:

"Above ground tank" means a device meeting the definition of "tank" in this subparagraph and that is situated in such a way that the entire surface area of the tank is completely above the plane of the adjacent surrounding surface and the entire surface area of the tank (including the tank bottom) is able to be visually inspected.

"Act" means the Tennessee Hazardous Waste Management Act, as amended, Tennessee Code Annotated (T.C.A.) §§ 68-212-101 et seq.

"Active life" of a facility means the period from the initial receipt of hazardous waste at the facility until the Commissioner receives certification of final closure.

"Active portion" means that portion of a facility where treatment, storage, or disposal operations are being or have been conducted after the date one or more of the hazardous wastes handled by the facility first became subject to regulation under rules promulgated under the Act and which is not a closed portion. (See also "closed portion" and "inactive portion".)

"Administrator" means the Administrator of the Environmental Protection Agency, or his designee.

"Application" means the EPA standards national forms for applying for a permit, including any additions, revisions or modifications to the forms; or forms approved by EPA for use in approved States, including any approved modifications or revisions. Application also includes the information required by the Commissioner under subparagraph (5)(a) through paragraph (6) of Rule 0400-12-01-.07 (contents of Part B of the hazardous waste management permit application).

"Approved program or approved State" means a State which has been approved or authorized by EPA under 40 CFR Part 271.

"Ancillary equipment" means any device including, but not limited to, such devices as piping, fittings, flanges, valves, and pumps, that is used to distribute, meter, or control the flow of hazardous waste from its point of generation to a storage or treatment tank(s), between hazardous waste storage and treatment tanks to a point of disposal onsite, or to a point of shipment for disposal off-site.

"Aquifer" means a geologic formation, group of formations, or part of a formation capable of yielding a significant amount of ground water to wells or springs.

"ASTM" means the American Society for Testing and Materials.

"Authorized representative" means the person responsible for the overall operation of a facility or an operational unit (i.e., part of a facility), e.g., the plant manager, superintendent or person of equivalent responsibility.

"Battery" means a device consisting of one or more electrically connected electrochemical cells which is designed to receive, store, and deliver electric energy. An electrochemical cell is a system consisting of an anode, cathode, and an electrolyte, plus such connections (electrical and mechanical) as may be needed to allow the cell to deliver or receive electrical energy. The term battery also includes an intact, unbroken battery from which the electrolyte has been removed.

"Board" means the Tennessee Solid Waste Disposal Control Board established by T.C.A. §68-211-111.

"Boiler" means an enclosed device using controlled flame combustion and having the following characteristics:

1. (i) The unit must have physical provisions for recovering and exporting thermal energy in the form of steam, heated fluids, or heated gases; and

   (ii) The unit's combustion chamber and primary energy recovery section(s) must be of integral design. To be of integral design, the combustion chamber and the primary energy recovery section(s) (such as waterwalls and superheaters) must be physically formed into one manufactured or assembled unit. A unit in which the combustion chamber and the primary energy recovery section(s) are joined only by ducts or connections carrying flue gas is not integrally designed; however, secondary energy recovery equipment (such as economizers or air preheaters) need not be physically formed into the same unit as the combustion chamber and the primary energy recovery section. The following units are not precluded from being boilers solely because they are not of integral design: process heaters (units that transfer energy directly to a process stream), and fluidized bed combustion units; and

   (iii) While in operation, the unit must maintain a thermal energy recovery efficiency of at least 60 percent, calculated in terms of the recovered energy compared with the thermal value of the fuel; and

   (iv) The unit must export and utilize at least 75 percent of the recovered energy, calculated on an annual basis. In this calculation, no credit shall be given for recovered heat used internally in the same unit (examples of internal use are the preheating of fuel or combustion air, and the driving of induced or forced draft fans or feedwater pumps); or

2. The unit is one which the Commissioner has determined, on a case-by-case basis, to be a boiler, after considering the standards in subparagraph (5)(a) of this rule.

"Carbon regeneration unit" means any enclosed thermal treatment device used to regenerate spent activated carbon.

"Cathode ray tube" or CRT means a vacuum tube, composed primarily of glass, which is the visual or video display component of an electronic device. A used, intact CRT means a CRT whose vacuum has not been released. A used, broken CRT means glass removed from its housing or casing whose vacuum has been released.

"Certification" means a statement of professional opinion based upon knowledge and belief.

"CFR" means the Code of Federal Regulations.

"Closed portion" means that portion of a facility which an owner or operator has closed in accordance with the approved facility closure plan and all applicable closure requirements. (See also "active portion" and "inactive portion".)

"Commissioner" means the Commissioner of the Tennessee Department of Environment and Conservation (formerly the Tennessee Department of Health and Environment) or his authorized representative.

"Component" means any constituent part of a unit or any group of constituent parts of a unit assembled to perform a specific function (e.g., a pump seal, pump, kiln liner, kiln thermocouple) when used in Rule ~~1200-01-11-.07~~ 0400-12-01-.07 and, when used otherwise in these rules, means either the tank or ancillary equipment of a tank system.

"Confined aquifer" means an aquifer bounded above and below by impermeable beds or by beds of distinctly lower permeability than that of the aquifer itself; an aquifer containing confined ground water.

"Conglomerate Waste Stream" means the mixture of individual wastewater streams at the point of entry into either the headworks of an on-site wastewater treatment plant or the sewer system that leads to a publicly owned treatment works (POTW).

"Container" means any portable device in which a material is stored, transported, treated, disposed of, or otherwise handled.

"Containment building" means a hazardous waste management unit that is used to store or treat hazardous waste under the provisions of Rule ~~1200-01-11-.06~~ 0400-12-01-.06(33) and ~~1200-01-11-.05~~ 0400-12-01-.05(30).

"Contingency plan" means a document setting out an organized, planned, and coordinated course of action to be followed in case of a fire, explosion, or release of hazardous waste or hazardous waste constituents which could threaten public health or the environment.

"Corrective action management unit" or "CAMU" means an area within a facility that is used only for managing remediation wastes for implementing corrective action or cleanup at the facility.

"Corrosion expert" means a person who, by reason of his knowledge of the physical sciences and the principles of engineering and mathematics, acquired by a professional education and related practical experience, is qualified to engage in the practice of corrosion control on buried or submerged metal piping systems and metal tanks. Such a person must be certified as being qualified by the National Association of Corrosion Engineers (NACE) or be a registered professional engineer who has certification or licensing that includes education and experience in corrosion control on buried or submerged metal piping systems and metal tanks.

"CRT collector" means a person who receives used, intact CRTs for recycling, repair, resale, or donation.

"CRT glass manufacturer" means an operation or part of an operation that uses a furnace to manufacture CRT glass.

"CRT processing" means conducting all of the following activities:

1. Receiving broken or intact CRTs; and

2. Intentionally breaking intact CRTs or further breaking or separating broken CRTs; and

3. Sorting or otherwise managing glass removed from CRT monitors.

"CWA" means the Clean Water Act (formerly referred to as the Federal Water Pollution Act or Federal Water Pollution Control Act amendments of 1972) Pub. L. 92-500, as amended by Publ. L. 92-217 and Publ. L. 95-576; 33 U.S. C. 1251 et seq.

"Department" means the Tennessee Department of Environment and Conservation (formerly Tennessee Department of Health and Environment).

"Designated facility" means:

1. A hazardous waste treatment, storage, or disposal facility which:

   (i) Has received a permit (or interim status) in accordance with the requirements of Rule ~~1200-01-11-.07~~ 0400-12-01-.07; or

(ii) Has received a permit (or interim status) from a State authorized in accordance with 40 CFR 271; or

(iii) Is regulated under subpart (1)(f)3(ii) of Rule ~~1200-01-11-.02~~ 0400-12-01-.02 or paragraph (6) of Rule ~~1200-01-11-.09~~ 0400-12-01-.09; and

(iv) Has been designated on the manifest by the generator pursuant to subparagraph (3)(a) of Rule ~~1200-01-11-.03~~ 0400-12-01-.03.

2. Designated facility also means a generator site designated on the manifest to receive its waste as a return shipment from a facility that has rejected the waste in accordance with part (5)(c)6 of Rule ~~1200-01-11-.05~~ 0400-12-01-.05 or Rule ~~1200-01-11-.06~~ 0400-12-01-.06.

3. If a waste is destined to a facility in an authorized State which has not yet obtained authorization to regulate that particular waste as hazardous, then the designated facility must be a facility allowed by the receiving State to accept such waste.

"Destination facility" means a facility that treats, disposes of, or recycles a particular category of universal waste, except those management activities described in parts (2)(d)1 and 3 and (3)(d)1 and 3 of Rule ~~1200-01-11-.12~~ 0400-12-01-.12. A facility at which a particular category of universal waste is only accumulated, is not a destination facility for purposes of managing that category of universal waste.

"Dike" means an embankment or ridge of either natural or man-made materials used to prevent the movement of liquids, sludges, solids, or other materials.

"Dioxins and furans" (D/F) means tetra-, penta-, hexa-, hepta-, and octa-chlorinated dibenzo dioxins and furans.

"Discharge" or "hazardous waste discharge" means the accidental or intentional spilling, leaking, pumping, pouring, emitting, emptying, or dumping of hazardous waste into or on any land or water.

"Disposal" means the discharge, deposit, injection, dumping, spilling, leaking, or placing of any hazardous waste into or on any land, water or air so that such hazardous waste or any constituent thereof may enter the environment or be emitted into the air or discharged into any waters, including ground waters.

"Disposal facility" means a facility or part of a facility at which hazardous waste is intentionally placed into or on any land or water, and at which waste will remain after closure. The term disposal facility does not include a corrective action management unit into which remediation wastes are placed.

"Division Director" or "Director" means the Director of the Division of Solid Waste Management of the Department, or his designee. This person also serves as the Technical Secretary to the Board, and functions as the chief of staff to both the Commissioner and the Board in matters relating to these rules and their implementation.

"DOT" means the U.S. Department of Transportation.

"Drip pad" is an engineered structure consisting of a curbed, free-draining base, constructed of non-earthen materials and designed to convey preservative kick-back or drippage from treated wood, precipitation, and surface water run-on to an associated collection system at wood preserving plants.

"Elementary neutralization unit" means a device which:

1. Is used for neutralizing wastes that are hazardous only because they exhibit the corrosivity characteristic defined in Rule ~~1200-01-11-.02~~ 0400-12-01-.02(3)(c), or they are listed in Rule ~~1200-01-11-.02~~ 0400-12-01-.02(4) only for this reason; and

2. Meets the definition of tank, tank system, container, transport vehicle, or vessel in this subparagraph.

"Emergency permit" means a hazardous waste management permit issued in accordance with Rule 0400-12-01-.07(1)(d).

"EPA" means the U.S. Environmental Protection Agency.

"EPA Identification Number" is synonymous with "Installation Identification Number."

"EPA region" means the states and territories found in any one of the following ten regions:

Region I - Maine, Vermont, New Hampshire, Massachusetts, Connecticut, and Rhode Island.

Region II - New York, New Jersey, Commonwealth of Puerto Rico, and the U.S. Virgin Islands.

Region III - Pennsylvania, Delaware, Maryland, West Virginia, Virginia, and the District of Columbia.

Region IV - Kentucky, Tennessee, North Carolina, Mississippi, Alabama, Georgia, South Carolina, and Florida.

Region V - Minnesota, Wisconsin, Illinois, Michigan, Indiana, and Ohio.

Region VI - New Mexico, Oklahoma, Arkansas, Louisiana, and Texas.

Region VII - Nebraska, Kansas, Missouri, and Iowa.

Region VIII - Montana, Wyoming, North Dakota, South Dakota, Utah, and Colorado.

Region IX - California, Nevada, Arizona, Hawaii, Guam, American Samoa, Commonwealth of the Northern Mariana Islands.

Region X - Washington, Oregon, Idaho, and Alaska.

"Equivalent method" means any testing or analytical method approved by the Commissioner under Rule ~~1200-01-11-.01~~ 0400-12-01-.01(3).

"Existing hazardous waste management facility" or "existing facility" means a facility which was in operation, or for which construction had commenced, on or before the date on which one or more of the hazardous wastes handled or to be handled by the facility first became subject to regulation under rules promulgated under the Act. Construction has commenced if:

1. The owner or operator has obtained all necessary Federal, State, and local preconstruction approvals or permits; and either

2. (i) A continuous physical, on-site construction program has begun; or

   (ii) The owner or operator has entered into contractual obligations -- which cannot be canceled or modified without substantial loss -- for construction of the facility to be completed within a reasonable time.

"Existing portion" means that land surface area of an existing waste management unit, included in the original Part A permit application, on which wastes have been placed prior to the issuance of a permit.

"Existing tank system" or "existing component" means a tank system or component that is used for the storage or treatment of hazardous waste and that is in operation, or for which installation has commenced on or prior to July 14, 1986. Installation will be considered to have commenced if the owner or operator has obtained all Federal, State, and local approvals or permits necessary to begin physical construction of the site or installation of the tank system and if either (1) a continuous on-site physical construction or installation program has begun, or (2) the owner or operator has entered into contractual obligations - which cannot be canceled or modified without substantial loss - for physical construction of the site or installation of the tank system to be completed within a reasonable time.

"Explosives or munitions emergency" means a situation involving the suspected or detected presence of unexploded ordnance (UXO), damaged or deteriorated explosives or munitions, an improvised explosive device (IED), other potentially explosive material or device, or other potentially harmful military chemical munitions or device, that creates an actual or potential imminent threat to human health, including safety, or the environment, including property, as determined by an explosives or munitions emergency response specialist. Such situations may require immediate and expeditious action by an explosives or munitions emergency response specialist to control, mitigate, or eliminate the threat.

"Explosives or munitions emergency response" means all immediate response activities by an explosives and munitions emergency response specialist to control, mitigate, or eliminate the actual or potential threat encountered during an explosives or munitions emergency. An explosives or munitions emergency response may include in-place render-safe procedures, treatment or destruction of the explosives or munitions and/or transporting those items to another location to be rendered safe, treated, or destroyed. Any reasonable delay in the completion of an explosives or munitions emergency response caused by a necessary, unforeseen, or uncontrollable circumstance will not terminate the explosives or munitions emergency. Explosives and munitions emergency responses can occur on either public or private lands and are not limited to responses at RCRA facilities.

"Explosives or munitions emergency response specialist" means an individual trained in chemical or conventional munitions or explosives handling, transportation, render-safe procedures, or destruction techniques. Explosives or munitions emergency response specialists include Department of Defense (DOD) emergency explosive ordnance disposal (EOD), technical escort unit (TEU), and DOD-certified civilian or contractor personnel; and other Federal, State, or local government, or civilian personnel similarly trained in explosives or munitions emergency responses.

"Facility" means:

1. All contiguous land, and structures, other appurtenances, and improvements on the land, used for treating, storing, or disposing of hazardous waste. A facility may consist of several treatment, storage, or disposal operational units (e.g., one or more landfills, surface impoundments, or combinations of them).

2. For the purpose of implementing corrective action under Rule ~~1200-01-11-.06~~ 0400-12-01-.06(6)(l), all contiguous property under the control of the owner or operator seeking a permit under the Tennessee Hazardous Waste Management Act, T.C.A. §§ 68-212-101 et seq. This definition also applies to facilities implementing corrective action under T.C.A. § 68-212-111.

3. Notwithstanding part 2 of this definition, a remediation waste management site is not a facility that is subject to Rule ~~1200-01-11-.06~~ 0400-12-01-.06(6)(l), but is subject to corrective action requirements if the site is located within such a facility.

"Facility mailing list" means the mailing list for a facility maintained by the Department in accordance with Rule ~~1200-01-11-.07~~ 0400-12-01-.07(7)(e)3(i)(V).

"Federal agency" means any department, agency, or other instrumentality of the Federal Government, any independent agency or establishment of the Federal Government including any Government corporation, and the Government Printing Office.

"Federal, State and local approvals or permits necessary to begin physical construction" means permits and approvals required under Federal, State or local hazardous waste control statutes, regulations or ordinances.

"FIFRA" means the Federal Insecticide, Fungicide, and Rodenticide Act (7 U.S.C. 136-136y).

"Final authorization" means approval by EPA of a State program which has met the requirements of Section 3006(b) of RCRA and the applicable requirements of 40 CFR Part 271, Subpart A.

"Final closure" means the closure of all hazardous waste management units at the facility in accordance with all applicable closure requirements so that hazardous waste management activities under Rules ~~1200-01-11-.05~~ 0400-12-01-.05 and ~~1200-01-11-.06~~ 0400-12-01-.06 are no longer conducted at the facility unless subject to the provisions in Rule ~~1200-01-11-.03~~ 0400-12-01-.03(4)(e).

"Food-chain crops" means tobacco, crops grown for human consumption, and crops grown for feed for animals whose products are consumed by humans.

"Freeboard" means the vertical distance between the top of a tank or surface impoundment dike, and the surface of the waste contained therein.

"Free liquids" means liquids which readily separate from the solid portion of a waste under ambient temperature and pressure.

"Functionally equivalent component" means a component which performs the same function or measurement and which meets or exceeds the performance specifications of another component.

"Furans" – see "Dioxins and furans".

"Gasification" for the purpose of complying with Rule ~~1200-01-11-.02~~ 0400-12-01-.02(1)(d)1(xii) means a process, conducted in an enclosed device or system, designed and operated to process petroleum feedstock, including oil-bearing hazardous secondary materials through a series of highly controlled steps utilizing thermal decomposition, limited oxidation, and gas clearing to yield a synthesis gas composed primarily of hydrogen and carbon monoxide gas.

"Generation" means the act or process of producing hazardous wastes.

"Generator" means any person, by site, whose act or process produces hazardous waste identified or listed in Rule ~~1200-01-11-.02~~ 0400-12-01-.02 or whose act first causes a hazardous waste to become subject to regulation.

"Ground water" means water below the land surface in a zone of saturation.

"Hazardous waste" means a hazardous waste as defined in Rule ~~1200-01-11-.02~~ 0400-12-01-.02(1)(c).

"Hazardous waste code" means the code assigned by the Department to each hazardous waste listed in Rule ~~1200-01-11-.02~~ 0400-12-01-.02(4) and to each characteristic identified in Rule ~~1200-01-11-.02~~ 0400-12-01-.02(3), and any derivation of such codes which may be assigned by the Department to an individual waste or class of wastes.

"Hazardous waste constituent" means a constituent that caused the Board to list the hazardous waste in Rule ~~1200-01-11-.02~~ 0400-12-01-.02(4), or a constituent listed in Table 1 of Rule ~~1200-01-11-.02~~ 0400-12-01-.02(3)(e).

"Hazardous waste management unit" is a contiguous area of land on or in which hazardous waste is placed, or the largest area in which there is significant likelihood of mixing hazardous waste constituents in the same area. Examples of hazardous waste management units include a surface impoundment, a waste pile, a land treatment area, a landfill cell, an incinerator, a tank and its associated piping and underlying containment system, and a container storage area. A container alone does not constitute a unit; the unit includes containers and the land or pad upon which they are placed.

"HWM facility" means Hazardous Waste Management facility.

"Inactive portion" means that portion of a facility which is not operated after the date one or more of the hazardous wastes handled by the facility first became subject to regulation under rules promulgated under the Act. (See also "active portion" and "closed portion".)

"Incinerator" means any enclosed device that:

1. Uses controlled flame combustion and neither meets the criteria for classification as a boiler, sludge dryer, or carbon regeneration unit, nor is listed as an industrial furnace; or

2. Meets the definition of infrared incinerator or plasma arc incinerator.

"Incompatible waste" means a hazardous waste which is unsuitable for:

1. Placement in a particular device or facility because it may cause corrosion or decay of containment materials (e.g., container inner liners or tank walls); or

2. Commingling with another waste or material under uncontrolled conditions because the commingling might produce heat or pressure, fire or explosion, violent reaction, toxic dusts, mists, fumes, or gases, or flammable fumes or gases.

   (See Appendix V at Rule ~~1200-01-11-.05~~ 0400-12-01-.05(53) and at Rule ~~1200-01-11-.06~~ 0400-12-01-.06(57) for examples.)

"Individual generation site" means the contiguous site at or on which one or more hazardous wastes are generated. An individual generation site, such as a large manufacturing plant, may have one or more sources of hazardous waste but is considered a single or individual generation site if the site or property is contiguous.

"Industrial furnace" means any of the following enclosed devices that are integral components of manufacturing processes and that use thermal treatment to accomplish recovery of materials or energy:

1. Cement kilns

2. Lime kilns

3. Aggregate kilns

4. Phosphate kilns

5. Coke ovens

6. Blast furnaces

7. Smelting, melting and refining furnaces (including pyrometallurgical devices such as cupolas, reverberator furnaces, sintering machines, roasters, and foundry furnaces)

8. Titanium dioxide chloride process oxidation reactors

9. Methane reforming furnaces

10. Pulping liquor recovery furnaces

11. Combustion devices used in the recovery of sulfur values from spent sulfuric acid

12. Halogen acid furnaces (HAFs) for the production of acid from halogenated hazardous waste generated by chemical production facilities where the furnace is located on the site of a chemical production facility, the acid product has a halogen acid content of at least 3%, the acid product is used in a manufacturing process, and, except for hazardous waste burned as fuel, hazardous waste fed to the furnace has a minimum halogen content of 20% as-generated.

13. Such other devices as the Commissioner may, after notice and comment, add to this list on the basis of one or more of the following factors:

    (i) The design and use of the device primarily to accomplish recovery of material products;

    (ii) The use of the device to burn or reduce raw materials to make a material product;

    (iii) The use of the device to burn or reduce secondary materials as effective substitutes for raw materials, in processes using raw materials as principal feedstocks;

    (iv) The use of the device to burn or reduce secondary materials as ingredients in an industrial process to make a material product;

    (v) The use of the device in common industrial practice to produce a material product; and

    (vi) Other factors, as appropriate.

"Infrared incinerator" means any enclosed device that uses electric powered resistance heaters as a source of radiant heat followed by an afterburner using controlled flame combustion and which is not listed as an industrial furnace.

"Inground tank" means a device meeting the definition of "tank" in this subparagraph whereby a portion of the tank wall is situated to any degree within the ground, thereby preventing visual inspection of that external surface area of the tank that is in the ground.

"Injection well" means a well into which fluids are injected. "Class I" injection wells include wells used by generators of hazardous wastes or owners or operators of hazardous waste management facilities to inject hazardous waste, other than Class IV wells. "Class IV" injection wells include wells used by generators of hazardous wastes or owners or operators of hazardous waste management facilities to dispose of hazardous wastes into or above a formation which within one quarter mile of the well contains an underground source of drinking water. (See also "underground injection".)

"Inner liner" means a continuous layer of material placed inside a tank or container which protects the construction materials of the tank or container from the contained waste or reagents used to treat the waste.

"In operation" refers to a facility which is treating, storing, or disposing of hazardous waste.

"Installation identification number" ("EPA Identification Number") means the number assigned to each generator, transporter, and treatment, storage, or disposal facility by the Department or EPA. For generators and facilities in this state, and for transporters who pick up hazardous waste from, or deliver hazardous waste to, locations in this state, references in these rules to their installation identification number shall mean the number assigned by the Department. For other generators, transporters, and facilities, such references shall mean the number assigned by EPA.

"Installation inspector" means a person who, by reason of his knowledge of the physical sciences and the principles of engineering, acquired by a professional education and related practical experience, is qualified to supervise the installation of tank systems.

"Interim authorization" means approval by EPA of State hazardous waste program which has met the requirements of Section 3006(g)(2) of RCRA and applicable requirements of 40 CFR Part 271, Subpart B.

"International shipment" means the transportation of hazardous waste into or out of the jurisdiction of the United States.

"Lamp," also referred to as "universal waste lamp," is defined as the bulb or tube portion of an electric lighting device. A lamp is specifically designed to produce radiant energy, most often in the ultraviolet, visible, and infra-red regions of the electromagnetic spectrum. Examples of common universal waste electric lamps include, but are not limited to, fluorescent, high intensity discharge, neon, mercury vapor, high pressure sodium, and metal halide lamps.

"Land Disposal" when used with respect to a specified hazardous waste, shall be deemed to include, but not be limited to, any placement of such hazardous waste in a landfill, surface impoundment, waste pile, injection well, land treatment facility, salt dome formation, salt bed formation, or underground mine or cave.

"Landfill" means a disposal facility or part of a facility where hazardous waste is placed in or on land and which is not a pile, a land treatment facility, a surface impoundment, an underground injection well, a salt dome formation, a salt bed formation, an underground mine, a cave, or a corrective action management unit.

"Landfill cell" means a discrete volume of a hazardous waste landfill which uses a liner to provide isolation of wastes from adjacent cells or wastes. Examples of landfill cells are trenches and pits.

"Land treatment facility" means a facility or part of a facility at which hazardous waste is applied onto or incorporated into the soil surface; such facilities are disposal facilities if the waste will remain after closure.

"Large Quantity Handler of Universal Waste" means a universal waste handler (as defined in this subparagraph) who accumulates 5,000 kilograms or more total of universal waste (batteries, pesticides, thermostats, or lamps calculated collectively) at any time. This designation as a large quantity handler of universal waste is retained through the end of the calendar year in which 5,000 kilograms or more total of universal waste is accumulated.

"Leachate" means any liquid, including any suspended components in the liquid, that has percolated through or drained from hazardous waste.

"Leak-detection system" means a system capable of detecting the failure of either the primary or secondary containment structure or the presence of a release of hazardous waste or accumulated liquid in the secondary containment structure. Such a system must employ operational controls (e.g., daily visual inspections for releases into the secondary containment system of aboveground tanks) or consist of an interstitial monitoring device designed to detect continuously and automatically the failure of the primary or secondary containment structure or the presence of a release of hazardous waste into the secondary containment structure.

"Liner" means a continuous layer of natural or man-made materials, beneath or on the sides of a surface impoundment, landfill, or landfill cell, which restricts the downward or lateral escape of hazardous waste, hazardous waste constituents, or leachate.

"Major facility" means any facility or activity classified as such by the Regional Administrator, or, in the case of approved State programs, the Regional Administrator in conjunction with the State Director.

"Management" or "waste management" or "hazardous waste management" means the orderly control of storage, transportation, treatment, and disposal of hazardous waste.

"Manifest" means the shipping document EPA Form 8700-22 (including if necessary, EPA Form 8700-22A), originated and signed by the generator or offeror in accordance with the instructions in Appendix I of Rule ~~1200-01-11-.03~~ 0400-12-01-.03(9)(a) and the applicable requirements of Rules ~~1200-01-11-.03~~ 0400-12-01-.03 through ~~1200-01-11-.06~~ 0400-12-01-.06.

"Manifest tracking number" means the alphanumeric identification number (i. e., a unique three letter suffix preceded by nine numerical digits), which is pre-printed in Item 4 of the Manifest by a registered source.

"Mercury-containing equipment" means a device or part of a device (including thermostats, but excluding batteries and lamps) that contains elemental mercury integral to its function.

"Military munitions" means all ammunition products and components produced or used by or for the U.S. Department of Defense or the U.S. Armed Services for national defense and security, including military munitions under the control of the Department of Defense, the U.S. Coast Guard, the U.S. Department of Energy (DOE), and National Guard personnel. The term military munitions includes: confined gaseous, liquid, and solid propellants, explosives, pyrotechnics, chemical and riot control agents, smokes, and incendiaries used by DOD components, including bulk explosives and chemical warfare agents, chemical munitions, rockets, guided and ballistic missiles, bombs, warheads, mortar rounds, artillery ammunition, small arms ammunition, grenades, mines, torpedoes, depth charges, cluster munitions and dispensers, demolition charges, and devices and components thereof. Military munitions do not include wholly inert items, improvised explosive devices, and nuclear weapons, nuclear devices, and nuclear components thereof. However, the term does include non-nuclear components of nuclear devices, managed under DOE's nuclear weapons program after all required sanitization operations under the Atomic Energy Act of 1954, as amended, have been completed.

"Mining overburden returned to the mine site" means any material overlying an economic mineral deposit which is removed to gain access to that deposit and is then used for reclamation of a surface mine.

"Miscellaneous unit" means a hazardous waste management unit where hazardous waste is treated, stored, or disposed of and that is not a container, tank, surface impoundment, pile, land treatment unit, landfill, incinerator, boiler, industrial furnace, underground injection well with appropriate technical standards under 40 CFR part 146 (as that Federal Regulation exists on the effective date of these rules), containment building, corrective action management unit, unit eligible for a research, development, and demonstration permit under Rule ~~1200-01-11-.07~~ 0400-12-01-.07(1)(g), or staging pile.

"Movement" means that hazardous waste transported to a facility in an individual vehicle.

"National Pollutant Discharge Elimination System" means the national program for issuing, modifying, revoking and reissuing, termination, monitoring and enforcing permits, and imposing and enforcing pretreatment requirements, under sections 307, 402, 318, and 405 of the CWA. The term includes an approved program.

"New hazardous waste management facility" or "new facility" means a facility which began operation, or for which construction commenced after ~~the date on which one or more of the hazardous wastes handled or to be handled by the facility first become subject to regulation under rules promulgated under the Act~~ October 31, 1980. (See also "existing hazardous waste management facility".)

"New tank system" or "new tank component" means a tank system or component that will be used for the storage or treatment of hazardous waste and for which installation has commenced after July 14, 1986; except, however, for purposes of Rules ~~1200-01-11-.05~~ 0400-12-01-.05(10)(d)7(ii) and .06(10)(d)7(ii), a new tank system is one for which construction commences after July 14, 1986. (See also "existing tank system.")

"NPDES" means National Pollutant Discharge Elimination System.

"Off-site" means any site which is not on-site.

"On ground tank" means a device meeting the definition of "tank" in this subparagraph and that is situated in such a way that the bottom of the tank is on the same level as the adjacent surrounding surface so that the external tank bottom cannot be visually inspected.

"On-site" means the same or geographically contiguous property which may be divided by public or private right-of-way, provided the entrance and exit between the properties is at a cross-roads intersection, and access is by crossing as opposed to going along the right-of-way. Non-contiguous properties owned by the same person but connected by a right-of-way which he controls and to which the public does not have access, are also considered on-site property.

"Open burning" means the combustion of any material without the following characteristics:

1. Control of combustion air to maintain adequate temperature for efficient combustion,

2. Containment of the combustion-reaction in an enclosed device to provide sufficient residence time and mixing for complete combustion, and

3. Control of emission of the gaseous combustion products. (See also "incineration" and "thermal treatment".)

"Operator" means the person responsible for the overall operation of a facility.

"Owner" means the person who owns a facility or part of a facility.

"Partial closure" means the closure of a hazardous waste management unit in accordance with the applicable closure requirements of Rules ~~1200-01-11-.05~~ 0400-12-01-.05 and ~~1200-01-11-.06~~ 0400-12-01-.06 at a facility that contains other active hazardous waste management units. For example, partial closure may include the closure of a tank (including its associated piping and underlying containment systems), landfill cell, surface impoundment, waste pile, or other hazardous waste management unit, while other units of the same facility continue to operate.

"Permit" means an authorization, license, or equivalent control document issued by EPA or an approved State to implement the requirements of Rule 0400-12-01-.07. Permit includes permit-by-rule (Rule 0400-12-01-.07(1)(c)), and emergency permit (Rule 0400-12-01-.07(1)(d)). Permit does not include interim status (Rule 0400-12-01-.07(3)), or any permit which has not been the subject of final agency action, such as a draft permit or a proposed permit.

"Permit-by-rule" means a provision of these regulations stating that a facility or activity is deemed to have a permit if it meets the requirements of the provision.

~~"Performance Track member facility" means a facility that has been accepted by EPA for membership in the National Environmental Performance Track Program and is still a member of the Program. The National Environmental Performance Track Program is a voluntary, facility~~

~~based, program for top environmental performers. Facility members must demonstrate a good record of compliance, past success in achieving environmental goals, and commit to future specific quantified environmental goals, environmental management systems, local community outreach, and annual reporting of measurable results.~~

"Person" means an individual, trust, firm, joint stock company, corporation (including a government corporation), partnership, association, state, municipality, commission, political subdivision of a state, any interstate body, and governmental agency of this state and any department, agency, or instrumentality of the executive, legislative, and judicial branches of the federal government.

"Personnel" or "facility personnel" means all persons who work at, or oversee the operations of, a hazardous waste facility, and whose actions or failure to act may result in noncompliance with the requirements of Rules ~~1200-01-11-.05~~ 0400-12-01-.05 or ~~1200-01-11-.06~~ 0400-12-01-.06.

"Pesticide" means any substance or mixture of substances intended for preventing, destroying, repelling, or mitigating any pest, or intended for use as a plant regulator, defoliant, or desiccant, other than any article that:

1. Is a new animal drug under FFDCA section 201(w), or

2. Is an animal drug that has been determined by regulation of the Secretary of Health and Human Services not to be a new animal drug, or

3. Is an animal feed under FFDCA section 201(x) that bears or contains any substances described by parts 1 or 2 of this definition.

"Physical construction" means excavation, movement of earth, erection of forms or structures, or similar activity to prepare an HWM facility to accept hazardous waste.

"Pile" means any non-containerized accumulation of solid, nonflowing hazardous waste that is used for treatment or storage and that is not a containment building.

"Plasma arc incinerator" means any enclosed device using a high intensity electrical discharge or arc as a source of heat followed by an afterburner using controlled flame combustion and which is not listed as an industrial furnace.

"Point source" means any discernible, confined, and discrete conveyance, including, but not limited to any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, or vessel or other floating craft, from which pollutants are or may be discharged. This term does not include return flows from irrigated agriculture.

"Pollution Prevention" means source reduction as defined under the Pollution Prevention Act (42 U. S. C. 13101-13109). The definition is as follows:

1. Source reduction is any practice that:

   (i) Reduces the amount of any hazardous substance, pollutant, or contaminant entering any waste stream or otherwise released into the environment (including fugitive emissions) prior to recycling, treatment or disposal; and

   (ii) Reduces the hazards to public health and the environment associated with the release of such substances, pollutants, or contaminants.

2. The term source reduction includes equipment or technology modifications, process or procedure modifications, reformulation or redesign of products, substitutions of raw materials, and improvements in housekeeping, maintenance, training, or inventory control.

3. The term source reduction does not include any practice that alters the physical, chemical, or biological characteristics or the volume of a hazardous substance, pollutant, or contaminant through a process or activity which itself is not integral to and necessary for the production of a product or the providing of a service.

"PSC" which means the Tennessee Public Service Commission, was abolished. Pertinent functions are now handled by the "Tennessee Regulatory Commission."

"Publicly owned treatment works" or "POTW" means any device or system used in the treatment (including recycling and reclamation) of municipal sewage or industrial wastes of a liquid nature which is owned by the "State" or a "municipality" (as defined by Section 502(4) of CWA). This definition includes sewers, pipes, or other conveyances only if they convey wastewater to a POTW providing treatment.

"Qualified Ground-Water Scientist" means a scientist or engineer who has received a baccalaureate or post-graduate degree in the natural sciences or engineering, and has sufficient training and experience in ground-water hydrology and related fields as may be demonstrated by state registration, professional certifications, or completion of accredited university courses that enable that individual to make sound professional judgments regarding ground-water monitoring and contaminant fate and transport.

"RCRA" means the Solid Waste Disposal Act as amended by the Resource Conservation and Recovery Act of 1976 (Pub. L. 94-580, as amended by Pub. L. 95-609 and Pub. L. 96-482, 42 U.S.C. 6901 et seq.)

"Regional Administrator" means the Regional Administrator for the EPA Region in which the facility is located, or his designee.

"Registered engineer" or "registered professional engineer" refers to a person authorized to perform engineering in Tennessee pursuant to Tennessee Code Annotated, Title 62, Chapter 2.

"Remedial Action Plan (RAP)" means a special form of RCRA permit that a facility owner or operator may obtain instead of a permit issued under paragraphs (1), (2), and (4) through (9) of Rule ~~1200-01-11-.07~~ 0400-12-01-.07, to authorize the treatment, storage or disposal of hazardous remediation waste (as defined in this subparagraph) at a remediation waste management site.

"Remediation waste" means all solid and hazardous wastes, and all media (including groundwater, surface water, soils, and sediments) and debris, that are managed for implementing cleanup.

"Remediation waste management site" means a facility where an owner or operator is or will be treating, storing or disposing of hazardous remediation wastes. A remediation waste management site is not a facility that is subject to corrective action under Rule ~~1200-01-11-.06~~ 0400-12-01-.06(6)(l), but is subject to corrective action requirements if the site is located in such a facility.

"Replacement unit" means a landfill, surface impoundment, or waste pile unit (1) from which all or substantially all of the waste is removed, and (2) that is subsequently reused to treat, store, or dispose of hazardous waste. "Replacement unit" does not apply to a unit from which waste is removed during closure, if the subsequent reuse solely involves the disposal of waste from that unit and other closing units or corrective action areas at the facility, in accordance with an approved closure plan or EPA or State approved corrective action.

"Representative sample" means a sample of a universe or whole (e.g., waste pile, lagoon, ground water) which can be expected to exhibit the average properties of the universe or whole.

"Run-off" means any rainwater, leachate, or other liquid that drains over land from any part of a facility.

"Run-on" means any rainwater, leachate, or other liquid that drains over land onto any part of a facility.

"Saturated zone" or "zone of saturation" means that part of the earth's crust in which all voids are filled with water.

"Schedule of compliance" means a schedule of remedial measures included in a permit, including an enforceable sequence of interim requirements (for example, actions, operations, or milestone events) leading to compliance with the Act and regulations.

"SDWA" means the Safe Drinking Water Act (Pub. L. 95-523, as amended by Pub. L. 95-1900; 42 U.S.C. 3001 et seq.)

"Site" means the land or water area where any facility or activity is physically located or conducted, including adjacent land used in connection with the facility or activity.

"Sludge" means any solid, semi-solid, or liquid waste generated from a municipal, commercial, or industrial wastewater treatment plant, water supply treatment plant, or air pollution control facility exclusive of the treated effluent from a wastewater treatment plant.

"Sludge dryer" means any enclosed thermal treatment device that is used to dehydrate sludge and that has a maximum total thermal input, excluding the heating value of the sludge itself, of 2,500 Btu/lb of sludge treated on a wet-weight basis.

"Small Quantity Generator" means a generator who generates less than 1000 kg of hazardous waste in a calendar month.

"Small Quantity Handler of Universal Waste" means a universal waste handler (as defined in this subparagraph) who does not accumulate more than 5,000 kilograms total of universal waste (batteries, pesticides, thermostats, or lamps calculated collectively) at any time.

"Solid waste" means a waste as defined in Rule ~~1200-01-11-.02~~ 0400-12-01-.02(1)(b).

"Sorbent" means a material that is used to soak up free liquids by either adsorption or absorption, or both. Sorb means to either adsorb or absorb, or both.

~~"Source at a Performance Track member facility" means a major or area source located at a facility which has been accepted by EPA for membership in the Performance Track Program (as described at http://www.epa.gov/PerformanceTrack) and is still a member of the Program. The Performance Track Program is a voluntary program that encourages continuous environmental improvement through the use of environmental management systems, local community outreach, and measurable results.~~

"Staging pile" means an accumulation of solid, non-flowing remediation waste "as defined in this subparagraph) that is not a containment building and that is used only during remedial operations for temporary storage at a facility. Staging piles must be designated by the Director according to the requirements of Rule ~~1200-01-11-.06~~ 0400-12-01-.06(22)(e).

"State" means the State of Tennessee.

"State/EPA Agreement" means an agreement between the Regional Administrator and the State which coordinates EPA and State activities, responsibilities and programs.

"Storage" means the containment of hazardous waste in such a manner as not to constitute disposal of such hazardous waste.

"Sump" means any pit or reservoir that meets the definition of tank and those troughs/trenches connected to it that serve to collect hazardous waste for transport to hazardous waste storage,

treatment, or disposal facilities; except that as used in the landfill, surface impoundment, and waste pile rules, "sump" means any lined pit or reservoir that serves to collect liquids drained from a leachate collection and removal system or leak detection system for subsequent removal from the system.

"Surface impoundment" or "impoundment" means a facility or part of a facility which is a natural topographic depression, man-made excavation, or diked area formed primarily of earthen materials (although it may be lined with man-made materials), which is designed to hold an accumulation of liquid wastes or wastes containing free liquids, and which is not an injection well. Examples of surface impoundments are holding, storage, settling, and aeration pits, ponds, and lagoons.

"Tank" means a stationary device, designed to contain an accumulation of hazardous waste which is constructed primarily of non-earthen materials (e.g., wood, concrete, steel, plastic) which provide structural support.

"Tank system" means a hazardous waste storage or treatment tank and its associated ancillary equipment and containment system.

"T.C.A." means Tennessee Code Annotated.

"Tennessee Regulatory Commission (TRC)" means the agency now handling pertinent functions formerly handled by the PSC.

"TEQ" means toxicity equivalence, the international method of relating the toxicity of various dioxin/furan congeners to the toxicity of 2, 3, 7, 8-tetrachlorodibenzo-p-dioxin.

"Thermal treatment" means the treatment of hazardous waste in a device which uses elevated temperatures as the primary means to change the chemical, physical, or biological character or composition of the hazardous waste. Examples of thermal treatment processes are incineration, molten salt, pyrolysis, calcination, wet air oxidation, and microwave discharge. (See also "incinerator" and "open burning".)

"Totally enclosed treatment facility" means a facility for the treatment of hazardous waste which is directly connected to an industrial production process and which is constructed and operated in a manner which prevents the release of any hazardous waste or any constituent thereof into the environment during treatment. An example is a pipe in which waste acid is neutralized.

"Transfer facility" means any transportation related facility including loading docks, parking areas, storage areas and other similar areas where shipments of hazardous waste are held during the normal course of transportation.

"Transportation" means the movement of hazardous waste by air, rail, highway, or water.

"Transporter" means any person engaged in the transportation of hazardous waste.

"Transport vehicle" means a motor vehicle or rail car used for the transportation of cargo by any mode. Each cargo-carrying body (trailer, railroad freight car, etc.) is a separate transport vehicle.

"Treatability Study" means a study in which a hazardous waste is subjected to a treatment process to determine: (1) Whether the waste is amenable to the treatment process, (2) what pretreatment (if any) is required, (3) the optimal process conditions needed to achieve the desired treatment, (4) the efficiency of a treatment process for a specific waste or wastes, or (5) the characteristics and volumes of residuals from a particular treatment process. Also included in this definition for the purpose of Rule ~~1200-01-11-.02~~ 0400-12-01-.02(1)(d)5 and 6 exemptions are liner compatibility, corrosion, and other material compatibility studies and toxicological and health effects studies. A "treatability study" is not a means to commercially treat or dispose of hazardous waste.

"Treatment" means any method, technique, or process, including neutralization, designed to change the physical, chemical, or biological character or composition of any hazardous waste so as to neutralize such waste, or so as to recover energy or material resources from the waste, or so as to render such waste non-hazardous, or less hazardous; safer to transport, store, or dispose of; or amenable for recovery, amenable for storage, or reduced in volume.

"Treatment zone" means a soil area of the unsaturated zone of a land treatment unit within which hazardous waste constituents are degraded, transformed, or immobilized.

"24-hour, 25-year storm" means a storm of 24-hour duration with a probable recurrence interval of once in 25 years.

"UIC" means the Underground Injection Control Program under Part C of the Safe Drinking Water Act, including an approved program.

"Underground injection" means the subsurface emplacement of fluids through a bored, drilled or driven well; or through a dug well, where the depth of the dug well is greater than the largest surface dimension. (See also "injection well".)

"Underground source of drinking water (USDW)" means an aquifer or its portion:

1. (i) Which supplies any public water system; or

   (ii) Which contains a sufficient quantity of ground water to supply a public water system; and

      (I) Currently supplies drinking water for human consumption; or

      (II) Contains fewer than 10,000 mg/1 total dissolved solids; and

2. Which is not an exempted aquifer.

"Underground tank" means a device meeting the definition of "tank" in this subparagraph whose entire surface area is totally below the surface of and covered by the ground.

"Unfit-for-use tank system" means a tank system that has been determined through an integrity assessment or other inspection to be no longer capable of storing or treating hazardous waste without posing a threat of release of hazardous waste to the environment.

"United States" means the 50 States, the District of Columbia, the Commonwealth of Puerto Rico, the U.S. Virgin Islands, Guam, American Samoa, and the Commonwealth of the Northern Mariana Islands.

"Universal Waste" means any of the hazardous wastes listed in Rule ~~1200-01-11-.12~~ 0400-12-01-.12(1)(a) that are managed under the universal waste requirements of Rule ~~1200-01-11-.12~~ 0400-12-01-.12.

"Universal Waste Handler":

1. Means:

   (i) A generator (as defined in this subparagraph) of universal waste; or

   (ii) The owner or operator of a facility, including all contiguous property, that receives universal waste from other universal waste handlers, accumulates universal waste, and sends universal waste to another universal waste handler, to a destination facility, or to a foreign destination.

2. Does not mean:

(i) A person who treats (except under the provisions of Rule ~~1200-01-11-.12~~ 0400-12-01-.12(2)(d)1 or 3, or Rule ~~1200-01-11-.12~~ 0400-12-01-.12(3)(d)1 or 3), disposes of, or recycles universal waste; or

(ii) A person engaged in the off-site transportation of universal waste by air, rail, highway, or water, including a universal waste transfer facility.

"Universal Waste Transfer Facility" means any transportation-related facility including loading docks, parking areas, storage areas and other similar areas where shipments of universal waste are held during the normal course of transportation for ten days or less.

"Universal Waste Transporter" means a person engaged in the off-site transportation of universal waste by air, rail, highway, or water.

"Unsaturated zone" or "zone of aeration" means the zone between the land surface and the water table.

"Uppermost aquifer" means the geologic formation nearest the natural ground surface that is an aquifer, as well as lower aquifers that are hydraulically interconnected with this aquifer within the facility's property boundary.

"Used oil" means any oil that has been refined from crude oil, or any synthetic oil, that has been used and as a result of such use is contaminated by physical or chemical impurities.

"Vessel" includes every description of watercraft, used or capable of being used as a means of transportation on the water.

"Waste" means a solid waste as defined in Rule ~~1200-01-11-.02~~ 0400-12-01-.02(1)(b).

"Wastewater treatment unit" means a device which:

1. Is part of a wastewater treatment facility that is subject to regulation under either section 402 or 307(b) of the Clean Water Act; and

2. Receives and treats or stores an influent wastewater that is a hazardous waste as defined in Rule ~~1200-01-11-.02~~ 0400-12-01-.02(1)(c) or generates and accumulates a wastewater treatment sludge which is a hazardous waste as defined in Rule ~~1200-01-11-.02~~ 0400-12-01-.02(1)(c), or treats or stores a wastewater treatment sludge which is a hazardous waste as defined in Rule ~~1200-01-11-.02~~ 0400-12-01-.02(1)(c); and

3. Meets the definition of tank or tank system in this subparagraph.

"On-site wastewater treatment units" are those which receive solely wastes generated on-site (according to the definition of "on-site" found in this subparagraph). "Off-site wastewater treatment units" are those which receive wastes generated by facilities that are not on-site.

"Water (bulk shipment)" means the bulk transportation of hazardous waste which is loaded or carried on board a vessel without containers or labels.

"Well" means any shaft or pit dug or bored into the earth, generally of a cylindrical form, and often walled with bricks or tubing to prevent the earth from caving in.

"Well injection": (See "underground injection".)

"Zone of engineering control" means an area under the control of the owner/operator that, upon detection of a hazardous waste release, can be readily cleaned up prior to the release of hazardous waste or hazardous constituents to ground water or surface water.

(b) References [40 CFR 260.11]

1. Publications/materials and where they may be obtained referred to in these rules are set forth by EPA in 40 CFR 260.11.

(Note: 40 CFR 260.11 provides that:

(a) When used in parts 260 through 268 of this chapter, the following publications are incorporated by reference. These incorporations by reference were approved by the Director of the Federal Register pursuant to 5 U.S.C. 552(a) and 1 CFR part 51. These materials are incorporated as they exist on the date of approval and a notice of any change in these materials will be published in the Federal Register. Copies may be inspected at the Library, U.S. Environmental Protection Agency, 1200 Pennsylvania Ave., NW. (3403T), Washington, DC 20460, libraryhq@epa.gov; or at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202–741–6030, or go to:
http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html.

(b) The following materials are available for purchase from the American Society for Testing and Materials, 100 Barr Harbor Drive, P.O. Box C700, West Conshohocken, PA 19428–2959.

(1) ASTM D–93–79 or D–93–80, "Standard Test Methods for Flash Point by Pensky-Martens Closed Cup Tester," IBR approved for §261.21.

(2) ASTM D–1946–82, "Standard Method for Analysis of Reformed Gas by Gas Chromatography," IBR approved for §§264.1033, 265.1033.

(3) ASTM D 2267–88, "Standard Test Method for Aromatics in Light Naphthas and Aviation Gasolines by Gas Chromatography," IBR approved for §264.1063.

(4) ASTM D 2382–83, "Standard Test Method for Heat of Combustion of Hydrocarbon Fuels by Bomb Calorimeter (High-Precision Method)," IBR approved for §§264.1033, 265.1033.

(5) ASTM D 2879–92, "Standard Test Method for Vapor Pressure—Temperature Relationship and Initial Decomposition Temperature of Liquids by Isoteniscope," IBR approved for §265.1084.

(6) ASTM D–3278–78, "Standard Test Methods for Flash Point for Liquids by Setaflash Closed Tester," IBR approved for §261.21(a).

(7) ASTM E 168–88, "Standard Practices for General Techniques of Infrared Quantitative Analysis," IBR approved for §264.1063.

(8) ASTM E 169–87, "Standard Practices for General Techniques of Ultraviolet-Visible Quantitative Analysis," IBR approved for §264.1063.

(9) ASTM E 260–85, "Standard Practice for Packed Column Gas Chromatography," IBR approved for §264.1063.

(10) ASTM E 926–88, "Standard Test Methods for Preparing Refuse-Derived Fuel (RDF) Samples for Analyses of Metals," Test Method C—Bomb, Acid Digestion Method.

(c) The following materials are available for purchase from the National Technical Information Service, 5285 Port Royal Road, Springfield, VA 22161; or for

purchase from the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402, (202) 512–1800.

(1) "APTI Course 415: Control of Gaseous Emissions," EPA Publication EPA–450/2–81–005, December 1981, IBR approved for §§264.1035 and 265.1035.'

(2) Method 1664, Revision A, n-Hexane Extractable Material (HEM; Oil and Grease) and Silica Gel Treated n-Hexane Extractable Material (SGT–HEM; Non-polar Material) by Extraction and Gravimetry, PB99–121949, IBR approved for part 261, appendix IX.

(3) The following methods as published in the test methods compendium known as "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA Publication SW–846, Third Edition. A suffix of "A" in the method number indicates revision one (the method has been revised once). A suffix of "B" in the method number indicates revision two (the method has been revised twice). A suffix of "C" in the method number indicates revision three (the method has been revised three times). A suffix of "D" in the method number indicates revision four (the method has been revised four times).

(i) Method 0010, dated September 1986 and in the Basic Manual, IBR approved for part 261, appendix IX.

(ii) Method 0020, dated September 1986 and in the Basic Manual, IBR approved for part 261, appendix IX.

(iii) Method 0030, dated September 1986 and in the Basic Manual, IBR approved for part 261, appendix IX.

(iv) Method 1320, dated September 1986 and in the Basic Manual, IBR approved for part 261, appendix IX.

(v) Method 1311, dated September 1992 and in Update I, IBR approved for part 261, appendix IX, and §§261.24, 268.7, 268.40.

(vi) Method 1330A, dated September 1992 and in Update I, IBR approved for part 261, appendix IX.

(vii) Method 1312 dated September 1994 and in Update II, IBR approved for part 261, appendix IX.

(viii) Method 0011, dated December 1996 and in Update III, IBR approved for part 261, appendix IX, and part 266, appendix IX.

(ix) Method 0023A, dated December 1996 and in Update III, IBR approved for part 261, appendix IX, part 266, appendix IX, and §266.104.

(x) Method 0031, dated December 1996 and in Update III, IBR approved for part 261, appendix IX.

(xi) Method 0040, dated December 1996 and in Update III, IBR approved for part 261, appendix IX.

(xii) Method 0050, dated December 1996 and in Update III, IBR approved for part 261, appendix IX, part 266, appendix IX, and §266.107.

(xiii) Method 0051, dated December 1996 and in Update III, IBR approved for part 261, appendix IX, part 266, appendix IX, and §266.107.

(xiv) Method 0060, dated December 1996 and in Update III, IBR approved for part 261, appendix IX, §266.106, and part 266, appendix IX.

(xv) Method 0061, dated December 1996 and in Update III, IBR approved for part 261, appendix IX, §266.106, and part 266, appendix IX.

(xvi) Method 9071B, dated April 1998 and in Update IIIA, IBR approved for part 261, appendix IX.

(xvii) Method 1010A, dated November 2004 and in Update IIIB, IBR approved for part 261, appendix IX.

(xviii) Method 1020B, dated November 2004 and in Update IIIB, IBR approved for part 261, appendix IX.

(xix) Method 1110A, dated November 2004 and in Update IIIB, IBR approved for §261.22 and part 261, appendix IX.

(xx) Method 1310B, dated November 2004 and in Update IIIB, IBR approved for part 261, appendix IX.

(xxi) Method 9010C, dated November 2004 and in Update IIIB, IBR approved for part 261, appendix IX and §§268.40, 268.44, 268.48.

(xxii) Method 9012B, dated November 2004 and in Update IIIB, IBR approved for part 261, appendix IX and §§268.40, 268.44, 268.48.

(xxiii) Method 9040C, dated November 2004 and in Update IIIB, IBR approved for part 261, appendix IX and §261.22.

(xxiv) Method 9045D, dated November 2004 and in Update IIIB, IBR approved for part 261, appendix IX.

(xxv) Method 9060A, dated November 2004 and in Update IIIB, IBR approved for part 261, appendix IX, and §§264.1034, 264.1063, 265.1034, 265.1063.

(xxvi) Method 9070A, dated November 2004 and in Update IIIB, IBR approved for part 261, appendix IX.

(xxvii) Method 9095B, dated November 2004 and in Update IIIB, IBR approved, part 261, appendix IX, and §§264.190, 264.314, 265.190, 265.314, 265.1081, 268.32.

(d) The following materials are available for purchase from the National Fire Protection Association, 1 Batterymarch Park, P.O. Box 9101, Quincy, MA 02269–9101.

(1) "Flammable and Combustible Liquids Code" (1977 or 1981), IBR approved for §§264.198, 265.198.

(2) [Reserved]

(e) The following materials are available for purchase from the American Petroleum Institute, 1220 L Street, Northwest, Washington, DC 20005.

(1) API Publication 2517, Third Edition, February 1989, "Evaporative Loss from External Floating-Roof Tanks," IBR approved for §265.1084.

(2) [Reserved]

(f) The following materials are available for purchase from the Environmental Protection Agency, Research Triangle Park, NC.

(1) "Screening Procedures for Estimating the Air Quality Impact of Stationary Sources, Revised", October 1992, EPA Publication No. EPA–450/R–92–019, IBR approved for part 266, appendix IX.

(2) [Reserved]

(g) The following materials are available for purchase from the Organisation for Economic Co-operation and Development, Environment Direcorate, 2 rue Andre Pascal, 75775 Paris Cedex 16, France.

(1) OECD Green List of Wastes (revised May 1994), Amber List of Wastes and Red List of Wastes (both revised May 1993) as set forth in Appendix 3, Appendix 4 and Appendix 5, respectively, to the OECD Council Decision C(92)39/FINAL *(Concerning the Control of Transfrontier* Movements of Wastes Destined for Recovery Operations), IBR approved for 262.89 of this chapter.

(2) [Reserved])

2. These materials are listed as they exist on the effective date of these regulations.

(3) Petitions for Exclusions

(a) General

1. Any person may petition the Commissioner for an exclusion or other variance from any provision in these rules. This subparagraph sets forth general requirements which apply to all such petitions.

2. Each petition must be submitted to the Commissioner by certified mail and must include:

(i) The petitioner's name and address;

(ii) A statement of the petitioner's interest in the proposed action;

(iii) A description of the proposed action, including (where appropriate) suggested language; and

(iv) A statement of the need and justification for the proposed action, including any supporting tests, studies, or other information.

3. The Commissioner will make a tentative decision to grant or deny a petition and will issue a public notice of such tentative decision for written public comment.

4. Upon the written request of any interested person, the Commissioner may, at his discretion, hold an informal public hearing to consider oral comments on the tentative decision. A person requesting a hearing must state the issues to be raised and explain why written comments would not suffice to communicate the person's views. The Commissioner may in any case decide on his own motion to hold an informal public hearing. Notice of the public hearing shall be given by the petitioner as required by the Commissioner.

5. After evaluating all public comments the Commissioner will make a final decision to either grant or deny the petition, and will issue a public notice of such decision. The petitioner shall give this public notice as required by the Commissioner.

6. A determination made by the Environmental Protection Agency (EPA) pursuant to 40 CFR 260.21 Petitions for Equivalent Testing or Analytical Methods or 40 CFR 260.22 Petitions to Amend Part 261 to Exclude a Waste Produced at a Particular Facility shall be effective in Tennessee on the effective date of the EPA decision.

7. Any exclusion or other variance granted pursuant to this paragraph shall be rescinded if it is discovered or later determined that the exclusion or other variance has resulted or may result in a significant hazard to public health or the environment.

8. Any exclusion or other variance granted pursuant to this paragraph shall remain valid only so long as the stipulations under which it was granted are not violated.

(b) (Reserved) Petitions for Equivalent Testing or Analytical Methods [40 CFR 260.21]

(Note: The authority for implementing this subparagraph remains with the U.S. Environmental Protection Agency.)

(c) (Reserved) Petitions to Exclude a Waste Produced at a Particular Facility as Nonhazardous [40 CFR 260.22]

(Note: The authority for implementing this subparagraph remains with the U.S. Environmental Protection Agency.)

(d) Petitions to Amend Rule ~~1200-01-11-.12~~ 0400-12-01-.12 to Include Additional Hazardous Wastes [40 CFR 260.23]

1. Any person seeking to add a hazardous waste or a category of hazardous waste to the universal waste regulations of Rule ~~1200-01-11-.12~~ 0400-12-01-.12 may petition for a regulatory amendment under this subparagraph, subparagraph (a) of this paragraph, and ~~1200-01-11-.12~~ 0400-12-01-.12(7).

2. To be successful, the petitioner must demonstrate to the satisfaction of the Commissioner that regulation under the universal waste regulations of Rule ~~1200-01-11-.12~~ 0400-12-01-.12~~:~~ is appropriate for the waste or category of waste; will improve management practices for the waste or category of waste; and will improve implementation of the hazardous waste program. The petition must include the information required by part (a)2 of this paragraph. The petition should also address as many of the factors listed in Rule ~~1200-01-11-.12~~ 0400-12-01-.12(7)(b) as are appropriate for the waste or category of waste addressed in the petition.

3. The Commissioner will grant or deny a petition using the factors listed in Rule ~~1200-01-11-.12~~ 0400-12-01-.12(7)(b). The decision will be based on the weight of evidence showing that regulation under Rule ~~1200-01-11-.12~~ 0400-12-01-.12 is appropriate for the

waste or category of waste, will improve management practices for the waste or category of waste, and will improve implementation of the hazardous waste program.

4. The Commissioner may request additional information needed to evaluate the merits of the petition.

(4) Variances from Classification as a Waste [40 CFR 260.30]

(a) General

In accordance with the standards and criteria in subparagraph (b) and the procedures in subparagraph (c) of this paragraph, the Commissioner may determine on a case-by-case basis that the following recycled materials are not solid wastes:

1. Materials that are accumulated speculatively without sufficient amounts being recycled (as defined in Rule ~~1200-01-11-.02~~ 0400-12-01-.02(1)(a)3(viii);

2. Materials that are reclaimed and then reused within the original production process in which they were generated;

3. Materials that have been reclaimed but must be reclaimed further before the materials are completely recovered.

(b) Standards and Criteria for Variances from Classification as a Solid Waste [40 CFR 260.31]

1. The Commissioner may grant requests for a variance from classifying as a solid waste those materials that are accumulated speculatively without sufficient amounts being recycled if the applicant demonstrates that sufficient amounts of the material will be recycled or transferred for recycling in the following year. If a variance is granted, it is valid only for the following year, but can be renewed, on an annual basis, by filing a new application. The Commissioner's decision will be based on the following criteria:

(i) The manner in which the material is expected to be recycled, when the material is expected to be recycled, and whether this expected disposition is likely to occur (for example, because of past practice, market factors, the nature of the material, or contractual arrangements for recycling);

(ii) The reason that the applicant has accumulated the material for one or more years without recycling 75 percent of the volume accumulated at the beginning of the year;

(iii) The quantity of material already accumulated and the quantity expected to be generated and accumulated before the material is recycled;

(iv) The extent to which the material is handled to minimize loss;

(v) Other relevant factors.

2. The Commissioner may grant requests for a variance from classifying as a solid waste those materials that are reclaimed and then reused as feedstock within the original production process in which the materials were generated if the reclamation operation is an essential part of the production process. This determination will be based on the following criteria:

(i) How economically viable the production process would be if it were to use virgin materials, rather than reclaimed materials;

(ii) The extent to which the material is handled before reclamation to minimize loss;

(iii) The time periods between generating the material and its reclamation, and between reclamation and return to the original primary production process;

(iv) The location of the reclamation operation in relation to the production process;

(v) Whether the reclaimed material is used for the purpose for which it was originally produced when it is returned to the original process, and whether it is returned to the process in substantially its original form;

(vi) Whether the person who generates the material also reclaims it;

(vii) Other relevant factors.

3. The Commissioner may grant requests for a variance from classifying as a solid waste those materials that have been reclaimed but must be reclaimed further before recovery is completed if, after initial reclamation, the resulting material is commodity-like (even though it is not yet a commercial product, and has to be reclaimed further). This determination will be based on the following factors:

(i) The degree of processing the material has undergone and the degree of further processing that is required;

(ii) The value of the material after it has been reclaimed;

(iii) The degree to which the reclaimed material is like an analogous raw material;

(iv) The extent to which an end market for the reclaimed material is guaranteed;

(v) The extent to which the reclaimed material is handled to minimize loss;

(vi) Other relevant factors.

(c) Procedures

The Commissioner will use the following procedures in evaluating applications for variances from classification as a waste:

1. The applicant must apply to the Commissioner, and the application must address the relevant criteria contained in subparagraph (b) of this paragraph.

2. The Commissioner will evaluate the application and issue a draft notice tentatively granting or denying the application. Notification of this tentative decision will be provided by the applicant, as provided for in Rule ~~1200-01-11-.07~~ 0400-12-01-.07(7)(e) and as prepared and required by the Commissioner, except for denials, in a newspaper advertisement and radio broadcast in the locality where the recycler is located. The applicant shall provide proof of the completion of all notice requirements to the Commissioner within ten (10) days following conclusion of the public notice procedures. The Commissioner will accept comment on the tentative decision for 30 days, and may also hold a public hearing upon request or at his discretion. Notice of the public hearing shall be given by the applicant as set forth above in this part. The Commissioner will issue a final decision after receipt of comments and after the hearing (if any).

(d) Temporary Variance for Hazardous Wastes Previously Excluded as being Beneficially Used or Reused or Legitimately Recycled or Reclaimed

Materials for which, as of the effective date of this paragraph, a tentative or final exclusion has been granted by the Commissioner pursuant to the petition process established by former Department Rule ~~1200-01-11-.01~~ 0400-12-01-.01(3)(d) (entitled "Petitions to Exclude a Waste Which Is Beneficially Used or Reused or Legitimately Recycled or Reclaimed", but subsequently

deleted) shall be deemed to be temporarily granted a variance pursuant to this paragraph until a final variance determination is made in accordance with this paragraph, provided that the person to which the exclusion was granted files a variance application pursuant to part (c)1 of this paragraph within 90 days after the effective date of this paragraph.

(5) Variance to be Classified as a Boiler [40 CFR 260.32]

(a) General/Criteria

In accordance with the standards and criteria in subparagraph (2)(a) of this rule (definition of "boiler") and the procedures in subparagraph (b) of this paragraph, the Commissioner may determine on a case-by-case basis that certain enclosed devices using controlled flame combustion are boilers, even though they do not otherwise meet the definition of boiler contained in subparagraph (2)(a) of this rule, after considering the following criteria:

1. The extent to which the unit has provisions for recovering and exporting thermal energy in the form of steam, heated fluids, or heated gases; and

2. The extent to which the combustion chamber and energy recovery equipment are of integral design; and

3. The efficiency of energy recovery, calculated in terms of the recovered energy compared with the thermal value of the fuel; and

4. The extent to which exported energy is utilized; and

5. The extent to which the device is in common and customary use as a "boiler" functioning primarily to produce steam, heated fluids, or heated gases; and

6. Other factors, as appropriate.

(b) Procedures [40 CFR 260.33]

The Commissioner will use the following procedures in evaluating applications for variances from classification as a solid waste or applications to classify particular enclosed controlled flame combustion devices as boilers:

1. The applicant must apply to the Commissioner for the variance, and the application must address the relevant criteria contained in subparagraph (a) of this paragraph.

2. The Commissioner will evaluate the application and issue a draft notice tentatively granting or denying the application. Notification of this tentative decision will be provided by the applicant, as provided for in Rule ~~1200-01-11-.07~~ 0400-12-01-.07(7)(e) and as prepared and required by the Commissioner, except for denials, in a newspaper advertisement or radio broadcast in the locality where the recycler is located. The applicant shall provide proof of the completion of all notice requirements to the Commissioner within ten (10) days following conclusion of the public notice procedures. The Commissioner will accept comment on the tentative decision for 30 days, and may also hold a public hearing upon request or at his discretion. The Commissioner will issue a final decision after receipt of comments and after the hearing (if any).

(6) Additional Regulation of Certain Hazardous Waste Recycling Activities on a Case-by-Case Basis [40 CFR 260.40]

(a) General

The Commissioner may decide on a case-by-case basis that persons accumulating or storing the recyclable materials described in Rule ~~1200-01-11-.02~~ 0400-12-01-.02(1)(f)1(ii)(III) should be regulated under Rule ~~1200-01-11-.02~~ 0400-12-01-.02(1)(f)2 and 3. The basis for this decision is

that the materials are being accumulated or stored in a manner that does not protect human health and the environment because the materials or their toxic constituents have not been adequately contained, or because the materials being accumulated or stored together are incompatible. In making this decision, the Commissioner will consider the following factors:

1. The types of materials accumulated or stored and the amounts accumulated or stored;

2. The method of accumulation or storage;

3. The length of time the materials have been accumulated or stored before being reclaimed;

4. Whether any contaminants are being released into the environment, or are likely to be so released; and

5. Other relevant factors.

The procedures for this decision are set forth in ~~Rule 0400-12-01-.01(6)~~ subparagraph (b) of this paragraph.

(b) Procedures for Case-by-Case Regulation of Hazardous Waste Recycling Activities [40 CFR 260.41]

The Commissioner will use the following procedures when determining whether to regulate hazardous waste recycling activities described in Rule ~~1200-01-11-.02~~ 0400-12-01-.02(1)(f)1(ii)(III) under the provisions of Rule ~~1200-01-11-.02~~ 0400-12-01-.02(1)(f)2 and 3, rather than under the provisions of ~~1200-01-11-.09~~ 0400-12-01-.09(6).

1. If a generator is accumulating the waste, the Commissioner will issue a notice, published by the owner or operator, as prepared and required by the Commissioner, setting forth the factual basis for the decision and stating that the person must comply with the applicable requirements of paragraphs (1), (4), (5), and (6) of Rule ~~1200-01-11-.03~~ 0400-12-01-.03. The notice will become final within 30 days, unless the person served requests a public hearing to challenge the decision. Upon receiving such a request, the Commissioner will hold a public hearing. The Commissioner will provide notice, published by the owner or operator, as provided for in Rule ~~1200-01-11-.07~~ 0400-12-01-.07(7)(e) and as prepared and required by the Commissioner, of the hearing to the public and allow public participation at the hearing. The owner or operator shall provide proof of the completion of all notice requirements to the Commissioner within ten (10) days following conclusion of the public notice procedures. The Commissioner will issue a final order after the hearing stating whether or not compliance with Rule ~~1200-01-11-.03~~ 0400-12-01-.03 is required. The order becomes effective 30 days after service of the decision unless the Commissioner specifies a later date or unless review by the Board is requested. The order may be appealed to the Board by any person who participated in the public hearing. The Board may choose to grant or to deny the appeal. Final Department action occurs when a final order is issued and Department review procedures are exhausted.

2. If the person is accumulating the recyclable material as a storage facility, the notice will state that the person must obtain a permit in accordance with all applicable provisions of Rule ~~1200-01-11-.07~~ 0400-12-01-.07. The owner or operator of the facility must apply for a permit within no less than 60 days and no more than six months of notice, as specified in the notice. If the owner or operator of the facility wishes to challenge the Commissioner's decision, he may do so in his permit application, in a public hearing held on the draft permit, or in comments filed on the draft permit, or on the notice of intent to deny the permit. The fact sheet accompanying the permit will specify the reasons for the determination. The question of whether the Commissioner's decision was proper will remain open for consideration during the public comment period discussed under Rule ~~1200-01-11-.07~~ 0400-12-01-.07(7)(e) and in any subsequent hearing.

(7) Proprietary Information

(a) General

1. Purpose, Scope, and Applicability

Any information which is supplied to the Department by persons who are subject to these rules or by other governmental agencies and which is designated as proprietary information (as defined in subpart 2(viii) of this subparagraph) shall be handled by the Department as specified in this paragraph to assure that its confidentiality is maintained. Unless it is claimed or designated as proprietary, any information supplied to the Department under or relating to these rules shall be available for public review at any time during the State's normal business hours.

(Note: See 40 CFR 260.2(b) for additional requirements.)

2. Definitions

The following terms shall be defined as indicated for the purposes of this paragraph and this paragraph only:

(i) "Access" is the ability and opportunity to gain knowledge of Proprietary Information in any manner whatsoever.

(ii) "Authorized person" is any person, including members of the Board, authorized to receive Proprietary Information. Except for members of the Board, such authorization shall be granted in writing by the Commissioner.

(iii) "Document" is any recorded information regardless of its physical form or characteristics, including, but not limited to, written or printed material; processing cards and tapes; maps; charts; paintings; drawings; engravings; sketches; working papers and notes; reproduction of such things by any means or process; and sound, voice, or electronic recordings in any form.

(iv) "Document Control Number" is the unique number assigned by the document control officer to any document containing Proprietary Information.

(v) "Document Control Officer" is the individual authorized by the Commissioner in writing to be responsible for all incoming and outgoing documents identified as containing Proprietary Information.

(vi) "Information" is knowledge which can be communicated by any means.

(vii) "Instruction" is fully informing individuals in writing of their responsibilities for safeguarding Proprietary Information and the security procedures they shall follow.

(viii) "Proprietary Information" means any confidential information that relates to a trade secret, product, apparatus, process, operation, style of work, or financial information which is owned (not necessarily exclusively) by or licensed to a person and claimed by that person to be proprietary and confidential; provided that the claim is accompanied by a written statement from such person relating the reasons why such information should be held confidential. Such information may be submitted to the Department by the owner/licensee of the trade secret, product, etc.; or by another governmental agency which has obtained the information. If submitted by the owner/licensee, the written statement accompanying the information claimed proprietary must, at a minimum, answer the questions in items (I) through (IV) of this subpart. If submitted by another

governmental agency, the written statement need include only the accompanying statements/reasons obtained by that agency.

(I) Will disclosure of the information be likely to substantially harm your competitive position? If so, what would the harm be, and why should it be viewed as substantial? What is the relationship between disclosure and the harm?

(II) What measures have you taken to guard against undesired disclosure of the information to others?

(III) To what extent has the information been disclosed to others, and what precautions have you taken in connection with that disclosure?

(IV) Has the U.S. Environmental Protection Agency or any other Federal or State of Tennessee agency made a pertinent confidentiality determination? (If so, please include a copy of this determination, if available.)

3. Policy

Department employees are prohibited from disclosing, in any manner and to any extent not authorized by law or regulations, any Proprietary Information coming to them in the course of their employment or official duties. Proprietary Information is to be held in confidence, protected in accordance with the procedures described in this paragraph, and released only to authorized persons.

(b) Responsibilities

1. Commissioner

The Commissioner is responsible for:

(i) Designating a document control officer;

(ii) Assuring that all Department employees receiving and handling Proprietary Information receive instruction as to their responsibilities for controlling Proprietary Information;

(iii) Maintaining a record which lists all employees who have authorized access to Proprietary Information;

(iv) Obtaining a "Confidentiality Agreement" from all employees having access to Proprietary Information;

(v) Obtaining a "Confidentiality Agreement upon Transfer or Termination" from all employees having access to Proprietary Information in the event such employees decide to terminate employment or are transferred to a position not requiring such access;

(vi) Assuring that the appropriate requirements for storage and use are met, including control of access to keys and combinations;

(vii) Taking appropriate disciplinary action concerning any Department employees who fail to comply with the requirements of this paragraph; and

(viii) Notifying the person submitting Proprietary Information which has been disclosed in violation of the requirements of this paragraph of such occurrence.

2. Document Control Officer

The Document Control Officer is responsible for the maintenance, control and distribution of all Proprietary Information received by the Department as follows:

(i) Logging of all Proprietary Information as received by the Department, both incoming and outgoing;

(ii) Assigning a document control number to each document received containing Proprietary Information;

(iii) Maintaining a system which identifies employees authorized to receive Proprietary Information;

(iv) Releasing Proprietary Information only to persons from whom the confidentiality agreements of subparts 1(iv) and (v) of this subparagraph have been obtained;

(v) Maintaining a system to insure that any Proprietary Information transmitted to field locations is received;

(vi) Maintaining at Department offices a system for retrieval of documents that are furnished to other program offices;

(vii) Authorizing and supervising the reproduction and destruction of Proprietary Information; and

(viii) Assuring that recipients of Proprietary Information have proper storage capability prior to release of such documents, or, if they do not, requiring return of the released Proprietary Information the same day.

3. Employees

Employees are responsible for:

(i) Controlling all Proprietary Information entrusted to them;

(ii) Only discussing Proprietary Information with authorized persons;

(iii) Never leaving the Proprietary Information unattended when not properly stored;

(iv) Never discussing Proprietary Information over the telephone except upon approval of the document control officer should the Proprietary Information be needed in an emergency situation;

(v) Storing the Proprietary Information as specified in part (c)5 of this paragraph when not in use and at the close of business;

(vi) Not reproducing Proprietary Information documents. Additional copies must be obtained through the document control officer; and

(vii) Reporting immediately possible violations of these regulations to the Commissioner.

(c) Procedures

1. Receipt and Handling

The document control officer shall:

(i) Receive all information claimed as proprietary and confidential which is submitted to the Department;

(ii) Log in all Proprietary Information received by the Department;

(iii) Assign a document control number to all Proprietary Information;

(iv) Attach a Proprietary Information cover sheet to the document;

(v) Release Proprietary Information only to authorized persons; and

(vi) Review the claim and, using the written statement accompanying the information claimed proprietary, the answers to the questions at ~~Rule 0400-12-01-.01(7)~~ items (a)2(viii)(I) through (IV) of this paragraph and other information as may be required, determine whether to approve or deny it, in part or in whole.

2. Transmission

(i) Proprietary Information must be transmitted in a double envelope by Registered Mail, Return Receipt Requested. The inner envelope must reflect the address of the recipient with the following additional wording on the front side of the inner envelope:

"Confidential Business - To Be Opened By Document Control Officer Only."

The outer envelope must reflect the normal address without the additional wording.

(ii) All requests to the document control officer for Proprietary Information must be in writing and signed by the requesting employee.

(iii) Proprietary Information may be hand carried to other Department facilities by authorized persons providing the dispatching document control officer maintains a record and obtains a receipt from the receiving document control officer. Information being hand carried should be packaged as described in subpart (i) of this part.

(iv) Proprietary Information within a Department office shall be hand delivered only by an authorized person. At no time shall Proprietary Information be transmitted through inner office mailing channels.

3. Reproduction

Proprietary Information shall not be reproduced except upon approval by and under the supervision of the document control officer. Any reproduction shall be limited by a document control system and be subject to the same control requirements as for the original.

4. Destruction

Proprietary Information shall not be destroyed except upon approval by and under the supervision of the document control officer. The document control officer shall keep a record of destruction in the appropriate log and notify the person submitting the Proprietary Information.

5. Storage

(i) Documents containing Proprietary Information must be stored within a locked cabinet so as to limit access to authorized persons.

(ii) Keys and/or combinations to cabinets and/or rooms where the data is stored must be issued only to an authorized person.

(d) Transmittal Outside Department Offices

Proprietary Information shall not be transmitted outside Department offices without the approval of the Commissioner and such information must be transmitted by the document control officer in accordance with part (c)2 of this paragraph. The person submitting the Proprietary Information shall be notified when such occurs.

(e) Release to EPA

Notwithstanding any requirement of this paragraph seemingly to the contrary, Proprietary Information may be released to the U.S. Environmental Protection Agency in connection with the Commissioner's or Board's implementation or his or its responsibilities pursuant to the Act or as necessary to comply with federal law. Any such release of Proprietary Information to EPA, however, will be made with a confidentiality claim and shall be accompanied by the written statement received by the Department pursuant to subpart (a)2(viii) of this paragraph. Any transmittal of Proprietary Information to EPA shall be subject to the requirements of subparagraph (d) of this paragraph. The Commissioner shall notify the submitter of Proprietary Information of the release of such information to EPA as soon as practicable - to be no later than 5 days after such release - following receipt of EPA's request for the information.

(8) Availability of Information

(a) The Division will respond to all requests for records within 20 days after the date of receipt of such requests.

(b) If a facility does not assert a claim of proprietary information at the first opportunity provided by the Division, the Division may release the information without further notice to the facility. In addition, in the case of any information submitted in connection with a permit, permit application or interim status under Rules ~~1200-01-11-.05~~ 0400-12-01-.05, .06, and .07, any facility proprietary information claim must be asserted at the time of submission of the information to the Division.

(c) If a proprietary information claim is asserted and cannot be resolved in the time period provided for the Division's response to a request, the requestor will be notified of the proprietary information claim within the maximum 20-day time limit provided for the Division's response. In addition, the requestor must be told that the Division has denied the request in order to resolve the proprietary information claim.

(9) Retention of Records

(a) In order to protect public health, safety and welfare, to prevent degradation of the environment, conserve natural resources and provide a coordinated statewide hazardous waste management program it is necessary to manage and retain records. These records shall be managed in accordance with Chapter 1210-01 Rules of Public Records Commission.

(b) As defined by paragraph (2) of Rule 1210-01-.02, permanent records have permanent administrative, fiscal, historical or legal value. The following types of records generated by or received by the Department while fulfilling its duties under T.C.A. §§ 68-212-101 et seq., and Chapter ~~1200-01-11~~ 0400-12-01 Hazardous Waste Management shall be managed as permanent records:

1. All records containing information, by site, of hazardous wastes or hazardous secondary materials that have been generated, treated, stored, disposed of and/or recycled, or hazardous waste or hazardous secondary material activities that have been conducted at the site, shall be managed as a permanent record. These records have historic value since there is a risk that these hazardous waste activities may have caused

contamination that remains undetected for many years. When an exposure occurs these records would be required in order to facilitate an effective response. These records include, but are not limited to:

(i) Generator notifications, waste stream pages and annual reports;

(ii) Hazardous waste permits and permit applications;

(iii) Hazardous Waste Inspection reports and enforcement actions; and

(iv) Recycling determinations and investigations.

2. All records regarding hazardous waste or hazardous substance remedial action sites managed by the Division shall be managed as permanent records. Records regarding site characterization, monitoring, remedial actions, risk determination and enforcement actions have historic value since the long term affects of hazardous waste, hazardous waste constituents or hazardous substances are uncertain and could lead to future exposures. When an exposure occurs, these records would be required in order to facilitate an effective response.

3. All records regarding unregulated hazardous waste sites where unlawful hazardous waste treatment, storage, disposal or recycling was documented shall be managed as permanent records. These records have historic value since the long term affects of hazardous waste, hazardous waste constituents or hazardous substances are uncertain and could lead to future exposures. When an exposure occurs, these records would be required in order to facilitate an effective response.

Authority: T.C.A. §§ 68-212-101 et seq. and 4-5-201 et seq.

~~1200-01-11-.02~~ 0400-12-01-.02 Identification and Listing of Hazardous Waste.

(1) General [40 CFR 261 Subpart A]

(a) Purpose and Scope [40 CFR 261.1]

1. This rule identifies those solid wastes which are subject to regulation as hazardous wastes under Rules ~~1200-01-11-.03~~ 0400-12-01-.03 through .07. In this rule:

(i) Paragraph (1) defines the terms "solid waste" and "hazardous waste", identifies those wastes which are excluded from regulation under Rules ~~1200-01-11-.03~~ 0400-12-01-.03 through .07, .09 and .10 and establishes special management requirements for hazardous waste produced by conditionally exempt small quantity generators and hazardous waste which is recycled.

(ii) Paragraph (2) sets forth the criteria used by the Board to identify characteristics of hazardous waste and to list particular hazardous wastes.

(iii) Paragraph (3) identifies characteristics of hazardous waste.

(iv) Paragraph (4) lists particular hazardous wastes.

2. (i) The definition of solid waste contained in this rule applies only to wastes that also are hazardous for purposes of the regulations implementing T.C.A. Title 68, Chapter 212. For example it does not apply to materials (such as non-hazardous scrap, paper, textiles, or rubber) that are not otherwise hazardous wastes and that are recycled.

(ii) This rule identifies only some of the materials which are solid wastes and hazardous wastes under T.C.A. Sections 68-212-105, 68-212-107, 68-212-111, 68-212-114 and 68-212-115. A material which is not defined as a solid waste in this rule, or is not a hazardous waste identified or listed in this rule, is still a solid waste and a hazardous waste for purposes of these statutory sections if:

(I) In the case of T.C.A. Section 68-212-107, the Commissioner has reason to believe that the material may be a solid waste within the meaning of T.C.A. Section 68-212-104(19) and a hazardous waste within the meaning of T.C.A. Section 68-212-104(8); or

(II) In the case of T.C.A. Sections 68-212-105, 68-212-111, 68-212-114 and 68-212-115, the statutory definition of a waste and a hazardous waste are established.

3. For the purposes of subparagraphs (b) and (f) of this paragraph:

(i) A "spent material" is any material that has been used and as a result of contamination can no longer serve the purpose for which it was produced without processing;

(ii) "Sludge" has the same meaning used in Rule ~~1200-01-11-.01~~ 0400-12-01-.01(2)(a);

(iii) A "by-product" is a material that is not one of the primary products of a production process and is not solely or separately produced by the production process. Examples are process residues such as slags or distillation column bottoms. The term does not include a co-product that is produced for the general public's use and is ordinarily used in the form it is produced by the process.

(iv) A material is "reclaimed" if it is processed to recover a usable product, or if it is

regenerated. Examples are recovery of lead values from spent batteries and regeneration of spent solvents.

(v) A material is "used or reused" if it is either:

(I) Employed as an ingredient (including use as an intermediate) in an industrial process to make a product (for example, distillation bottoms from one process used as feedstock in another process). However, a material will not satisfy this condition if distinct components of the material are recovered as separate end products (as when metals are recovered from metal-containing secondary materials); or

(II) Employed in a particular function or application as an effective substitute for a commercial product (for example, spent pickle liquor used as phosphorous precipitant and sludge conditioner in wastewater treatment).

(vi) "Scrap metal" is bits and pieces of metal parts (e.g., bars, turnings, rods, sheets, wire) or metal pieces that may be combined together with bolts or soldering (e.g., radiators, scrap automobiles, railroad box cars), which when worn or superfluous can be recycled.

(vii) A material is "recycled" if it is used, reused, or reclaimed.

(viii) A material is "accumulated speculatively" if it is accumulated before being recycled. A material is not accumulated speculatively, however, if the person accumulating it can show that the material is potentially recyclable and has a feasible means of being recycled; and that -- during the calendar year (commencing on January 1) -- the amount of material that is recycled, or transferred to a different site for recycling, equals at least 75 percent by weight or volume of the amount of that material accumulated at the beginning of the period. In calculating the percentage of turnover, the 75 percent requirement is to be applied to each material of the same type (e.g., slags from a single smelting process) that is recycled in the same way (i.e., from which the same material is recovered or that is used in the same way). Materials accumulating in units that would be exempt from regulation under subpart (d)3(i) of this paragraph are not be included in making the calculation. (Materials that are already defined as solid wastes also are not to be included in making the calculation.) Materials are no longer in this category once they are removed from accumulation for recycling, however.

(ix) "Excluded scrap metal" is processed scrap metal, unprocessed home scrap metal, and unprocessed prompt scrap metal.

(x) "Processed scrap metal" is scrap metal which has been manually or physically altered to either separate it into distinct materials to enhance economic value or to improve the handling of materials. Processed scrap metal includes, but is not limited to scrap metal which has been baled, shredded, sheared, chopped, crushed, flattened, cut, melted, or separated by metal type (i.e., sorted), and, fines, drosses and related materials which have been agglomerated. (Note: shredded circuit boards being sent for recycling are not considered processed scrap metal. They are covered under the exclusion from the definition of solid waste for shredded circuit boards being recycled (Rule ~~1200-01-11-.02~~ 0400-12-01-.02(1)(d)1(xvi)).

(xi) "Home scrap metal" is scrap metal as generated by steel mills, foundries, and refineries such as turnings, cuttings, punchings, and borings.

(xii) "Prompt scrap metal" is scrap metal as generated by the metal

working/fabrication industries and includes such scrap metal as turnings, cuttings, punchings, and borings. Prompt scrap is also known as industrial or new scrap metal.

(b) Definition of Solid Waste [40 CFR 261.2]

1. (i) A "solid waste" is any discarded material that is not excluded by part (d)1 of this paragraph or that is not excluded by variance granted under Rule ~~1200-01-11-.01~~ 0400-12-01-.01(4)(a) and (b).

(ii) A "discarded material" is any material which is:

(I) "Abandoned", as explained in part 2 of this paragraph; or

(II) "Recycled", as explained in part 3 of this paragraph; or

(III) Considered "inherently waste-like", as explained in part 4 of this subparagraph; or

(IV) A military munition identified as a solid waste in Rule ~~1200-01-11-.09~~ 0400-12-01-.09(13)(c).

2. Materials are solid waste if they are "abandoned" by being:

(i) Disposed of; or

(ii) Burned or incinerated; or

(iii) Accumulated, stored, or treated (but not recycled) before or in lieu of being abandoned by being disposed of, burned, or incinerated.

3. Materials are solid wastes if they are "recycled" -- or accumulated, stored, or treated before recycling -- as specified in subparts (i) through (iv) of this part:

(i) "Used in a manner constituting disposal".

(I) Materials noted with a "*" in Column 1 of Table 1 are solid wastes when they are:

I. Applied to or placed on the land in a manner that constitutes disposal; or

II. Used to produce products that are applied to or placed on the land or are otherwise contained in products that are applied to or placed on the land (in which cases the product itself remains a solid waste).

(II) However, commercial chemical products listed in subparagraph (4)(d) of this rule are not solid wastes if they are applied to the land and that is their ordinary manner of use.

(ii) "Burning for energy recovery"

(I) Materials noted with a "*" in column 2 of Table 1 are solid wastes when they are:

I. Burned to recover energy;

II. Used to produce a fuel or are otherwise contained in fuels (in

which cases the fuel itself remains a solid waste).

(II) However, commercial chemical products listed in subparagraph (4)(d) of this rule are not solid wastes if they are themselves fuels.

(iii) "Reclaimed"

Materials noted with a "*" in column 3 of Table 1 are solid wastes when reclaimed (except as provided under subpart (d)1(xix) of this paragraph). Materials noted with a "-" in column 3 of Table 1 are not solid wastes when reclaimed.

(iv) "Accumulated speculatively"

Materials noted with a "*" in column 4 of Table 1 are solid wastes when accumulated speculatively.

Table 1

	Use constituting disposal (Rule ~~1200-01-11-.02~~ 0400-12-01-.02(1)(b)3(i))	Energy recovery/fuel (~~1200-01-11-.02~~ 0400-12-01-.02(1)(b)3(ii))	Reclamation (~~1200-01-11-.02~~ 0400-12-01-.02 1)(b)3 (iii)) (except as provided in Rule ~~1200-01-11-.02~~ 0400-12-01-.02(1)(d)1 (xix) for mineral processing secondary materials	Speculative accumulation (~~1200-01-11-.02~~ 0400-12-01-.02(1)(b)3 (iv))
	(1)	(2)	(3)	(4)
Spent Materials	(*)	(*)	(*)	(*)
Sludges [listed in Rule ~~1200-01-11-.02~~ 0400-12-01-.02(4)(b) or (c)]	(*)	(*)	(*)	(*)
Sludges exhibiting a characteristic of hazardous waste	(*)	(*)	–	(*)
By-products [listed in Rule ~~1200-01-11-.02~~ 0400-12-01-.02(4)(b) or (c)]	(*)	(*)	(*)	(*)
By-products exhibiting a characteristic of hazardous waste	(*)	(*)	–	(*)
Commercial chemical products listed in Rule ~~1200-01-11-.02~~ 0400-12-01-.02(4)(d)	(*)	(*)	–	–
Scrap metal ~~other than excluded scrap metal (see Rule 1200-01-11-.02 (1)(a)3(ix))~~ that is not excluded under Rule 0400-12-01-.02(1)(d)1(xv)	(*)	(*)	(*)	(*)

(Note: The terms "spent materials", "sludges", "by-products", "scrap metal" and "processed scrap metal" are defined in subparagraph (1)(a) of this rule.)

4. "Inherently waste-like materials"

The following materials are solid wastes when they are recycled in any manner:

(i) Hazardous Waste Codes F020, F021 (unless used as an ingredient to make a product at the site of generation), F022, F023, F026, and F028.

(ii) Secondary materials fed to a halogen acid furnace that exhibit a characteristic of a hazardous waste or are listed as a hazardous waste as defined in paragraph (3) or (4) of this rule, except for brominated material that meets the following criteria:

(I) The material must contain a bromine concentration of at least 45%; and

(II) The material must contain less than a total of 1% of toxic organic compounds listed in paragraph (5) Appendix VIII of this rule; and

(III) The material is processed continually on-site in the halogen acid furnace via direct conveyance (hard piping).

(iii) The Board will use the following criteria to add wastes to that list:

(I) I. The materials are ordinarily disposed of, burned, or incinerated; or

II. The materials contain toxic constituents listed in paragraph (5) Appendix VIII of this rule and these constituents are not ordinarily found in raw materials or products for which the materials substitute (or are found in raw materials or products in smaller concentrations) and are not used or reused during the recycling process; and

(II) The material may pose a substantial hazard to human health and the environment when recycled.

5. "Materials that are not solid waste when recycled"

(i) Materials are not solid wastes when they can be shown to be recycled by being:

(I) Used or reused as ingredients in an industrial process to make a product, provided the materials are not being reclaimed; or

(II) Used or reused as effective substitutes for commercial products; or

(III) Returned to the original process from which they are generated, without first being reclaimed or land disposed. The material must be returned as a substitute for feedstock materials. In cases where the original process to which the material is returned is a secondary process, the materials must be managed such that there is no placement on the land. In cases where the materials are generated and reclaimed within the primary mineral processing industry, the conditions of the exclusion found at subpart (d)1(xix) of this paragraph apply rather than this item.

(ii) The following materials are solid wastes, even if the recycling involves use, reuse, or return to the original process (described in items (i)(I) through (III) of this part):

(I) Materials used in a manner constituting disposal, or used to produce products that are applied to the land; or

(II) Materials burned for energy recovery, used to produce a fuel, or contained in fuels; or

(III) Materials accumulated speculatively; or

(IV) Materials listed in subparts 4(i) and 4(ii) of this subparagraph.

6. "Documentation of claims that materials are not solid wastes or are conditionally exempt from regulation".

Respondents in actions to enforce regulations implementing the Act and ~~Rule~~ Chapter ~~1200-01-11~~ 0400-12-01 who raise a claim that a certain material is not a solid waste, or is conditionally exempt from regulation, must demonstrate that there is a known market or disposition for the material, and that they meet the terms of the exclusion or exemption. In doing so, they must provide appropriate documentation (such as contracts showing that a second person uses the material as an ingredient in a production process) to demonstrate that the material is not a waste, or is exempt from regulation. In addition, owners or operators of facilities claiming that they actually are recycling materials must show that they have the necessary equipment to do so.

(c) Definition of Hazardous Waste [40 CFR 261.3]

1. A solid waste, as defined in subparagraph (b) of this paragraph, is a hazardous waste if:

(i) It is not excluded from regulation as a hazardous waste under part (d)2 of this paragraph; and

(ii) It meets any of the following criteria:

(I) It exhibits any of the characteristics of hazardous waste identified in paragraph (3) of this rule. However, any mixture of a waste from the extraction, beneficiation, and processing of ores and minerals excluded under subpart (d)2(xv) of this paragraph and any other solid waste exhibiting a characteristic of hazardous waste under paragraph (3) of this rule is a hazardous waste only if it exhibits a characteristic that would not have been exhibited by the excluded waste alone if such mixture had not occurred or if it continues to exhibit any of the characteristics exhibited by the non-excluded wastes prior to mixture. Further, for the purposes of applying the Toxicity Characteristic to such mixtures, the mixture is also a hazardous waste if it exceeds the maximum concentration for any contaminant listed in Table 1 to subparagraph (3)(e) of this rule that would not have been exceeded by the excluded waste alone if the mixture had not occurred or if it continues to exceed the maximum concentration for any contaminant exceeded by the nonexempt waste prior to mixture.

(II) It is listed in paragraph (4) of this rule and has not been excluded from the lists in paragraph (4) of this rule under Rule ~~1200-01-11-.01~~ 0400-12-01-.01(3)(a) and (c).

(III) (RESERVED) [261.3(a)(2)(iii)]

(IV) It is a mixture of solid waste and one or more hazardous wastes listed in paragraph (4) of this rule and has not been excluded from subpart 1(ii) of this subparagraph under Rule ~~1200-01-11-.01~~ 0400-12-01-.01(3)(a) and

(c), parts 7 or 8 of this subparagraph; however, the following mixtures of solid wastes and hazardous wastes listed in paragraph (4) of this rule are not hazardous wastes (except by application of items (I) or (II) of this subpart) if the generator can demonstrate that the mixture consists of wastewater the discharge of which is subject to regulation under T.C.A. §§69-3-101 et seq. (including wastewater at facilities which have eliminated the discharge of wastewater) and:

I. One or more of the following spent solvents listed in subparagraph (4)(b) of this rule--benzene, carbon tetrachloride, tetrachloroethylene, trichloroethylene or the scrubber waters derived-from the combustion of these spent solvents - -provided that (1) the maximum total weekly usage of these solvents (other than the amounts that can be demonstrated not to be discharged to wastewater) divided by the average weekly flow of wastewater into the headworks of the facility's wastewater treatment or pretreatment system does not exceed 1 part per million or (2) the total measured concentration of these solvents entering the headworks of the facility's wastewater treatment system (at facilities subject to regulation under the Clean Air Act, as amended, at 40 CFR parts 60, 61, or 63, or at facilities subject to an enforceable limit in a federal operating permit that minimizes fugitive emissions),does not exceed 1 part per million on an average weekly basis. Any facility that uses benzene as a solvent and claims this exemption must use an aerated biological wastewater treatment system and must use only lined surface impoundments or tanks prior to secondary clarification in the wastewater treatment system. Facilities that choose to measure concentration levels must file a copy of their sampling and analysis plan with the Division Director, as defined in Rule ~~1200-01-11-.01~~ 0400-12-01-.01(2)(a). A facility must file a copy of a revised sampling and analysis plan only if the initial plan is rendered inaccurate by changes in the facility's operations. The sampling and analysis plan must include the monitoring point location (headworks), the sampling frequency and methodology, and a list of constituents to be monitored. A facility is eligible for the direct monitoring option once they receive confirmation that the sampling and analysis plan has been received by the Director. The Director may reject the sampling and analysis plan if he/she finds that, the sampling and analysis plan fails to include the above information; or the plan parameters would not enable the facility to calculate the weekly average concentration of these chemicals accurately. If the Director rejects the sampling and analysis plan or if the Director finds that the facility is not following the sampling and analysis plan, the Director shall notify the facility to cease the use of the direct monitoring option until such time as the bases for rejection are corrected; or

II. One or more of the following spent solvents listed in subparagraph (4)(b) of this rule --methylene chloride, 1,1,1-trichloroethane, chlorobenzene, o-dichlorobenzene, cresols, cresylic acid, nitrobenzene, toluene, methyl ethyl ketone, carbon disulfide, isobutanol, pyridine, spent chlorofluorocarbon solvents, 2-ethoxyethanol, or the scrubber waters derived-from the combustion of these spent solvents- - provided that (1) the maximum total weekly usage of these solvents (other than the amounts that can be demonstrated not to be discharged to wastewater) divided by the average weekly flow of wastewater into the headworks of the facility's wastewater treatment or

pretreatment system does not exceed 25 parts per million or (2) the total measured concentration of these solvents entering the headworks of the facility's wastewater treatment system (at facilities subject to regulation under the Clean Air Act as amended, at 40 CFR parts 60, 61, or 63, or at facilities subject to an enforceable limit in a federal operating permit that minimizes fugitive emissions) does not exceed 25 parts per million on an average weekly basis. Facilities that choose to measure concentration levels must file a copy of their sampling and analysis plan with the Division Director, as defined in Rule ~~1200-01-11-.01~~ 0400-12-01-.01(2)(a). A facility must file a copy of a revised sampling and analysis plan only if the initial plan is rendered inaccurate by changes in the facility's operations. The sampling and analysis plan must include the monitoring point location (headworks), the sampling frequency and methodology, and a list of constituents to be monitored. A facility is eligible for the direct monitoring option once they receive confirmation that the sampling and analysis plan has been received by the Director. The Director may reject the sampling and analysis plan if he/she finds that, the sampling and analysis plan fails to include the above information; or the plan parameters would not enable the facility to calculate the weekly average concentration of these chemicals accurately. If the Director rejects the sampling and analysis plan or if the Director finds that the facility is not following the sampling and analysis plan, the Director shall notify the facility to cease the use of the direct monitoring option until such time as the bases for rejection are corrected; or

III. One of the following wastes listed in subparagraph (4)(c) of this rule, provided that the wastes are discharged to the refinery oil recovery sewer before primary oil/water/solids separation - heat exchanger bundle cleaning sludge from the petroleum refining industry (Hazardous Waste Code K050), crude oil storage tanks sediment from petroleum refining operations (Hazardous Waste Code K169), clarified slurry oil tank sediment and/or in-line filter/separation solids from petroleum refining operations (Hazardous Waste Code K170), spent hydrotreating catalyst (Hazardous Waste Code K171), and spent hydrorefining catalyst (Hazardous Waste Code K172); or

IV. A discarded hazardous waste, commercial chemical product, or chemical intermediate listed in subparagraphs (4)(b) through (4)(d) of this rule, arising from de minimis losses of these materials. For purposes of this subitem, de minimis losses are inadvertent releases to a wastewater treatment system, including those from normal material handling operations (e. g., spills from the unloading or transfer of materials from bins or other containers, leaks from pipes, valves or other devices used to transfer materials); minor leaks of process equipment, storage tanks or containers; leaks from well maintained pump packings and seals; sample purgings; relief device discharges; discharges from safety showers and rinsing and cleaning of personal safety equipment; and rinsate from empty containers or from containers that are rendered empty by that rinsing. Any manufacturing facility that claims an exemption for de minimis quantities of wastes listed in subparagraphs (4)(b) through (4)(c) of this rule or any nonmanufacturing facility that claims an exemption for de minimis quantities of wastes listed in paragraph (4) of this rule must either have eliminated the discharge of wastewaters or

have included in its Clean Water Act permit application or submission to its pretreatment control authority the constituents for which each waste was listed in Appendix VII of paragraph (5) of this rule; and the constituents in the table "Treatment Standards for Hazardous Wastes" in Rule ~~1200-01-11-.10~~ 0400-12-01-.10(3)(a) for which each waste has a treatment standard (i.e., Land Disposal Restriction constituents). A facility is eligible to claim the exemption once the permit writer or control authority has been notified of possible de minimis releases via the Clean Water Act permit application or the pretreatment control authority submission. A copy of the Clean Water permit application or the submission to the pretreatment control authority must be placed in the facility's on-site files; or

V. Wastewater resulting from laboratory operations containing toxic (T) wastes listed in paragraph (4) of this rule, provided that the annualized average flow of laboratory wastewater does not exceed one percent of total wastewater flow into the headworks of the facility's wastewater treatment or pre-treatment system, or provided the wastes, combined annualized average concentration does not exceed one part per million in the headworks of the facility's wastewater treatment or pre-treatment facility. Toxic (T) wastes used in laboratories that are demonstrated not to be discharged to wastewater are not to be included in this calculation; or

VI. One or more of the following wastes listed in subparagraph (4)(c) of this rule -- wastewaters from the production of carbamates and carbamoyl oximes (Hazardous Waste Code No. K157)- - provided that (1) the maximum weekly usage of formaldehyde, methyl chloride, methylene chloride, and triethylamine (including all amounts that cannot be demonstrated to be reacted in the process, destroyed through treatment, or is recovered, i.e., what is discharged or volatilized) divided by the average weekly flow of process wastewater prior to any dilution into the headworks of the facility's wastewater treatment system does not exceed a total of 5 parts per million by weight or (2) the total measured concentration of these chemicals entering the headworks of the facility's wastewater treatment system (at facilities subject to regulation under the Clean Air Act as amended, at 40 CFR parts 60, 61, or 63, or at facilities subject to an enforceable limit in a federal operating permit that minimizes fugitive emissions) does not exceed 5 parts per million on an average weekly basis. Facilities that choose to measure concentration levels must file a copy of their sampling and analysis plan with the Division Director, as defined in Rule ~~1200-01-11-.01~~ 0400-12-01-.01(2)(a). A facility must file a copy of a revised sampling and analysis plan only if the initial plan is rendered inaccurate by changes in the facility's operations. The sampling and analysis plan must include the monitoring point location (headworks), the sampling frequency and methodology, and a list of constituents to be monitored. A facility is eligible for the direct monitoring option once they receive confirmation that the sampling and analysis plan has been received by the Director. The Director may reject the sampling and analysis plan if he/she finds that, the sampling and analysis plan fails to include the above information; or the plan parameters would not enable the facility to calculate the weekly average concentration of these chemicals accurately. If the Director rejects the sampling and analysis plan

or if the Director finds that the facility is not following the sampling and analysis plan, the Director shall notify the facility to cease the use of the direct monitoring option until such time as the bases for rejection are corrected; or

VII. Wastewaters derived from the treatment of one or more of the following wastes listed in subparagraph (4)(c) of this rule -- organic waste (including heavy ends, still bottoms, light ends, spent solvents, filtrates, and decantates) from the production of carbamates and carbamoyl oximes (Hazardous Waste Code No. K156)—provided that (1) the maximum concentration of formaldehyde, methyl chloride, methylene chloride, and triethylamine prior to any dilutions into the headworks of the facility's wastewater treatment system does not exceed a total of 5 milligrams per liter or (2) the total measured concentration of these chemicals entering the headworks of the facility's wastewater treatment system (at facilities subject to regulation under the Clean Air Act as amended, at 40 CFR parts 60, 61, or 63, or at facilities subject to an enforceable limit in a federal operating permit that minimizes fugitive emissions) does not exceed 5 milligrams per liter on an average weekly basis. Facilities that choose to measure concentration levels must file a copy of their sampling and analysis plan with the Division Director, as defined in Rule ~~1200-01-11-.01~~ 0400-12-01-.01(2)(a). A facility must file a copy of a revised sampling and analysis plan only if the initial plan is rendered inaccurate by changes in the facility's operations. The sampling and analysis plan must include the monitoring point location (headworks), the sampling frequency and methodology, and a list of constituents to be monitored. A facility is eligible for the direct monitoring option once they receive confirmation that the sampling and analysis plan has been received by the Director. The Director may reject the sampling and analysis plan if he/she finds that, the sampling and analysis plan fails to include the above information; or the plan parameters would not enable the facility to calculate the weekly average concentration of these chemicals accurately. If the Director rejects the sampling and analysis plan or if the Director finds that the facility is not following the sampling and analysis plan, the Director shall notify the facility to cease the use of the direct monitoring option until such time as the bases for rejection are corrected.

(V) Rebuttable presumption for used oil

Used oil containing more than 1000 ppm total halogens is presumed to be a hazardous waste because it has been mixed with halogenated hazardous waste listed in paragraph (4) of this rule. Persons may rebut this presumption by demonstrating that the used oil does not contain hazardous waste (for example, to show that the used oil does not contain significant concentrations of halogenated hazardous constituents listed in appendix VIII of paragraph (5) of this rule).

I. The rebuttable presumption does not apply to metalworking oils/fluids containing chlorinated paraffins, if they are processed, through a tolling agreement, to reclaim metalworking oils/fluids. The presumption does apply to metalworking oils/fluids if such oils/fluids are recycled in any other manner, or disposed.

II. The rebuttable presumption does not apply to used oils contaminated with chlorofluorocarbons (CFCs) removed from refrigeration units where the CFCs are destined for reclamation. The rebuttable presumption does apply to used oils contaminated with CFCs that have been mixed with used oil from sources other than refrigeration units.

2. A solid waste which is not excluded from regulation under part (d)2 of this paragraph becomes a hazardous waste when any of the following events occur:

(i) In the case of a waste listed in paragraph (4) of this rule, when the waste first meets the listing description set forth in paragraph (4) of this rule.

(ii) In the case of a mixture of solid waste and one or more listed hazardous wastes, when a hazardous waste listed in paragraph (4) of this rule is first added to the solid waste.

(iii) In the case of any other waste (including a waste mixture), when the waste exhibits any of the characteristics identified in paragraph (3) of this rule.

3. Unless and until it meets the criteria of part 4 below:

(i) A hazardous waste will remain a hazardous waste

(ii) (I) Except as otherwise provided in item (II) of this subpart, part 7 or part 8 of this subparagraph, any solid waste generated from the treatment, storage, or disposal of a hazardous waste, including any sludge, spill residue, ash, emission control dust, or leachate (but not including precipitation run-off) is a hazardous waste. (However, materials that are reclaimed from solid wastes and that are used beneficially are not solid wastes and hence are not hazardous wastes under this provision unless the reclaimed material is burned for energy recovery or used in a manner constituting disposal.)

(II) The following solid wastes are not hazardous even though they are generated from the treatment, storage, or disposal of a hazardous waste, unless they exhibit one or more of the characteristics of hazardous waste:

I. Waste pickle liquor sludge generated by lime stabilization of spent pickle liquor from the iron and steel industry (SIC Codes 331 and 332).

II. Waste from burning any of the materials exempted from regulation by items (f)1(iii)(III) and (IV) of this paragraph.

III. A. Nonwastewater residues, such as slag, resulting from high temperature metals recovery (HTMR) processing of K061, K062 or F006 waste, in units identified as rotary kilns, flame reactors, electric furnaces, plasma arc furnaces, slag reactors, rotary hearth furnace/electric furnace combinations or industrial furnaces (as defined in items (vi), (vii) and (xiii) of the definition for "Industrial furnace" in Rule ~~1200-01-11-.01~~ 0400-12-01-.01(2)(a) that are disposed in nonhazardous solid waste (Subtitle D) units, provided that these residues meet the generic exclusion levels identified in the tables in this paragraph for all constituents, and exhibit no characteristics of hazardous waste. Testing requirements must be

incorporated in a facility's waste analysis plan or a generator's self-implementing waste analysis plan; at a minimum, composite samples of residues must be collected and analyzed quarterly and/or when the process or operation generating the waste changes. Persons claiming this exclusion in an enforcement action will have the burden of proving by clear and convincing evidence that the material meets all of the exclusion requirements.

Constituent	Maximum for any single composite sample-TCLP (mg/l)
Generic exclusion levels for K061 and K062 nonwastewater HTMR residues	
Antimony	0.10
Arsenic	0.50
Barium	7.6
Beryllium	0.010
Cadmium	0.050
Chromium (total)	0.33
Lead	0.15
Mercury	0.009
Nickel	1.0
Selenium	0.16
Silver	0.30
Thallium	0.020
Zinc	70

Generic exclusion levels for F006 nonwastewater HTMR residues	
Antimony	0.10
Arsenic	0.50
Barium	7.6
Beryllium	0.010
Cadmium	0.050
Chromium (total)	0.33
Cyanide (total) (mg/kg)	1.8
Lead	0.15
Mercury	0.009
Nickel	1.0
Selenium	0.16
Silver	0.30

Thallium	0.020
Zinc	70

B. A one-time notification and certification must be placed in the facility's files and sent to the Division Director for K061, K062 or F006 HTMR residues that meet the generic exclusion levels for all constituents and do not exhibit any characteristics that are sent to nonhazardous solid waste (Subtitle D) units. The notification and certification that is placed in the generators or treaters files must be updated if the process or operation generating the waste changes and/or if the nonhazardous solid waste (Subtitle D) unit receiving the waste changes. However, the generator or treater need only notify the Division Director or an authorized state on an annual basis if such changes occur. Such notification and certification should be sent to the Division Director by the end of the calendar year, but no later than December 31. The notification must include the following information: The name and address of the nonhazardous solid waste (Subtitle D) unit receiving the waste shipments; the Hazardous Waste Code(s) and treatability group(s) at the initial point of generation; and, the treatment standards applicable to the waste at the initial point of generation. The certification must be signed by an authorized representative and must state as follows: "I certify under penalty of law that the generic exclusion levels for all constituents have been met without impermissible dilution and that no characteristic of hazardous waste is exhibited. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment."

IV. Biological treatment sludge from the treatment of one of the following wastes listed in subparagraph (4)(c) - organic waste (including heavy ends, still bottoms, light ends, spent solvents, filtrates, and decantates) from the production of carbamates and carbamoyl oximes (Hazardous Waste Code K156), and wastewaters from the production of carbamates and carbamoyl oximes (Hazardous Waste Code K157).

V. Catalyst inert support media separated from one of the following wastes listed in subparagraph (4)(c) of this rule -- Spent hydrotreating catalyst (Hazardous Waste Code K171) and Spent hydrorefining catalyst (Hazardous Waste Code K172).

4. Any solid waste described in part 3 of this subparagraph is not a hazardous waste if it meets the following criteria:

(i) In the case of any solid waste, it does not exhibit any of the characteristics of hazardous waste identified in paragraph (3) of this rule. (However, wastes that exhibit a characteristic at the point of generation may still be subject to the requirements of Rule ~~1200-01-11-.10~~ 0400-12-01-.10, even if they no longer exhibit a characteristic at the point of land disposal.)

(ii) In the case of a waste which is a listed waste under paragraph (4) of this rule, contains a waste listed under paragraph (4) of this rule or is derived from a waste

listed in paragraph (4) of this rule, it also has been excluded from part 3 of this subparagraph under Rule ~~1200-01-11-.01~~ 0400-12-01-.01(3)(a) and (c).

5. (RESERVED) [40 CFR 261.3(e)]

6. Notwithstanding parts 1 through 4 of this subparagraph and provided the debris as defined in Rule ~~1200-01-11-.10~~ 0400-12-01-.10 does not exhibit a characteristic identified at paragraph (3) of this rule the following materials are not subject to regulation under Rules ~~1200-01-11-.01~~ 0400-12-01-.01 through .07, .09 and .10:

   (i) Hazardous debris as defined in Rule ~~1200-01-11-.10~~ 0400-12-01-.10 that has been treated using one of the required extraction or destruction technologies specified in Table 1 of Rule ~~1200-01-11-.10~~ 0400-12-01-.10(3)(f); persons claiming this exclusion in an enforcement action will have the burden of proving by clear and convincing evidence that the material meets all of the exclusion requirements; or

   (ii) Debris as defined in Rule ~~1200-01-11-.10~~ 0400-12-01-.10 of this chapter that the Commissioner, considering the extent of contamination, has determined is no longer contaminated with hazardous waste.

7. (i) A hazardous waste that is listed in paragraph (4) of this rule solely because it exhibits one or more characteristics of ignitability as defined under subparagraph (3)(b) of this rule, corrosivity as defined under subparagraph (3)(c) of this rule, or reactivity as defined under subparagraph (3)(d) of this rule is not a hazardous waste, if the waste no longer exhibits any characteristic of hazardous waste identified in paragraph (3) of this rule.

   (ii) The exclusion described in subpart (7)(i) of this subparagraph also pertains to:

      (I) Any mixture of a solid waste and a hazardous waste listed in paragraph (4) of this rule solely because it exhibits the characteristics of ignitability, corrosivity, or reactivity as regulated under item 1(ii)(IV) of this subparagraph; and

      (II) Any solid waste generated from treating, storing, or disposing of a hazardous waste listed in paragraph (4) of this rule solely because it exhibits the characteristics of ignitability, corrosivity, or reactivity as regulated under item 3(ii)(I) of this subparagraph.

   (iii) Wastes excluded under this part are subject to Rule 0400-12-01-.10 (as applicable), even if they no longer exhibit a characteristic at the point of land disposal.

   (iv) Any mixture of a solid waste excluded from regulation under Rule ~~1200-01-11-.02~~ 0400-12-01-.02(1)(d)2(xv) and a hazardous waste listed in paragraph (4) of this rule solely because it exhibits one or more of the characteristics of ignitability, corrosivity, or reactivity as regulated under Rule ~~1200-01-11-.02~~ 0400-12-01-.02(1)(c)1(ii)(IV) is not a hazardous waste, if the mixture no longer exhibits any characteristic of hazardous waste identified in paragraph (3) of this rule for which the hazardous waste listed in paragraph (4) of this rule was listed.

8. (i) Hazardous waste containing radioactive waste is no longer a hazardous waste when it meets the eligibility criteria and conditions of paragraph (14) of Rule ~~1200-01-11-.09~~ 0400-12-01-.09 ("eligible radioactive mixed waste").

   (ii) The exemption described in subpart 8(i) of this subparagraph also pertains to:

      (I) Any mixture of a solid waste and an eligible radioactive waste; and

(II) Any solid waste generated from treating, storing, or disposing of an eligible radioactive mixed waste.

(iii) Waste exempted under this ~~section~~ part must meet the eligibility criteria and specified conditions in part (14)(b)6 of Rule ~~1200-01-11-.09~~ 0400-12-01-.09 and part (14)(b)11 of Rule ~~1200-01-11-.09~~ 0400-12-01-.09 (for storage and treatment) and in part (14)(m)1 of Rule ~~1200-01-11-.09~~ 0400-12-01-.09 and part (14)(n)1 of Rule ~~1200-01-11-.09~~ 0400-12-01-.09 (for transportation and disposal). Waste that fails to satisfy these eligibility criteria and conditions is regulated as hazardous waste.

(d) Exclusions [40 CFR 261.4] & [40 CFR 262.70]

1. Materials which are not solid wastes

The following materials are not solid wastes for the purpose of this rule:

(i) (I) Domestic sewage; and

(II) Any mixture of domestic sewage and other wastes that passes through a sewer system to a publicly-owned treatment works (POTW) for treatment. "Domestic sewage" means untreated sanitary wastes that pass through a sewer system.

(Comment: This exclusion does not exclude waste/wastewaters while they are being generated, collected, stored, or treated before entering the sewer system. This exclusion applies when the material enters the sewer system where it will mix with sanitary wastes at any point before reaching the POTW whereupon this material is regulated under water pollution statutes and regulations. This material is subject to all applicable reporting, monitoring, and permitting requirements of the T. C. A. §§ 68-221-101, 69-3-101, et seq. and the associated regulations. Management of this material must be in compliance with all applicable authorization (permits, etc.) associated with disposal into a POTW for subsequent treatment.)

(ii) Industrial wastewater discharges that are point source discharges subject to regulation under section 402 of the Clean Water Act, as amended.

(Comment: This exclusion applies only to the actual point source discharge. It does not exclude industrial wastewaters while they are being collected, stored or treated before discharge, nor does it exclude sludges that are generated by industrial wastewater treatment.)

(iii) Irrigation return flows.

(iv) Source, special nuclear or by-product material as defined by the Atomic Energy Act of 1954, as amended, 42 U.S.C. 2011 et seq.

(v) Materials subjected to in-situ mining techniques which are not removed from the ground as part of the extraction process.

(vi) Pulping liquors (i.e., black liquor) that are reclaimed in a pulping liquor recovery furnace and then reused in the pulping process, unless it is accumulated speculatively as defined in subpart (a)3(viii) of this paragraph.

(vii) Spent sulfuric acid used to produce virgin sulfuric acid, unless it is accumulated speculatively as defined in subpart (a)3(viii) of this paragraph.

(viii) Secondary materials that are reclaimed and returned to the original process or processes in which they were generated where they are reused in the production process provided:

(I) Only tank storage is involved, and the entire process through completion of reclamation is closed by being entirely connected with pipes or other comparable enclosed means of conveyance;

(II) Reclamation does not involve controlled flame combustion (such as occurs in boilers, industrial furnaces, or incinerators);

(III) The secondary materials are never accumulated in such tanks for over twelve months without being reclaimed; and

(IV) The reclaimed material is not used to produce a fuel, or used to produce products that are used in a manner constituting disposal.

(ix) (I) Spent wood preserving solutions that have been reclaimed and are reused for their original intended purpose;

(II) Wastewaters from the wood preserving process that have been reclaimed and are reused to treat wood; and

(III) Prior to reuse, the wood preserving wastewaters and spent wood preserving solutions described in item (I) and (II) of this subpart, so long as they meet all of the following conditions:

I. The wood preserving wastewaters and spent wood preserving solutions are reused on-site at water borne plants in the production process for their original intended purpose;

II. Prior to reuse, the wastewaters and spent wood preserving solutions are managed to prevent release to either land or groundwater or both;

III. Any unit used to manage wastewaters and/or spent wood preserving solutions prior to reuse can be visually or otherwise determined to prevent such releases;

IV. Any drip pad used to manage the wastewaters and/or spent wood preserving solutions prior to reuse complies with the standards in Rule ~~1200-01-11-.05~~ 0400-12-01-.05(23), regardless of whether the plant generates a total of less than 100 kg/month of hazardous waste; and

V. Prior to operating pursuant to this exclusion, the plant owner or operator prepares a one-time notification stating that the plant intends to claim the exclusion, giving the date on which the plant intends to begin operating under the exclusion, and containing the following language: "I have read the applicable regulation establishing an exclusion for wood preserving wastewaters and spent wood preserving solutions and understand it requires me to comply at all times with the conditions set out in the regulation." The plant must maintain a copy of that document in its on-site records until closure of the facility. The exclusion applies only so long as the plant meets all of the conditions. If the plant goes out of compliance with any condition, it may apply to the Commissioner for reinstatement. The Commissioner may

reinstate the exclusion upon finding that the plant has returned to compliance with all conditions and that violations are not likely to recur.

(x) Hazardous Waste Codes K060, K087, K141, K142, K143, K144, K145, K147, and K148, and any wastes from the coke by-products processes that are hazardous only because they exhibit the Toxicity Characteristic (TC) specified in subparagraph (3)(e) of this rule when, subsequent to generation, these materials are recycled to coke ovens, to the tar recovery process as a feedstock to produce coal tar, or mixed with coal tar prior to the tar's sale or refining. This exclusion is conditioned on there being no land disposal of the wastes from the point they are generated to the point they are recycled to coke ovens or tar recovery or refining processes, or mixed with coal tar.

(xi) Nonwastewater splash condenser dross residue from the treatment of K061 in high temperature metals recovery units, provided it is shipped in drums (if shipped) and not land disposed before recovery.

(xii) (I) Oil-bearing hazardous secondary materials (i.e., sludges, byproducts, or spent materials) that are generated at a petroleum refinery (SIC code 2911) and are inserted into the petroleum refining process (SIC code 2911 - including, but not limited to distillation, catalytic cracking, fractionation, gasification (as defined in Rule ~~1200-01-11-.01~~ 0400-12-01-.01(2)(a) or thermal cracking units (i.e., cokers)) unless the material is placed on the land, or speculatively accumulated before being so recycled. Materials inserted into thermal cracking units are excluded under this item provided that the coke product also does not exhibit a characteristic of hazardous waste. Oil-bearing hazardous secondary materials may be inserted into the same petroleum refinery where they are generated, or sent directly to another petroleum refinery, and still be excluded under this provision. Except as provided in item (II) of this subpart, oil-bearing hazardous secondary materials generated elsewhere in the petroleum industry (i.e., from sources other than petroleum refineries) are not excluded under this subpart. Residuals generated from processing or recycling materials excluded under this item (I) of this subpart, where such materials as generated would have otherwise met a listing under paragraph (4) of this rule, are designated as F037 listed wastes when disposed of or intended for disposal.

(II) Recovered oil that is recycled in the same manner and with the same conditions as described in item (I) of this subpart. Recovered oil is oil that has been reclaimed from secondary materials (including wastewater generated from normal petroleum industry practices, including refining, exploration and production, bulk storage, and transportation incident thereto (SIC codes 1311, 1321, 1381, 1382, 1389, 2911, 4612, 4613, 4922, 4923, 4789, 5171, and 5172). Recovered oil does not include oil-bearing hazardous wastes listed in paragraph (4) of this rule; however, oil recovered from such wastes may be considered recovered oil. Recovered oil does not include used oil as defined in Rule ~~1200-01-11-.11~~ 0400-12-01-.11(1)(a).

(xiii) Petroleum tank bottom waters (the water phase which accumulates in operating petroleum tanks) removed from petroleum tanks at retail, government or private outlets, bulk petroleum plants and terminals, or petroleum pipeline breakout tankage that contain recoverable petroleum product provided:

(I) The petroleum product is being or shall be legitimately recycled;

(II) The owner or operator of the petroleum facility maintains adequate records which document:

I. The dates and amounts of material removed from the petroleum tanks;

II. The dates the materials were either recycled on-site or shipped off-site to a legitimate recycler; and

III. If shipped off-site for recycling, the names of recyclers and transporters used;

(III) If accumulated on-site before being recycled, the material is accumulated in suitable tanks or containers; and:

I. Each tank or container is appropriately labeled or marked as to its contents;

II. The material is not accumulated on-site at retail government or private outlets for more than 30 days from the date that a total of 55 gallons has accumulated after removal from the petroleum tank before being recycled on-site or shipped off-site to a legitimate recycling facility; or

III. The material is not accumulated on-site at all other petroleum facilities for more than 90 days from the date it was removed from the petroleum tank before being recycled on-site or shipped off-site to a legitimate recycling facility; and

IV. Each tank or container is managed in such a manner as to minimize threats to public health and the environment, (e.g., keeping containers closed during storage, etc.).

(IV) These materials are not, at any time, accumulated or stored in earthen vessels (including, but not limited to inground or aboveground ponds, lagoons, or surface impoundments).

(xiv) Petroleum tank bottom waters (the water phase which accumulates in operating petroleum tanks) removed from petroleum tanks at retail, government or private outlets, bulk petroleum plants or terminals, or petroleum pipeline breakout tankage that contain recoverable petroleum product and which are received at recycling facilities for product reclamation provided that:

(I) The petroleum product is being or shall be legitimately recycled; and

(II) The owner or operator of the recycling facility maintains adequate records which document:

I. The generators and transporters names and addresses, and the dates and amounts of material received by the facility from off-site for recycling;

II. The recovered quantities of product; and

III. If the recovered product is shipped off-site, the names of the transporter(s) used and the dates and quantities of recovered product shipped off-site after recovery.

(III) These materials are not, at any time, accumulated or stored in earthen vessels (including, but not limited to inground or aboveground ponds, lagoons, or surface impoundments).

(xv) Excluded scrap metal (processed scrap metal, unprocessed home scrap metal, and unprocessed prompt scrap metal) being recycled.

(xvi) Shredded circuit boards being recycled provided that they are:

(I) Stored in containers sufficient to prevent a release to the environment prior to recovery; and

(II) Free of mercury switches, mercury relays and nickel-cadmium batteries and lithium batteries.

(xvii) Condensates derived from the overhead gases from kraft mill steam strippers that are used to comply with 40 CFR 63.446(e). The exemption applies only to combustion at the mill generating the condensates.

(xviii) Comparable fuels or comparable syngas fuels (i.e., comparable/syngas fuels) that meet the requirements of subparagraph (4)(i) of this rule.

(xix) Spent materials (as defined in subparagraph (a) of this paragraph) (other than hazardous wastes listed in paragraph (4) of this rule) generated within the primary mineral processing industry from which minerals, acids, cyanide, water or other values are recovered by mineral processing or by beneficiation, provided that:

(I) The spent material is legitimately recycled to recover minerals, acids, cyanide, water or other values.

(II) The spent material is not accumulated speculatively.

(III) Except as provided in item (IV) of this subpart, the spent material is stored in tanks, containers, or buildings meeting the following minimum integrity standards: a building must be an engineered structure with a floor, walls, and a roof all of which are made of non-earthen materials providing structural support (except smelter buildings may have partially earthen floors provided the secondary material is stored on the non-earthen portion), and have a roof suitable for diverting rainwater away from the foundation; a tank must be free standing, not be a surface impoundment (as defined in Rule ~~1200-01-11-.01~~ 0400-12-01-.01(2)(a)), and be manufactured of a material suitable for containment of its contents; a container must be free standing and be manufactured of a material suitable for containment of its contents. If tanks or containers contain any particulate which may be subject to wind dispersal, the owner/operator must operate these units in a manner which controls fugitive dust. Tanks, containers, and buildings must be designed, constructed and operated to prevent significant releases to the environment of these materials.

(IV) The Commissioner may make a site-specific determination, after public review and comment, that only solid mineral processing spent materials may be placed on pads, rather than in tanks, containers, or buildings. Solid mineral processing spent materials do not contain any free liquid. The decision-maker must affirm that pads are designed, constructed and operated to prevent significant releases of the spent material into the environment. Pads must provide the same degree of containment

afforded by the non-RCRA tanks, containers and buildings eligible for exclusion.

I. The decision-maker must also consider if storage on pads poses the potential for significant releases via groundwater, surface water, and air exposure pathways. Factors to be considered for assessing the groundwater, surface water, air exposure pathways are: the volume and physical and chemical properties of the spent material, including its potential for migration off the pad; the potential for human or environmental exposure to hazardous constituents migrating from the pad via each exposure pathway, and the possibility and extent of harm to human and environmental receptors via each exposure pathway.

II. Pads must meet the following minimum standards: be designed of non-earthen material that is compatible with the chemical nature of the mineral processing spent material, capable of withstanding physical stresses associated with placement and removal, have run-on/runoff controls, be operated in a manner which controls fugitive dust, and have integrity assurance through inspections and maintenance programs.

III. Before making a determination under this subpart, the Commissioner must provide public notice and the opportunity for comment to all persons potentially interested in the determination. This can be accomplished by the owner or operator placing notice, as provided for in Rule ~~1200-01-11-.07~~ 0400-12-01-.07(7)(e) and as prepared and required by the Commissioner, of this action in local newspapers, or broadcasting notice over local radio stations. The owner or operator shall provide proof of the completion of all notice requirements to the Commisioner within ten (10) days following conclusion of the public notice procedures.

(V) The owner or operator provides notice to the Commissioner, providing the following information: the types of materials to be recycled; the type and location of the storage units and recycling processes; and the annual quantities expected to be placed in land-based units. This notification must be updated when there is a change in the type of materials recycled or the location of the recycling process.

(VI) For purposes of subpart 2(xv) of this subparagraph, mineral processing spent materials must be the result of mineral processing and may not include any listed hazardous wastes. Listed hazardous wastes and characteristic hazardous wastes generated by non-mineral processing industries are not eligible for the conditional exclusion from the definition of solid waste.

(xx) Petrochemical recovered oil from an associated organic chemical manufacturing facility, where the oil is to be inserted into the petroleum refining process (SIC code 2911) along with normal petroleum refinery process streams, provided:

(I) The oil is hazardous only because it exhibits the characteristic of ignitability (as defined in subparagraph (3)(b) of this rule) and/or toxicity for benzene (subparagraph (3)(e) of this rule, waste code D018); and

(II) The oil generated by the organic chemical manufacturing facility is not placed on the land, or speculatively accumulated before being recycled into the petroleum refining process. An "associated organic chemical

manufacturing facility" is a facility where the primary SIC code is 2869, but where operations may also include SIC codes 2821, 2822, and 2865; and is physically co-located with a petroleum refinery; and where the petroleum refinery to which the oil being recycled is returned also provides hydrocarbon feedstocks to the organic chemical manufacturing facility. "Petrochemical recovered oil" is oil that has been reclaimed from secondary materials (i.e., sludges, byproducts, or spent materials, including wastewater) from normal organic chemical manufacturing operations, as well as oil recovered from organic chemical manufacturing processes.

(xxi) Spent caustic solutions from petroleum refining liquid treating processes used as a feedstock to produce cresylic or naphthenic acid unless the material is placed on the land, or accumulated speculatively as defined in part (1)(a)3 of this rule.

(xxii) Hazardous secondary materials used to make zinc fertilizers, provided that the conditions specified below are satisfied:

(I) Hazardous secondary materials used to make zinc micronutrient fertilizers must not be accumulated speculatively, as defined in subpart (1)(a)3(viii) of this rule.

(II) Generators and intermediate handlers of zinc-bearing hazardous secondary materials that are to be incorporated into zinc fertilizers must:

I. Submit a one-time notice to the Commissioner which contains the name, address and installation identification number of the generator or intermediate handler facility, provides a brief description of the secondary material that will be subject to the exclusion, and identifies when the manufacturer intends to begin managing excluded, zinc-bearing hazardous secondary materials under the conditions specified in this subpart.

II. Store the excluded secondary material in tanks, containers, or buildings that are constructed and maintained in a way that prevents releases of the secondary materials into the environement. At a minimum, any building used for this purpose must be an engineered structure made of non-earthen materials that provide structural support, and must have a floor, walls and a roof that prevent wind dispersal and contact with rainwater. Tanks used for this purpose must be structurally sound and, if outdoors, must have roofs or covers that prevent contact with wind and rain. Containers used for this purpose must be kept closed except when it is necessary to add or remove material, and must be in sound condition. Containers that are stored outdoors must be managed within storage areas that:

A. Have containment structrures or systems sufficiently impervious to contain leaks, spills and accumulated precipitation; and

B. Provide for effective drainage and removal of leaks, spills and accumulated precipitation; and

C. Prevent run-on into the containment system.

III. With each off-site shipment of excluded hazardous secondary materials, provide written notice to the receiving facility that the material is subject to the conditions of this subpart.

IV. Maintain at the generator's or intermediate handler's facility for no less than three years records of all shipments of excluded hazardous secondary materials. For each shipment these records must at a minimum contain the following information:

A. Name of the transporter and date of the shipment;

B. Name and address of the facility that received the excluded material, and documentation confirming receipt of the shipment; and

C. Type and quantity of excluded secondary material in each shipment.

(III) Manufacturers of zinc fertilizers or zinc fertilizer ingredients made from excluded hazardous secondary materials must:

I. Store excluded hazardous secondary materials in accordance with the storage requirements for generators and intermediate handlers, as specified in subitem (II)II of this subpart.

II. Submit a one-time notification to the Commissioner that, at a minimum, specifies the name, address and installation identification number of the manufacturing facility, and identifies when the manufacturer intends to begin managing excluded, zinc-bearing hazardous secondary materials under the conditions specified in this subpart.

III. Maintain for a minimum of three (3) years records of all shipments of excluded hazardous secondary materials received by the manufacturer, which must at a minimum identify for each shipment the name and address of the generating facility, name of the transporter and the date the materials were received, the quantity received, and a brief description of the industrial process that generated the material.

IV. Submit to the Commissioner an annual report that identifies the total quantities of all excluded hazardous secondary materials that were used to manufacture zinc fertilizers or zinc fertilizer ingredients in the previous year, the name and address of each generating facility, and the industrial process(es) from which they were generated.

(IV) Nothing in this subpart preempts, overrides or otherwise negates the provision in Rule ~~1200-01-11-.03~~ 0400-12-01-.03(1)(b) which requires any person who generates a solid waste to determine if that waste is a hazardous waste.

(V) Interim status and permitted storage units that have been used to store only zinc-bearing hazardous wastes prior to the submission of the one-time notice described in subitem (II)I of this subpart, and that afterward will be used only to store hazardous secondary materials excluded under subitem (II)I of this subpart, are not subject to the closure requirements of Rules ~~1200-01-11-.05~~ 0400-12-01-.05 and .06.

(xxi) Zinc fertilizers made from hazardous wastes, or hazardous secondary materials that are excluded under subpart (xxii) of this part, provided that:

(I) The fertilizers meet the following contaminate limits:

I. For metal contaminants:

Constituent	Maximum Allowable Total Concentration in Fertilizer, per Unit (1%) of Zinc (ppm)
Arsenic	0.3
Cadmium	1.4
Chromium	0.6
Lead	2.8
Mercury	0.3

II. For dioxin contaminants the fertilizer must contain no more than eight (8) parts per trillion of dioxin, measured as toxic equivalent (TEQ).

(I) The manufacturer performs sampling and analysis of the fertilizer product to determine compliance with the contaminant limits for metals no less than every six months, and for dioxins no less than every twelve months. Testing must also be performed whenever changes occur to manufacturing processes or ingredients that could significantly affect the amounts of contaminants in the fertilizer product. The manufacturer may use any reliable analytical method to demonstrate that no constituent of concern is present in the product at concentrations above the applicable limits. It is the responsibility of the manufacturer to ensure that the sampling and analysis are unbiased, precise, and representative of the product(s) introduced into commerce.

(II) The manufacturer maintains for no less than three years records of all sampling and analyses performed for purposes of determining compliance with the requirements of item (II) of this subpart. Such records must at a minimum include:

I. The dates and times product samples were taken, and the dates the samples were analyzed;

II. The names and qualifications of the person(s) taking the samples;

III. A description of the methods and equipment used to take the samples;

IV. The name and address of the laboratory facility at which analyses of the samples were performed;

V. A description of the analytical methods used, including any cleanup and sample preparation methods; and

VI. All laboratory analytical results used to determine compliance with the contaminant limits specified in this subpart.

(xxiv) Used cathode ray tubes (CRTs)

(I) Used, intact CRTs as defined in Rule ~~1200-01-11-.01~~ 0400-12-01-.01(2)(a) are not solid wastes within the United States unless they are disposed, or unless they are speculatively accumulated as defined in subpart (1)(a)3(viii) of this rule by CRT collectors or glass processors.

(II) Used, intact CRTs as defined in Rule ~~1200-01-11-.01~~ 0400-12-01-.01(2)(a) are not solid wastes when exported for recycling provided that they meet the requirements of subparagraph (6)(c) of this rule.

(III) Used, broken CRTs as defined in Rule ~~1200-01-11-.01~~ 0400-12-01-.01(2)(a) are not solid wastes provided that they meet the requirements of subparagraph (6)(b) of this rule.

(IV) Glass removed from CRTs is not a solid waste provided that it meets the requirements of part (6)(b)3 of this rule.

2. Wastes Which Are Not Hazardous Wastes

The following wastes are not hazardous wastes:

(i) Household waste, including household waste that has been collected, transported, stored, treated, disposed, recovered (e.g., refuse-derived fuel) or reused. "Household waste" means any material (including garbage, trash and sanitary wastes in septic tanks) derived from households (including single and multiple residences, hotels and motels, bunkhouses, ranger stations, crew quarters, campgrounds, picnic grounds and day-use recreation areas). A resource recovery facility managing municipal waste shall not be deemed to be treating, storing, disposing of, or otherwise managing hazardous wastes for the purposes of regulation under ~~Rule~~ Chapter ~~1200-01-11~~ 0400-12-01, if such facility:

(I) Receives and burns only

I. Household waste (from single and multiple dwellings, hotels, motels, and other residential sources) and

II. Waste from commercial or industrial sources that does not contain hazardous waste; and

(II) Such facility does not accept hazardous wastes and the owner or operator of such facility has established contractual requirements or other appropriate notification or inspection procedures to assure that hazardous wastes are not received at or burned in such facility.

(ii) The following wastes generated within a farm and incidental to the operation of that farm:

(I) Wastes from the growing and harvesting of agricultural crops or from the raising of animals (including animal manures), which are returned to the soil as fertilizers; and

(II) Waste pesticides, provided the farmer triple-rinses each emptied pesticide container (using a capable solvent) and disposes of the pesticide residues on his own farm in a manner consistent with the disposal instructions on the pesticide label.

(iii) Mining overburden returned to the mine site.

(iv) Waste which consists of discarded arsenical-treated wood or wood products which fails the test for the Toxicity Characteristic for Hazardous Waste Codes D004 through D017 and which is not a hazardous waste for any other reason if the waste is generated by persons who utilize the arsenical-treated wood and wood products for these materials' intended end use.

(v) (I) Wastes which fail the test for the Toxicity Characteristic because chromium is present or are listed in paragraph (4) of this rule due to the presence of chromium, which do not fail the test for the Toxicity Characteristic for any other constituent or are not listed due to the presence of any other constituent, and which do not fail the test for any other characteristic, if a waste generator demonstrates to the satisfaction of the Director, by submitting an exclusion request and supporting documentation, that:

I. The chromium in the waste is exclusively (or nearly exclusively) trivalent chromium; and

II. The waste generated from an industrial process is trivalent chromium exclusively (or nearly exclusively) and the process does not contain more than minimal amounts of hexavalent chromium[1]; and

III. The waste is managed by the waste generator in non-oxidizing environments.

(II) The generator shall also submit to the Department a Chromium Exclusion Review Fee identified in Rule ~~1200-01-11-.08~~ 0400-12-01-.08(11) prior to the Director's review of the submitted documentation.

(III) Such exclusion shall be effective only after approval in writing by the Director. Persons who obtain an exclusion shall:

I. Annually recertify the accuracy of the information on a form provided by the Director that there has been no change in the waste stream or the process generating the waste since the original exlusion was granted; and

II. It shall be the responsibility of the generator (applicant) to submit all recertifications as required by item (I) by March 1 of each succeeding year following the granting of the exclusion.

III. If a change in the waste stream or the process generating the waste has occurred since the original exclusion was granted, the generator (applicant) shall submit a new exclusion request and review fee to the Director.

(vi) Specific wastes which meet the standard in subpart (v) of this part (so long as they do not fail the test for the toxicity characteristic for any other constituent, and do not exhibit any other characteristic) are:

(I) Chrome (blue) trimmings generated by the following subcategories of the leather tanning and finishing industry: Hair pulp/chrome tan/retan/wet finish; hair save/chrome tan/retan/wet finish; retan/wet finish; no beamhouse; through-the-blue; and shearling.

(II) Chrome (blue) shavings generated by the following subcategories of the leather tanning and finishing industry: Hair pulp/chrome tan/retan/wet finish; hair save/chrome tan/retan/wet finish; retan/wet finish; no beamhouse; through-the-blue; shearling.

[1] Hexavalent chromium concentrations below 5 mg/l currently are considered minimal.

(III) Buffing dust generated by the following subcategories of the leather tanning and finishing industry: Hair pulp/chrome tan/retan/wet finish; hair save/chrome tan/retan/wet finish; retan/wet finish; no beamhouse; through-the-blue.

(IV) Sewer screenings generated by the following subcategories of the leather tanning and finishing industry: Hair pulp/chrome tan/retan/wet finish; hair save/chrome tan/retan/wet finish; retan/wet finish; no beamhouse; through-the-blue; and shearling.

(V) Wastewater treatment sludges generated by the following subcategories of the leather tanning and finishing industry: Hair pulp/chrome tan/retan/wet finish; hair save/chrome tan/retan/wet finish; retan/wet finish; no beamhouse; through-the-blue; and shearling.

(VI) Wastewater treatment sludges generated by the following subcategories of the leather tanning and finishing industry: Hair pulp/chrome tan/retan/wet finish; hair save/chrome tan/retan/wet finish; and through-the-blue.

(VII) Waste scrap leather from the leather tanning industry, the shoe manufacturing industry, and other leather product manufacturing industries.

(VIII) Wastewater treatment sludges from the production of TiO_2 pigment using chromium-bearing ores by the chloride process.

(vii) Petroleum-contaminated media and debris that fail the test for the Toxicity Characteristic of subparagraph (3)(e) of this rule (Hazardous Waste Codes D018 through D043 only) and are subject to the corrective action regulations under 40 CFR Part 280 (as those Federal regulations exist on the effective date of these rules).

(viii) Injected groundwater that is hazardous only because it exhibits the Toxicity Characteristic (Hazardous Waste Codes D018 through D043 only) in subparagraph (3)(e) of this rule that is reinjected through an underground injection well pursuant to free phase hydrocarbon recovery operations undertaken at petroleum refineries, petroleum marketing terminals, petroleum bulk plants, petroleum pipelines, and petroleum transportation spill sites until January 25, 1993. This extension applies to recovery operations in existence, or for which contracts have been issued, on or before March 25, 1991. New operations involving injection wells (beginning after March 25, 1991) will qualify for this compliance date extension (until January 25, 1993) only if operations are performed pursuant to a written state agreement issued under the Tennessee Water Quality Control Act (T.C.A. §69-3-101 et seq.) that includes a provision to assess the groundwater and the need for further remediation once the free phase recovery is completed.

(ix) Used chlorofluorocarbon refrigerants from totally enclosed heat transfer equipment, including mobile air conditioning systems, mobile refrigeration, and commercial and industrial air conditioning and refrigeration systems that use chlorofluorocarbons as the heat transfer fluid in a refrigeration cycle, provided the refrigerant is reclaimed for further use.

(x) Non-terne plated used oil filters that are not mixed with wastes listed in paragraph (4) of this rule if these oil filters have been gravity hot-drained using one of the following methods:

(I) Puncturing the filter anti-drain back valve or the filter dome end and hot-draining;

(II) Hot-draining and crushing;

(III) Dismantling and hot-draining; or

(IV) Any other equivalent hot-draining method which will remove used oil.

(xi) Used oil re-refining distillation bottoms that are used as feedstock to manufacture asphalt products.

(xii) Leachate or gas condensate collected from landfills where certain solid wastes have been disposed, provided that:

(I) The solid wastes disposed would meet one or more of the listing descriptions for hazardous Waste Codes K169, K170, K171, K172, K174, K175, K176, K177, K178, and K181 if these wastes had been generated after November 28, 2000;

(II) The solid wastes described in item (I) of this subpart were disposed prior to November 28, 2000;

(III) The leachate or gas condensate do not exhibit any characteristic of hazardous waste nor are derived from any other listed hazardous waste;

(IV) Discharge of the leachate or gas condensate, including leachate or gas condensate transferred from the landfill to a POTW by truck, rail, or dedicated pipe, is subject to regulation under sections 307(b) or 402 of the Clean Water Act;

(V) As of February 13, 2001, leachate or gas condensate derived from K169-K172 is no longer exempt if it is stored or managed in a surface impoundment prior to discharge. As of November 21, 2003, leachate or gas condensate derived from K176, K177, and K178 is no longer exempt if it is stored or managed in a surface impoundment prior to discharge. After February 26, 2007, leachate or gas condensate derived from K181 will no longer be exempt if it is stored or managed in a surface impoundment prior to discharge. There is one exception: if the surface impoundment is used to temporarily store leachate or gas condensate in response to an emergency situation (e. g., shutdown of wastewater treatment system), provided the impoundment has a double liner, and provided the leachate or gas condensate is removed from the impoundment and continues to be managed in compliance with the conditions of this item (V) after the emergency ends.

(xiii) Fly ash waste, bottom ash waste, slag waste, and flue gas emission control waste, generated primarily from the combustion of coal or other fossil fuels, except as provided by Rule ~~1200-01-11-.09~~ 0400-12-01-.09(8)(m) for facilities that burn or process hazardous waste.

(xiv) Drilling fluids, produced waters, and other wastes associated with the exploration, development, or production of crude oil, natural gas or geothermal energy.

(xv) Solid waste from the extraction, beneficiation, and processing of ores and minerals (including coal, phosphate rock and overburden from the mining of uranium ore), except as provided by Rule ~~1200-01-11-.09~~ 0400-12-01-.09(8)(m) for facilities that burn or process hazardous waste.

(I) For purposes of this subpart, beneficiation of ores and minerals is restricted to the following activities: crushing; grinding; washing; dissolution; crystallization; filtration; sorting; sizing; drying; sintering; pelletizing; briquetting; calcining to remove water and/or carbon dioxide; roasting, autoclaving, and/or chlorination in preparation for leaching (except where the roasting (and/or autoclaving and/or chlorination)/leaching sequence produces a final or intermediate product that does not undergo further beneficiation or processing); gravity concentration; magnetic separation; electrostatic separation; flotation; ion exchange; solvent extraction; electrowinning; precipitation; amalgamation; and heap, dump, vat, tank, and in situ leaching.

(II) For the purpose of this subpart, solid waste from the processing of ores and minerals includes only the following wastes as generated:

~~A~~ I. Slag from primary copper processing;

~~B~~ II. Slag from primary lead processing;

~~C~~ III. Red and brown muds from bauxite refining;

~~D~~ IV. Phosphogypsum from phosphoric acid production;

~~E~~ V. Slag from elemental phosphorus production;

~~F~~ VI. Gasifier ash from coal gasification;

~~G~~ VII. Process wastewater from coal gasification;

~~H~~ VIII. Calcium sulfate wastewater treatment plant sludge from primary copper processing;

~~I~~ IX. Slag tailings from primary copper processing;

~~J~~ X. Fluorogypsum from hydrofluoric acid production;

~~K~~ XI. Process wastewater from hydrofluoric acid production;

~~L~~ XII. Air pollution control dust/sludge from iron blast furnaces;

~~M~~ XIII. Iron blast furnace slag;

~~N~~ XIV. Treated residue from roasting/leaching of chrome ore;

~~O~~ XV. Process wastewater from primary magnesium processing by the anhydrous process;

~~P~~ XVI. Process wastewater from phosphoric acid production;

~~Q~~ XVII. Basic oxygen furnace and open hearth furnace air pollution control dust/sludge from carbon steel production;

~~R~~ XVIII. Basic oxygen furnace and open hearth furnace slag from carbon steel production;

~~S~~ XIX. Chloride process waste solids from titanium tetrachloride production;

~~T~~ XX. Slag from primary zinc processing.

(III) A residue derived from co-processing mineral processing secondary materials with normal beneficiation raw materials or with normal mineral processing raw materials remains excluded under this part if the owner or operator:

I. Processes at least 50 percent by weight normal beneficiation raw materials or normal mineral processing raw materials; and,

II. Legitimately reclaims the secondary mineral processing materials.

(xvi) Cement kiln dust waste, except as provided by Rule ~~1200-01-11-.09~~ 0400-12-01-.09(8)(m) for facilities that burn or process hazardous waste.

3. Hazardous Wastes Which Are Exempted From Certain Regulations

(i) A hazardous waste which is generated in a product or raw material storage tank, a product or raw material transport vehicle or vessel, a product or raw material pipeline, or in a manufacturing process unit or an associated non-waste-treatment manufacturing unit, is not subject to regulation under these rules except as specified in subpart (ii) of this part until it exits the unit in which it was generated, unless the unit is a surface impoundment, or unless the hazardous waste remains in the unit more than 90 days after the unit ceases to be operated for manufacturing, or for storage or transportation of product or raw materials.

(ii) A hazardous waste as described in subpart (i) of this part shall be subject to the generator notification requirement of Rule ~~1200-01-11-.03~~ 0400-12-01-.03(2), and shall be subject to such requirement irrespective of how the waste is managed after it exits the units in which it was generated (e.g., even if it exits directly into a domestic sewer system), except as provided otherwise in Rule ~~1200-01-11-.03~~ 0400-12-01-.03(2)(a)2. Such a waste shall also be subject to the annual reporting requirements of Rule ~~1200-01-11-.03~~ 0400-12-01-.03(5)(b) for the years in which it is removed from the units in which it was generated.

4. Samples

(i) Except as provided in subpart (ii) of this part, a sample of solid waste or a sample of water, soil, or air, which is collected for the sole purpose of testing to determine its characteristics or composition, is not subject to any requirements of these rules when:

(I) The sample is being transported to a laboratory for the purpose of testing; or

(II) The sample is being transported back to the sample collector after testing; or

(III) The sample is being stored by the sample collector before transport to a laboratory for testing; or

(IV) The sample is being stored in a laboratory before testing; or

(V) The sample is being stored in a laboratory after testing but before it is returned to the sample collector; or

(VI) The sample is being stored temporarily in the laboratory after testing for a specific purpose (for example, until the conclusion of a court case or enforcement action where further testing of the sample may be necessary).

(ii) In order to qualify for the exemption in items (i)(I) and (II) of this part a sample collector shipping samples to a laboratory and a laboratory returning samples to a sample collector must:

(I) Comply with U.S. Department of Transportation (DOT), U.S. Postal Service (USPS), or any other applicable shipping requirements; or

(II) Comply with the following requirements if the sample collector determines that DOT, USPS, or other shipping requirements do not apply to the shipment of the sample:

I. Assure that the following information accompanies the sample:

A. The sample collector's name, mailing address, and telephone number;

B. The laboratory's name, mailing address, and telephone number;

C. The quantity of the sample;

D. The date of shipment; and

E. A description of the sample.

II. Package the sample so that it does not leak, spill, or vaporize from its packaging.

(iii) This exemption does not apply if the laboratory determines that the waste is hazardous but the laboratory is no longer meeting any of the conditions stated in subpart (i) of this part.

5. Treatability Study Samples

(i) Except as provided in subpart (ii) of this part, persons who generate or collect samples for the purpose of conducting treatability studies as defined in Rule ~~1200-01-11-.01~~ 0400-12-01-.01(2)(a), are not subject to any requirement of Rule ~~1200-01-11-.02~~ 0400-12-01-.02, .03 and .04, nor are such samples included in the quantity determinations of paragraph (e) of this rule and Rule ~~1200-01-11-.03~~ 0400-12-01-.03(4)(e)6 when:

(I) The sample is being collected and prepared for transportation by the generator or sample collector; or

(II) The sample is being accumulated or stored by the generator or sample collector prior to transportation to a laboratory or testing facility; or

(III) The sample is being transported to the laboratory or testing facility for the purpose of conducting a treatability study.

(ii) The exemption in subpart (i) of this part is applicable to samples of hazardous waste being collected and shipped for the purpose of conducting treatability studies provided that:

(I) The generator or sample collector uses (in "treatability studies") no more than 10,000 kg of media contaminated with non-acute hazardous waste, 1000 kg of non-acute hazardous waste other than contaminated media, 1 kg of acute hazardous waste, 2500 kg of media contaminated with acute hazardous waste for each process being evaluated for each generated waste stream; and

(II) The mass of each sample shipment does not exceed 10,000 kg; the 10,000 kg quantity may be all media contaminated with non-acute hazardous waste, or may include 2500 kg of media contaminated with acute hazardous waste, 1000 kg of hazardous waste, and 1 kg of acute hazardous waste; and

(III) The sample must be packaged so that it will not leak, spill, or vaporize from its packaging during shipment and the requirements of subitem I or II of this part are met.

I. The transportation of each sample shipment complies with U.S. Department of Transportation (DOT), U.S. Postal Service (USPS), or any other applicable shipping requirements; or

II. If the DOT, USPS, or other shipping requirements do not apply to the shipment of the sample, the following information must accompany the sample:

A. The name, mailing address, and telephone number of the originator of the sample;

B. The name, address, and telephone number of the facility that will perform the treatability study;

C. The quantity of the sample;

D. The date of shipment; and

E. A description of the sample, including its Hazardous Waste Code.

(IV) The sample is shipped to a laboratory or testing facility which is exempt under part 6 of this subparagraph or has an appropriate permit or interim status.

(V) The generator or sample collector maintains the following records for a period ending 3 years after completion of the treatability study:

I. Copies of the shipping documents;

II. A copy of the contract with the facility conducting the treatability study;

III. Documentation showing:

A. The amount of waste shipped under this exemption;

B. The name, address, and Installation Identification Number of the laboratory or testing facility that received the waste;

C. The date the shipment was made; and

D. Whether or not unused samples and residues were returned to the generator.

(VI) The generator reports the information required under subitem (ii)(V)III of this part in its annual report.

(iii) The Commissioner may grant requests on a case-by-case basis for up to an additional two years for treatability studies involving bioremediation. The Commissioner may grant requests on a case-by-case basis for quantity limits in excess of those specified in items (I) and (II) of this subpart and subpart 6(iv) of this subparagraph, for up to an additional 5000 kg of media contaminated with non-acute hazardous waste, 500 kg of non-acute hazardous waste, 2500 kg of media contaminated with acute hazardous waste and 1 kg of acute hazardous waste:

(I) In response to requests for authorization to ship, store and conduct treatability studies on additional quantities in advance of commencing treatability studies. Factors to be considered in reviewing such requests include the nature of the technology, the type of process (e.g., batch versus continuous), size of the unit undergoing testing (particularly in relation to scale-up considerations), the time/quantity of material required to reach steady state operating conditions, or test design considerations such as mass balance calculations.

(II) In response to requests for authorization to ship, store and conduct treatability studies on additional quantities after initiation or completion of initial treatability studies, when: There has been an equipment or mechanical failure during the conduct of a treatability study; there is a need to verify the results of a previously conducted treatability study; there is a need to study and analyze alternative techniques within a previously evaluated treatment process; or there is a need to do further evaluation of an ongoing treatability study to determine final specifications for treatment.

(III) The additional quantities and timeframes allowed in items (I) and (II) of this subpart are subject to all the provisions in subpart (i) and items (III) through (VI) of subpart (ii) of this part. The generator or sample collector must apply to the Commissioner and provide in writing the following information:

I. The reason why the generator or sample collector requires additional time or quantity of sample for treatability study evaluation and the additional time or quantity needed;

II. Documentation accounting for all samples of hazardous waste from the waste stream which have been sent for or undergone treatability studies including the date each previous sample from the waste stream was shipped, the quantity of each previous shipment, the laboratory or testing facility to which it was shipped, what treatability study processes were conducted on each sample shipped, and the available results on each treatability study;

III. A description of the technical modifications or change in specifications which will be evaluated and the expected results;

IV. If such further study is being required due to equipment or mechanical failure, the applicant must include information

regarding the reason for the failure or breakdown and also include what procedures or equipment improvements have been made to protect against further breakdowns; and

V. Such other information that the Commissioner considers necessary.

6. Samples Undergoing Treatability Studies at Laboratories and Testing Facilities

Samples undergoing treatability studies and the laboratory or testing facility conducting such treatability studies (to the extent such facilities are not otherwise subject to the requirements under this ~~Rule~~ Chapter) are not subject to any requirement of this ~~Rule~~ Chapter provided that the conditions of subparts (i) through (xi) of this part are met. A mobile treatment unit (MTU) may qualify as a testing facility subject to subparts (i) through (xi) of this part. Where a group of MTUs are located at the same site, the limitations specified in subparts (i) through (xi) of this part apply to the entire group of MTUs collectively as if the group were one MTU.

(i) No less than 45 days before conducting treatability studies, the facility notifies the Commissioner, in writing that it intends to conduct treatability studies under this paragraph.

(ii) The laboratory or testing facility conducting the treatability study has an Installation Identification Number.

(iii) No more than a total of 10,000 kg of "as received" media contaminated with non-acute hazardous waste, 2500 kg of media contaminated with acute hazardous waste or 250 kg of other "as received" hazardous waste is subject to initiation of treatment in all treatability studies in any single day. "As received" waste refers to the waste as received in the shipment from the generator or sample collector.

(iv) The quantity of "as received" hazardous waste stored at the facility for the purpose of evaluation in treatability studies does not exceed 10,000 kg, the total of which can include 10,000 kg of media contaminated with non-acute hazardous waste, 2500 kg of media contaminated with acute hazardous waste, 1000 kg of non-acute hazardous wastes other than contaminated media, and 1 kg of acute hazardous waste. This quantity limitation does not include treatment materials (including nonhazardous solid waste) added to "as received" hazardous waste.

(v) No more than 90 days have elapsed since the treatability study for the sample was completed, or no more than one year (two years for treatability studies involving bioremediation) have elapsed since the generator or sample collector shipped the sample to the laboratory or testing facility, whichever date first occurs. Up to 500 kg of treated material from a particular waste stream from treatability studies may be archived for future evaluation up to five years from the date of initial receipt. Quantities of materials archived are counted against the total storage limit for the facility.

(vi) The treatability study does not involve the placement of hazardous waste on the land or open burning of hazardous waste.

(vii) The facility maintains records for 3 years following completion of each study that show compliance with the treatment rate limits and the storage time and quantity limits. The following specific information must be included for each treatability study conducted:

(I) The name, address, and Installation Identification Number of the generator or sample collector of each waste sample;

(II) The date the shipment was received;

(III) The quantity of waste accepted;

(IV) The quantity of "as received" waste in storage each day;

(V) The date the treatment study was initiated and the amount of "as received" waste introduced to treatment each day;

(VI) The date the treatability study was concluded;

(VII) The date any unused sample or residues generated from the treatability study were returned to the generator or sample collector or, if sent to a designated facility, the name of the facility and the Installation Identification Number.

(viii) The facility keeps, on-site, a copy of the treatability study contract and all shipping papers associated with the transport of treatability study samples to and from the facility for a period ending 3 years from the completion date of each treatability study.

(ix) The facility prepares and submits a report to the Commissioner by March 15 of each year that includes the following information for the previous calendar year:

(I) The name, address, and Installation Identification Number of the facility conducting the treatability studies;

(II) The types (by process) of treatability studies conducted;

(III) The names and addresses of persons for whom studies have been conducted (including their Installation Identification Numbers);

(IV) The total quantity of waste in storage each day;

(V) The quantity and types of waste subjected to treatability studies;

(VI) When each treatability study was conducted;

(VII) The final disposition of residues and unused sample from each treatability study.

(x) The facility determines whether any unused sample or residues generated by the treatability study are hazardous waste under subparagraph (1)(c) of this rule and, if so, are subject to ~~Rule~~ Chapter ~~1200-01-11~~ 0400-12-01, unless the residues and unused samples are returned to the sample originator under exemption under part 5 of this subparagraph.

(xi) The facility notifies the Commissioner by letter when the facility is no longer planning to conduct any treatability studies at the site.

7. Dredged material that is not a hazardous waste. Dredged material that is subject to the requirements of a permit that has been issued under 404 of the Federal Water Pollution Control Act (33 U.S.C. 1344) or section 103 of the Marine Protection, Research, and Sanctuaries Act of 1972 (33 U.S.C. 1413) is not a hazardous waste. For this part 7, the following definitions apply:

(i) The term "dredged material" has the same meaning as defined in 40 CFR 232.2;

(ii) The term "permit" means:

(I) A permit issued by the U.S. Army Corps of Engineers (Corps) or an approved State under section 404 of the Federal Water Pollution Control Act (33 U.S.C. 1344);

(II) A permit issued by the Corps under section 103 of the Marine Protection, Research, and Sanctuaries Act of 1972 (33 U.S.C. 1413); or

(III) In the case of Corps civil works projects, the administrative equivalent of the permits referred to in items 7(ii)(I) and (II) of this subparagraph, as provided for in Corps regulations (for example, see 33 CFR 336.1, 336.2, and 337.6).

(e) Special Requirements For Hazardous Waste Generated By Conditionally Exempt Small Quantity Generators [40 CFR 261.5]

1. A generator is a conditionally exempt small quantity generator in a calendar month if he generates no more than 100 kilograms of hazardous waste in that month.

2. Except for those wastes identified in parts 5, 6, 7, and 10 of this subparagraph, a conditionally exempt small quantity generator's hazardous wastes are not subject to regulation under Rules ~~1200-01-11-.03~~ 0400-12-01-.03 through .10, provided the generator complies with the requirements of parts 6, 7 and 10 of this subparagraph.

3. When making the quantity determinations of this rule and Rule ~~1200-01-11-.03~~ 0400-12-01-.03, the generator must include all hazardous waste that it generates, except hazardous waste that:

(i) Is exempt from regulation under parts (d)3 through 6, subparts (f)1(iii), subpart (g)1(i), or subparagraph (h) of this paragraph; or

(ii) Is managed immediately upon generation only in on-site elementary neutralization units, wastewater treatment units, or totally enclosed treatment facilities as defined in Rule ~~1200-01-11-.01~~ 0400-12-01-.01(2)(a); or

(iii) Is recycled, without prior storage or accumulation, only in an on-site process subject to regulation under subpart (f)3(ii) of this paragraph; or

(iv) Is used oil managed under the requirements of subpart (f)1(iv) of this paragraph and Rule ~~1200-01-11-.11~~ 0400-12-01-.11; or

(v) Is spent lead-acid batteries managed under the requirements of Rule ~~1200-01-11-.09~~ 0400-12-01-.09(7); or

(vi) Is universal waste managed under Rule ~~1200-01-11-.02~~ 0400-12-01-.02(1)(j) and Rule ~~1200-01-11-.12~~ 0400-12-01-.12; or

(vii) Is a hazardous waste that is an unused commercial chemical product (listed in Paragraph (4) of this rule or exhibiting one or more characteristics in paragraph (3) of this rule) that is generated solely as a result of a laboratory clean-out conducted at an eligible academic entity pursuant to paragraph (12) of Rule 0400-12-01-.03. For purposes of this provision, the term eligible academic entity shall have the meaning as defined in paragraph (12) of Rule 0400-12-01-.03.

~~(vii)~~(viii) Is managed immediately upon generation in a collection system (sewer system) where the wastewaters will mix with sanitary wastes at any point before reaching a publicly owned treatment works (POTW).

4. In determining the quantity of hazardous waste generated, a generator need not include:

(i) Hazardous waste when it is removed from on-site storage; or

(ii) Hazardous waste produced by on-site treatment (including reclamation) of his hazardous waste, so long as the hazardous waste that is treated was counted once; or

(iii) Spent materials that are generated, reclaimed, and subsequently reused on-site, so long as such spent materials have been counted once.

5. If a generator generates acute hazardous waste in a calendar month in quantities greater than set forth below, all quantities of that acute hazardous waste are subject to full regulation under ~~Rule~~ Chapter ~~1200-01-11~~ 0400-12-01:

(i) A total of one kilogram of acute hazardous wastes listed in subparagraph (4)(b) ~~subparagraph (4)(c),~~ or part (4)(d)5 of this rule.

(ii) A total of 100 kilograms of any residue or contaminated soil, waste, or other debris resulting from the cleanup of a spill, into or on any land or water, of any acute hazardous wastes listed in subparagraph (4)(b) ~~subparagraph (4)(c),~~ or part (4)(d)5 of this rule.

(Comment: "Full regulation" means those regulations applicable to generators of ~~greater than~~ 1000 kg or greater of ~~non-acutely~~ hazardous waste in a calendar month.)

6. In order for acute hazardous wastes generated by a generator of acute hazardous wastes in quantities equal to or less than those set forth in subparts 5(i) or (ii) of this subparagraph to be excluded ~~under this subparagraph~~ from full regulation under this subparagraph, the generator must comply with the following requirements:

(i) The generator must perform the hazardous waste determination of Rule ~~1200-01-11-.03~~ 0400-12-01-.03(1)(b) and keep records thereof as required by Rule ~~1200-01-11-.03~~ 0400-12-01-.03(5)(a)3;

(ii) The generator may accumulate acute hazardous waste on-site. If he accumulates at any time acute hazardous wastes in quantities greater than those set forth in subparts 5(i) or 5(ii) of this subparagraph, all of those accumulated wastes are subject to regulation under ~~Rules~~ Chapter 0400-12-01. The time period of Rule ~~1200-01-11-.03~~ 0400-12-01-.03(4)(e)2, for accumulation of wastes on-site, begins when the accumulated wastes exceed the applicable exclusion limit.

(iii) A conditionally exempt small quantity generator may either treat or dispose of his acute hazardous waste in an on-site facility or ensure delivery to an off-site treatment, storage or disposal facility, either of which, if located in the U.S., is:

(I) Permitted under Rule ~~1200-01-11-.07~~ 0400-12-01-.07;

(II) In interim status under Rule ~~1200-01-11-.05~~ 0400-12-01-.05 and ~~1200-01-11-.07~~ 0400-12-01-.07;

(III) Authorized to manage hazardous waste by a State with a hazardous waste management program approved under 40 CFR Part 271;

(IV) Permitted, licensed, or registered by a State to manage municipal solid waste and, if managed in a municipal solid waste landfill, is subject to 40 CFR Part 258;

(V) Permitted, licensed, or registered by a State to manage non-municipal non-hazardous waste and, if managed in a non-municipal non-hazardous waste disposal unit after January 1, 1998, is subject to the requirements in 40 CFR Parts 257.5 through 257.30; or

(VI) A facility which:

I. Beneficially uses or reuses, or legitimately recycles or reclaims its waste; or

II. Treats its waste prior to beneficial use or reuse, or legitimate recycling or reclamation; or

(VII) For universal waste managed under Rule ~~1200-01-11-.12~~ 0400-12-01-.12, a universal waste handler or destination facility subject to the requirements of Rule ~~1200-01-11-.12~~ 0400-12-01-.12;

7. In order for hazardous waste generated by a conditionally exempt small quantity generator in quantities of ~~less than~~ 100 kilograms or less of hazardous waste during a calendar month to be excluded from full regulation under this subparagraph, the generator must comply with the following requirements:

(i) The conditionally exempt small quantity generator must perform the hazardous waste determination of Rule ~~1200-01-11-.03~~ 0400-12-01-.03(1)(b) and keep records thereof as required by Rule ~~1200-01-11-.03~~ 0400-12-01-.03(5)(a)3.

(ii) The conditionally exempt small quantity generator may accumulate hazardous waste on-site. If he accumulates at any time more than a total of 1000 kilograms of his hazardous wastes, all of those accumulated wastes are subject to regulation under the special provisions of Rule ~~1200-01-11-.03~~ 0400-12-01-.03 applicable to generators of ~~between~~ greater than 100 kg and less than 1000 kg of hazardous waste in a calendar month as well as the requirements of Rule ~~1200-01-11-.04~~ 0400-12-01-.04 through ~~1200-01-11-.10~~ 0400-12-01-.10. The time period of Rule ~~1200-01-11-.03~~ 0400-12-01-.03(4)(e)6 for accumulation of wastes on-site begins for a conditionally exempt small quantity generator when the accumulated wastes exceed 1000 kilograms;

(iii) A conditionally exempt small quantity generator may either treat or dispose of his hazardous waste in an on-site facility or ensure delivery to an off-site treatment, storage or disposal facility, either of which, if located in the U.S., is:

(I) Permitted under Rule ~~1200-01-11-.07~~ 0400-12-01-.07;

(II) In interim status under Rules ~~1200-01-11-.05~~ 0400-12-01-.05 and ~~1200-01-11-.07~~ 0400-12-01-.07;

(III) Authorized to manage hazardous waste by a State with a hazardous waste management program approved under 40 CFR Part 271;

(IV) Permitted, licensed, or registered by a State to manage municipal solid waste and, if managed in a municipal solid waste landfill, is subject to 40 CFR Part 258;

(V) Permitted, licensed, or registered by a State to manage non-municipal non-hazardous waste and, if managed in a non-municipal non-hazardous waste disposal unit after January 1, 1998, is subject to the requirements in 40 CFR Parts 257.5 through 257.30; or

(VI) A facility which:

I. Beneficially uses or reuses or legitimately recycles or reclaims its waste; or

II. Treats its waste prior to beneficial use or reuse, or legitimate recycling or reclamation; or

(VII) For universal waste managed under Rule ~~1200-01-11-.12~~ 0400-12-01-.12, a universal waste handler or destination facility subject to the requirements of Rule ~~1200-01-11-.12~~ 0400-12-01-.12.

(iv) Management of Containers with Liquids

(I) A container holding hazardous waste volatile liquids must always be closed during storage, except when it is necessary to add or remove waste.

(II) A container holding hazardous waste liquids must not be opened, handled, or stored in a manner which may rupture the container or cause it to leak.

(III) The facility may take reasonable measures that deviate from this standard if required for safety due to the intrinsic nature of the container's contents.

8. Hazardous waste subject to the reduced requirements of this subparagraph may be mixed with non-hazardous waste and remain subject to these reduced requirements even though the resultant mixture exceeds the quantity limitations identified in this subparagraph, unless the mixture meets any of the characteristics of hazardous waste identified in paragraph (3) of this rule.

9. If any person mixes a solid waste with a hazardous waste that exceeds a quantity exclusion level of this subparagraph, the mixture is subject to full regulation.

10. If a conditionally exempt small quantity generator's wastes are mixed with used oil, the mixture is subject to Rule ~~1200-01-11-.11~~ 0400-12-01-.11. Any material produced from such a mixture by processing, blending, or other treatment is also so regulated.

(NOTE: Any used oil that is not recycled is a solid waste subject to a hazardous waste determination per Rule ~~1200-01-11-.03~~ 0400-12-01-.03(1)(b).)

(f) Requirements for recyclable material [40 CFR 261.6]

1. (i) Hazardous wastes that are recycled are subject to the requirements for generators, transporters, and storage facilities of parts 2 and 3 of this subparagraph, except for the materials listed in subparts (ii) and (iii) of this part. Hazardous wastes that are recycled will be known as "recyclable materials."

(ii) The following recyclable materials are not subject to the requirements of this subparagraph but are regulated under paragraphs (3), (6), (7), ~~and~~ (8), (13), and (14) of Rule ~~1200-01-11-.09~~ 0400-12-01-.09 and all applicable provisions in Rules ~~1200-01-11-.07~~ 0400-12-01-.07 and .10:

(I) Recyclable materials used in a manner constituting disposal (Rule ~~1200-01-11-.09~~ 0400-12-01-.09(3);

(II) Hazardous wastes burned (as defined in Rule 0400-12-01-.09(8)(a)1) ~~for energy recovery~~ in boilers and industrial furnaces that are not regulated

under paragraph (15) of Rule ~~1200-01-11-.05~~ 0400-12-01-.05 or Rule ~~1200-01-11-.06~~ 0400-12-01-.06; ~~(Rule 0400-12-01-.09(8)).~~

(III) Recyclable materials from which precious metals are reclaimed (Rule ~~1200-01-11-.09~~ 0400-12-01-.09(6));

(IV) Spent lead-acid batteries that are being reclaimed (Rule ~~1200-01-11-.09~~ 0400-12-01-.09(7).

(iii) The following recyclable materials are not subject to regulation under ~~Rule~~ Chapter ~~1200-01-11~~ 0400-12-01:

(I) Industrial ethyl alcohol that is reclaimed except that, unless provided otherwise in an international agreement as specified in Rule ~~1200-01-11-.03~~ 0400-12-01-.03(6)(i):

I. A person initiating a shipment for reclamation in a foreign country, and any intermediary arranging for the shipment, must comply with the requirements applicable to a primary exporter in Rule ~~1200-01-11-.03~~ 0400-12-01-.03(6)(d), (g)1(i) through (iv) and (vi), (g)2, and (h), export such materials only upon consent of the receiving country and in conformance with the EPA Acknowledgment of Consent as defined in Rule ~~1200-01-11-.03~~ 0400-12-01-.03(6), and provide a copy of the EPA Acknowledgment of Consent to the shipment to the transporter transporting the shipment for export;

II. Transporters transporting a shipment for export may not accept a shipment if he knows the shipment does not conform to the EPA Acknowledgment of Consent, must ensure that a copy of the EPA Acknowledgment of Consent accompanies the shipment and must ensure that it is delivered to the facility designated by the person initiating the shipment.

(II) Scrap metal that is not excluded under subpart (d)1(xv) of this paragraph;

(III) Fuels produced from the refining of oil-bearing hazardous waste along with normal process streams at a petroleum refining facility if such wastes result from normal petroleum refining, production, and transportation practices (this exemption does not apply to fuels produced from oil recovered from oil-bearing hazardous waste, where such recovered oil is already excluded under Rule ~~1200-01-11-.02~~ 0400-12-01-.02(1)(d)1(xii));

(IV) I. Hazardous waste fuel produced from oil-bearing hazardous wastes from petroleum refining, production, or transportation practices, or produced from oil reclaimed from such hazardous wastes, where such hazardous wastes are reintroduced into a process that does not use distillation or does not produce products from crude oil so long as the resulting fuel meets the used oil specification under Rule ~~1200-01-11-.11~~ 0400-12-01-.11(2)(b) and so long as no other hazardous wastes are used to produce the hazardous waste fuel;

II. Hazardous waste fuel produced from oil-bearing hazardous waste from petroleum refining production, and transportation practices, where such hazardous wastes are reintroduced into a refining process after a point at which contaminants are

removed, so long as the fuel meets the used oil fuel specification under Rule ~~1200-01-11-.11~~ 0400-12-01-.11(2)(b); and

III. Oil reclaimed from oil-bearing hazardous wastes from petroleum refining, production, and transportation practices, which reclaimed oil is burned as a fuel without reintroduction to a refining process, so long as the reclaimed oil meets the used oil fuel specification under Rule ~~1200-01-11-.11~~ 0400-12-01-.11(2)(b).

(iv) Used oil that is recycled and is also a hazardous waste solely because it exhibits a hazardous characteristic is not subject to the requirements of Rule ~~1200-01-11-.01~~ 0400-12-01-.01 through .06, .09, and .10, but is regulated under Rule ~~1200-01-11-.11~~ 0400-12-01-.11. Used oil that is recycled includes any used oil which is reused, following its original use, for any purpose (including the purpose for which the oil was originally used). Such term includes, but is not limited to, oil which is re-refined, reclaimed, burned for energy recovery, or reprocessed.

(v) (Reserved) [40 CFR 261.6(a)(5)]

2. Generators and transporters of recyclable materials are subject to the applicable requirements of Rule ~~1200-01-11-.03~~ 0400-12-01-.03 and .04, except as provided in part 1 of this subparagraph.

3. (i) Owners and operators of facilities that store recyclable materials before they are recycled are regulated under all applicable provisions of paragraphs (1) through (12), (27), (28) and (29) of Rule ~~1200-01-11-.05~~ 0400-12-01-.05 and paragraphs (1) through (12), (30), (31) and (32) of Rule ~~1200-01-11-.06~~ 0400-12-01-.06, and under Rules ~~1200-01-11-.07~~ 0400-12-01-.07, .09, and .10, and the notification requirements under Rule ~~1200-01-11-.07~~ 0400-12-01-.07(2)(b) and (d), except as provided in part 1 of this subparagraph. (The recycling process itself is exempt from regulation except as provided in Rule ~~1200-01-11-.02~~ 0400-12-01-.02(1)(f)4.)

(ii) Owners or operators of facilities that recycle recyclable materials without storing them before they are recycled are subject to the following requirements, except as provided in part 1 of this subparagraph:

(I) Such owners or operators must notify the Division Director of their activities using forms provided by the Department and completed per accompanying instructions;

(II) Such owners or operators must comply with Rule ~~1200-01-11-.05~~ 0400-12-01-.05(5)(b) and (c) (dealing with the use of the manifest and manifest discrepancies);

(III) Rule ~~1200-01-11-.02~~ 0400-12-01-.02(1)(f)4.

4. Owners or operators of facilities subject to the permitting requirements with hazardous waste management units that recycle hazardous wastes are subject to the requirements of paragraphs (27) and (28) of Rule ~~1200-01-11-.05~~ 0400-12-01-.05 and paragraphs (30) and (31) of Rule ~~1200-01-11-.06~~ 0400-12-01-.06.

5. Generators of recyclable materials must notify the Department describing the recyclable materials they generate, how such materials are generated, and how they are managed. Such notifications must be filed with the Department within 90 days of the effective date of this part (for existing generators) or within 90 days of the date a generator first becomes subject to this subparagraph (for new generators). Such notification must be

submitted on forms provided by the Department. The form must be completed according to the accompanying instructions.

(g) Residues of hazardous waste in empty containers [40 CFR 261.7]

1. (i) Any hazardous waste remaining in either (1) an empty container or (2) an inner liner removed from an empty container, as defined in part 2 of this subparagraph, is not subject to regulation under these rules.

(ii) Any hazardous waste in either (1) a container that is not empty or (2) an inner liner removed from a container that is not empty, as defined in part 2 of this subparagraph, is subject to regulation under these rules.

2. (i) A container or an inner liner removed from a container that has held any hazardous waste, except a waste that is a compressed gas or that is identified as an acute hazardous waste listed in subparagraph (4)(b) ~~subparagraph (4)(e),~~ or part (4)(d)5 of this rule is empty if:

(I) All wastes have been removed that can be removed using the practices commonly employed to remove materials from that type of container, e.g., pouring, pumping, and aspirating, and

(II) No more than 2.5 centimeters (one inch) of residue remain on the bottom of the container or inner liner, or

(III) I. No more than 3 percent by weight of the total capacity of the container remains in the container or inner liner if the container is less than or equal to 119 gallons in size, or

II. No more than 0.3 percent by weight of the total capacity of the container remains in the container or inner liner if the container is greater than 119 gallons in size.

(ii) A container that has held a hazardous waste that is a compressed gas is empty when the pressure in the container approaches atmospheric.

(iii) A container or an inner liner removed from a container that has held an acute hazardous waste listed in subparagraph (4)(b) ~~subparagraph (4)(e),~~ or part (4)(d)5 of this subparagraph is empty if:

(I) The container or inner liner has been triple rinsed using a solvent capable of removing the commercial chemical product or manufacturing chemical intermediate;

(II) The container or inner liner has been cleaned by another method that has been shown in the scientific literature, or by tests conducted by the generator, to achieve equivalent removal; or

(III) In the case of a container, the inner liner that prevented contact of the commercial chemical product or manufacturing chemical intermediate with the container, has been removed.

(h) PCB wastes regulated under Toxic Substance Control Act [40 CFR 261.8]

The disposal of PCB-containing dielectric fluid and electric equipment containing such fluid authorized for use and regulated under part 761 and that are hazardous only because they fail the test for the Toxicity Characteristic (Hazardous Waste Codes D018 through D043 only) are exempt from regulation under Rule ~~1200-01-11-.02~~ 0400-12-01-.02 through .08 and .10.

(i) Management of Excluded Wastes

Nothing in these rules shall exclude persons whose waste is nonhazardous or otherwise excluded from these rules from the requirements of the "Tennessee Solid Waste Disposal Act" (T.C.A. §68-211-101 et seq.) and applicable regulations or from other applicable State, local or Federal laws.

(j) Requirements for Universal Waste [40 CFR 261.9]

The wastes listed in Rule ~~1200-01-11-.12~~ 0400-12-01-.12(1)(a) are exempt from regulation under Rules ~~1200-01-11-.03~~ 0400-12-01-.03 through .07, .09 and .10 except as specified in Rule ~~1200-01-11-.12~~ 0400-12-01-.12 and, therefore, are not fully regulated as hazardous waste.

(2) Criteria for Identifying the Characteristics of Hazardous Waste and for Listing Hazardous Waste [40 CFR 261 Subpart B]

(a) Criteria for Identifying the Characteristics of Hazardous Waste [40 CFR 261.10]

1. The Board shall identify and define a characteristic of hazardous waste in paragraph (3) only upon determining that:

(i) A solid waste that exhibits the characteristic may:

(I) Cause, or significantly contribute to, an increase in mortality or an increase in serious irreversible, or incapacitating reversible, illness; or

(II) Pose a substantial present or potential hazard to human health or the environment when it is improperly treated, stored, transported, disposed of or otherwise managed; and

(ii) The characteristic can be:

(I) Measured by an available standardized test method which is reasonably within the capability of generators of solid waste or private sector laboratories that are available to serve generators of solid waste; or

(II) Reasonably detected by generators of solid waste through their knowledge of their waste.

(b) Criteria for Listing Hazardous Waste [40 CFR 261.11]

1. The Board shall list a solid waste as a hazardous waste only upon determining that the solid waste meets one of the following criteria:

(i) It exhibits any of the characteristics of hazardous waste identified in paragraph (3).

(ii) It has been found to be fatal to humans in low doses or, in the absence of data on human toxicity, it has been shown in studies to have an oral LD 50 toxicity (rat) of less than 50 milligrams per kilogram, an inhalation LC 50 toxicity (rat) of less than 2 milligrams per liter, or a dermal LD 50 toxicity (rabbit) of less than 200 milligrams per kilogram or is otherwise capable of causing or significantly contributing to an increase in serious irreversible, or incapacitating reversible, illness. (Waste listed in accordance with these criteria will be designated Acute Hazardous Waste.)

(iii) It contains any of the toxic constituents listed in paragraph (5) Appendix VIII and, after considering the following factors, the Commissioner concludes that the waste is capable of posing a substantial present or potential hazard to human

health or the environment when improperly treated, stored, transported or disposed of, or otherwise managed:

(I) The nature of the toxicity presented by the constituent;

(II) The concentration of the constituent in the waste;

(III) The potential of the constituent or any toxic degradation product of the constituent to migrate from the waste into the environment under the types of improper management considered in item (VII) below;

(IV) The persistence of the constituent or any toxic degradation product of the constituent;

(V) The potential for the constituent or any toxic degradation product of the constituent to degrade into non-harmful constituents and the rate of degradation;

(VI) The degree to which the constituent or any degradation product of the constituent bioaccumulates in ecosystems;

(VII) The plausible types of improper management to which the waste could be subjected;

(VIII) The quantities of the waste generated at individual generation sites or on a regional or national basis;

(IX) The nature and severity of the human health and environmental damage that has occurred as a result of the improper management of wastes containing the constituent;

(X) Action taken by other governmental agencies or regulatory programs based on the health or environmental hazard posed by the waste or waste constituent; and

(XI) Such other factors as may be appropriate.

(Note: Substances will be listed on Appendix VIII only if they have been shown in scientific studies to have toxic, carcinogenic, mutagenic or teratogenic effects on humans or other life forms.)

(Note: Wastes listed in accordance with these criteria will be designated Toxic wastes.)

2. The Board may list classes or types of solid waste as hazardous waste if it has reason to believe that individual wastes, within the class or type of waste, typically or frequently are hazardous under the definition of hazardous waste found in Section 68-212-104 of the Act.

3. The Board will use the criteria for listing specified in this subparagraph to establish the exclusion limits referred to in part (1)(e)3 of this rule.

(3) Characteristics of Hazardous Waste [40 CFR 261 Subpart C]

(a) General [40 CFR 261.20]

1. A solid waste, as defined in subparagraph (1)(b) of this rule, which is not excluded from regulation as a hazardous waste under part (1)(d)2 of this rule, is a hazardous waste if it exhibits any of the characteristics identified in this paragraph.

(Comment: Rule ~~1200-01-11-.03~~ 0400-12-01-.03(1)(b) sets forth the generator's responsibility to determine whether his waste exhibits one or more of the characteristics identified in this paragraph.)

2. A hazardous waste which is identified by a characteristic in this paragraph is assigned every Hazardous Waste Code that is applicable as set forth in this paragraph. This code must be used in complying with the notification requirements of Rule ~~1200-01-11-.03~~ 0400-12-01-.03(2) and all applicable recordkeeping and reporting requirements under Rules ~~1200-01-11-.03~~ 0400-12-01-.03 through .07 and Rule ~~1200-01-11-.10~~ 0400-12-01-.10.

3. For purposes of this paragraph, the Commissioner will consider a sample obtained using any of the applicable sampling methods specified in paragraph (5) Appendix I to be a representative sample within the meaning of Rule ~~1200-01-11-.01~~ 0400-12-01-.01.

(Comment: Since the appendix I sampling methods are not being formally adopted by the Board, a person who desires to employ an alternative sampling method is not required to demonstrate the equivalency of his method under the procedures set forth in Rule ~~1200-01-11-.01~~ 0400-12-01-.01(3).)

(b) Characteristic of Ignitability [40 CFR 261.21]

1. A solid waste exhibits the characteristic of ignitability if a representative sample of the waste has any of the following properties:

(i) It is a liquid, other than an aqueous solution containing less than 24 percent alcohol by volume and has flash point less than 60° C (140° F), as determined by a Pensky-Martens Closed Cup Tester, using the test method specified in ASTM Standard D 93-79 or D 93-80 (see 40 CFR 260.11; Rule ~~1200-01-11-.01~~ 0400-12-01-.01(2)(b)1), or a Setaflash Closed Cup Tester, using the test method specified in ASTM Standard D 3278-78 (see 40 CFR 260.11; Rule ~~1200-01-11-.01~~ 0400-12-01-.01(2)(b)1).

(ii) It is not a liquid and is capable, under standard temperature and pressure, of causing fire through friction, absorption of moisture or spontaneous chemical changes and, when ignited, burns so vigorously and persistently that it creates a hazard.

(iii) It is an ignitable compressed gas.

(I) The term "compressed gas" shall designate any material or mixture having in the container an absolute pressure exceeding 40 p.s.i. at 70 [deg] F or, regardless of the pressure at 70 [deg] F, having an absolute pressure exceeding 104 p.s.i. at 130 [deg] F; or any liquid flammable material having a vapor pressure exceeding 40 p.s.i. absolute at 100 [deg] F as determined by ASTM Test D-323.

(II) A compressed gas shall be characterized as ignitable if any one of the following occurs:

I. Either a mixture of 13 percent or less (by volume) with air forms a flammable mixture or the flammable range with air is wider than 12 percent regardless of the lower limit. These limts shall be determined at atmospheric temperature and pressure. The method of sampling and test procedure shall be acceptable to the Bureau of Explosives and approved by the director, Pipeline and Hazardous Materials Technology, U. S. Department of Transportation (see Note 2).

II. Using the Bureau of Explosives' Flame Projection Apparatus (see Note 1), the flame projects more than 18 inches beyond the ignition source with valve opened fully or the flame flashes back and burns at the valve with any degree of valve opening.

III. Using the Bureau of Explosives' Open Drum Apparatus (see Note 1), there is any significant propagation of flame away from the ignition source.

IV. Using the Bureau of Explosives' Closed Drum Apparatus (see Note 1), there is any explosion of the vapor-air mixture in the drum.

(iv) It is an oxidizer.

An oxidizer for the purpose of this rule is a substance such as a chlorate, permanganate, inorganic peroxide, or a nitrate, that yields oxygen readily to stimulate the combustion of organic matter (see Note 4).

(I) An organic compound containing the bivalent – O – O – structure and which may be considered a derivative of hydrogen peroxide where one or more of the hydrogen atoms have been replaced by organic radicals must be classed as an organic peroxide unless:

I. The material meets the definition of a Class A explosive or a Class B explosive, as defined in subpart (3)(d)1(viii) of this rule, in which case it must be classed as an explosive,

II. The material is forbidden to be offered for transportation according to 49 CFR 172.101 and 49 CFR 173.21,

III. It is determined that the predominant hazard of the material containing an organic peroxide is other than that of an organic peroxide, or

IV. According to data on file with the Pipeline and Hazardous Materials Safety Administration in the U. S. Department of Transportation (see Note 3), it has been determined that the material does not present a hazard in transportation.

2. A solid waste that exhibits the characteristic of ignitability has the Hazardous Waste Code of D001.

Note 1: A description of the Bureau of Explosives' Flame Projection Apparatus, Open Drum Apparatus, Closed Drum Apparatus, and method of tests may be procured from the Bureau of Explosives.

Note 2: As part of a U. S. Department of Transportation (DOT) reorganization, the Office of Hazardous Materials Technology (OHMT), which was the office listed in the 1980 publication of 49 CFR 173.300 for the purposes of approving sampling and test procedures for a flammable gas, ceased operations on February 20, 2005. OHMT programs have moved to the Pipeline and Hazardous Materials Safety Administration (PHMSA) in the DOT.

Note 3: As part of a U. S. Department of Transportation (DOT) reorganization, the Research and Special Programs Administration (RSPA), which was the office listed in the 1980 publication of 49 CFR 173.151a for the purposes of determining that a material does not present a hazard in transport, ceased

operations on February 20, 2005. RSPA programs have moved to the Pipeline and Hazardous Materials Safety Administration (PHMSA) in the DOT.

Note 4: The DOT regulatory definition of an oxidizer was contained in Sec. 173.151 of 49 CFR, and the definition of an organic peroxide was contained in paragraph 173.151a. An organic peroxide is a type of oxidizer.

(c) Characteristic of Corrosivity [40 CFR 261.22]

1. A solid waste exhibits the characteristic of corrosivity if a representative sample of the waste has either of the following properties:

(i) It is aqueous and has a pH less than or equal to 2 or greater than or equal to 12.5, as determined by a pH meter using Method 9040C in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA Publication SW-846. (See 40 CFR 260.11; Rule ~~1200-01-11-.01~~ 0400-12-01-.01(2)(b)1.)

(ii) It is a liquid and corrodes steel (SAE 1020) at a rate greater than 6.35 mm (0.250 inch) per year at a test temperature of 55°C (130°F) as determined by Method 1110A in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA Publication SW-846. (See 40 CFR 260.11; Rule ~~1200-01-11-.01~~ 0400-12-01-.01(2)(b)1.)

2. A solid waste that exhibits the characteristic of corrosivity has the Hazardous Waste Code of D002.

(d) Characteristic of Reactivity [40 CFR 261.23]

1. A solid waste exhibits the characteristic of reactivity if a representative sample of the waste has any of the following properties:

(i) It is normally unstable and readily undergoes violent change without detonating.

(ii) It reacts violently with water.

(iii) It forms potentially explosive mixtures with water.

(iv) When mixed with water, it generates toxic gases, vapors or fumes in a quantity sufficient to present a danger to human health or the environment.

(v) It is a cyanide or sulfide bearing waste which, when exposed to pH conditions between 2 and 12.5, can generate toxic gases, vapors or fumes in a quantity sufficient to present a danger to human health or the environment.

(vi) It is capable of detonation or explosive reaction if it is subjected to a strong initiating source or if heated under confinement.

(vii) It is readily capable of detonation or explosive decomposition or reaction at standard temperature and pressure.

(viii) It is a forbidden explosive as defined in 49 CFR ~~173.51~~ 173.54, or is a Division 1.1, 1.2 or 1.3 explosive as defined in ~~a Class A explosive as defined in~~ 49 CFR 173.50 and 173.53 ~~or a Class B explosive as defined in 49 CFR 173.88 (as those Federal regulations exist on the effective date of these Rules)~~.

2. A solid waste that exhibits the characteristic of reactivity has the Hazardous Waste Code of D003.

(e) Toxicity Characteristic [40 CFR 261.24]

1. A solid waste (except manufactured gas plant waste) exhibits the characteristic of toxicity if, using the Toxicity Characteristic Leaching Procedure, test Method 1311 in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA Publication SW-846, (see 40 CFR 260.11; Rule ~~1200-01-11-.01~~ 0400-12-01-.01(2)(b)1) the extract from a representative sample of the waste contains any of the contaminants listed in Table 1 at the concentration equal to or greater than the respective value given in that table. Where the waste contains less than 0.5 percent filterable solids, the waste itself, after filtering using the methodology outlined in Method 1311, is considered to be the extract for the purpose of this subparagraph.

2. A solid waste that exhibits the characteristic of toxicity has the Hazardous Waste Code specified in Table 1 which corresponds to the toxic contaminant causing it to be hazardous.

Table 1. – Maximum Concentration of Contaminants for the Toxicity Characteristic

HW Code No. [1]	Contaminant	CAS No. [2]	Regulatory Level (mg/L)
D004	Arsenic	7440-38-2	5.0
D005	Barium	7440-39-3	100.0
D018	Benzene	71-43-2	0.5
D006	Cadmium	7440-43-9	1.0
D019	Carbon tetrachloride	56-23-5	0.5
D020	Chlordane	57-74-9	0.03
D021	Chlorobenzene	108-90-7	100.0
D022	Chloroform	67-66-3	6.0
D007	Chromium	7440-47-3	5.0
D023	o-Cresol	95-48-7	[4] 200.0
D024	m-Cresol	108-39-4	[4] 200.0
D025	p-Cresol	106-44-5	[4] 200.0
D026	Cresol		[4] 200.0
D016	2,4-D	94-75-7	10.0
D027	1,4-Dichlorobenzene	106-46-7	7.5
D028	1,2-Dichloroethane	107-06-2	0.5
D029	1,1-Dichloroethylene	75-35-4	0.7
D030	2,4-Dinitrotoluene	121-14-2	[3] 0.13
D012	Endrin	72-20-8	0.02
D031	Heptachlor (and its epoxide)	76-44-8	0.008
D032	Hexachlorobenzene	118-74-1	[3] 0.13
D033	Hexachlorobutadiene	87-68-3	0.5
D034	Hexachloroethane	67-72-1	3.0
D008	Lead	7439-92-1	5.0

D013	Lindane	58-89-9	0.4
D009	Mercury	7439-97-6	0.2
D014	Methoxychlor	72-43-5	10.0
D035	Methyl ethyl ketone	78-93-3	200.0
D036	Nitrobenzene	98-95-3	2.0
D037	Pentachlorophenol	87-86-5	100.0
D038	Pyridine	110-86-1	[3] 5.0
D010	Selenium	7782-49-2	1.0
D011	Silver	7440-22-4	5.0
D039	Tetrachloroethylene	127-18-4	0.7
D015	Toxaphene	8001-35-2	0.5
D040	Trichloroethylene	79-01-6	0.5
D041	2,4,5-Trichlorophenol	95-95-4	400.0
D042	2,4,6-Trichlorophenol	88-06-2	2.0
D017	2,4,5-TP (Silvex)	93-72-1	1.0
D043	Vinyl chloride	75-01-4	0.2

FOOTNOTE: [1]Hazardous waste number.
FOOTNOTE: [2]Chemical abstracts service number.
FOOTNOTE: [3]Quantitation limit is greater than the calculated regulatory level. The quantitation limit therefore becomes the regulatory level.
FOOTNOTE: [4]If o-, m-, and p-Cresol concentrations cannot be differentiated, the total cresol (D026) concentration is used. The regulatory level of total cresol is 200 mg/l.

(4) Lists of Hazardous Wastes [40 CFR 261 Subpart D]

(a) General [40 CFR 261.30]

1. A solid waste is a hazardous waste if it is listed in this paragraph, unless it has been excluded from this list under Rule ~~1200-01-11-.01~~ 0400-12-01-.01(3).

2. The Board will indicate its basis for listing the classes or types of wastes listed in this paragraph by employing one or more of the following Hazard Codes:

Ignitable Waste	(I)
Corrosive Waste	(C)
Reactive Waste	(R)
Toxicity Characteristic Waste	(E)
Acute Hazardous Waste	(H)
Toxic Waste	(T)

Paragraph (5) Appendix VII identifies the constituent which caused the Board to list the waste as a Toxicity Characteristic Waste (E) or Toxic Waste (T) in subparagraphs (b) and (c) of this paragraph.

3. Each hazardous waste listed in this paragraph is assigned a Hazardous Waste Code which precedes the name of the waste. This Code must be used in complying with the notification requirements of Rule ~~1200-01-11-.03~~ 0400-12-01-.03(2) and certain recordkeeping and reporting requirements under Rules ~~1200-01-11-.03~~ 0400-12-01-.03 through .07 and Rules ~~1200-01-11-.10~~ 0400-12-01-.09 and 0400-12-01-.10.

4. The following hazardous wastes listed in subparagraph (b) ~~or (c)~~ of this paragraph are subject to the exclusion limits for acutely hazardous wastes established in subparagraph (1)(e) of this rule: Hazardous Wastes Codes F020, F021, F022, F023, F026, and F027.

(b) Hazardous Wastes from Non-specific Sources [40 CFR 261.31]

1. The following solid wastes are listed hazardous wastes from non-specific sources unless they are excluded under subparagraphs (a) and (c) of Rule ~~1200-01-11-.01~~ 0400-12-01-.01(3) and listed in paragraph (5) Appendix IX.

Industry and Hazardous Waste Code	Hazardous Waste	Hazard Code
Generic:		
F001	The following spent halogenated solvents used in degreasing: Tetrachloroethylene, trichloroethylene, methylene chloride, 1,1,1-trichloroethane, carbon tetrachloride, and chlorinated fluorocarbons; all spent solvent mixtures/blends used in degreasing containing, before use, a total of ten percent or more (by volume) of one or more of the above halogenated solvents or those solvents listed in F002, F004, and F005; and still bottoms from the recovery of these spent solvents and spent solvent mixtures.	(T)
F002	The following spent halogenated solvents: Tetrachloroethylene, methylene chloride, trichloroethylene, 1,1,1-trichloroethane, chlorobenzene, 1,1,2-trichloro-1,2,2-trifluoroethane, ortho-dichlorobenzene, trichlorofluoromethane, and 1,1,2-trichloroethane; all spent solvent mixtures/blends containing, before use, a total of ten percent or more (by volume) of one or more of the above halogenated solvents or those listed in F001, F004, or F005; and still bottoms from the recovery of these spent solvents and spent solvent mixtures.	(T)
F003	The following spent non-halogenated solvents: Xylene, acetone, ethyl acetate, ethyl benzene, ethyl ether, methyl isobutyl ketone, n-butyl alcohol, cyclohexanone, and methanol; all spent solvent mixtures/blends containing, before use, only the above spent non-halogenated solvents; and all spent solvent mixtures/blends containing, before use, one or more of the above non-halogenated solvents, and, a total of ten percent or more (by volume) of one or more of those solvents listed in F001, F002, F004, and F005; and still bottoms from the recovery of these spent solvents and spent solvent mixtures.	(I)
F004	The following spent non-halogenated solvents: Cresols and cresylic acid, and nitrobenzene; all spent solvent mixtures/blends containing, before use, a total of ten percent or more (by volume) of one or more of the above non-halogenated solvents or those solvents listed in F001, F002, and F005; and still bottoms from the recovery of these spent solvents and spent solvent mixtures.	(T)
F005	The following spent non-halogenated solvents: Toluene, methyl ethyl ketone, carbon disulfide, isobutanol, pyridine, benzene, 2-ethoxyethanol, and 2-nitropropane; all spent solvent mixtures/blends containing, before use, a total of ten percent or more (by volume) of one or more of the above non-halogenated solvents or those solvents listed in F001, F002, or F004; and still bottoms from the recovery of these spent solvents and spent solvent mixtures.	(I,T)
F006	Wastewater treatment sludges from electroplating operations except from the following processes: (1) Sulfuric acid anodizing of aluminum; (2) tin plating on carbon steel; (3) zinc plating (segregated basis) on carbon steel; (4) aluminum or zinc-aluminum plating on carbon steel; (5) cleaning/stripping associated with tin, zinc and aluminum plating on carbon steel;	(T)

	and (6) chemical etching and milling of aluminum.	
F007	Spent cyanide plating bath solutions from electroplating operations.	(R, T)
F008	Plating bath residues from the bottom of plating baths from electroplating operations where cyanides are used in the process.	(R, T)
F009	Spent stripping and cleaning bath solutions from electroplating operations where cyanides are used in the process.	(R, T)
F010	Quenching bath residues from oil baths from metal heat treating operations where cyanides are used in the process.	(R, T)
F011	Spent cyanide solutions from salt bath pot cleaning from metal heat treating operations.	(R, T)
F012	Quenching waste water treatment sludges from metal heat treating operations where cyanides are used in the process.	(T)
F019	Wastewater treatment sludges from the chemical conversion coating of aluminum except from zirconium phosphating in aluminum can washing when such phosphating is an exclusive conversion coating process. Wastewater treatment sludges from the manufacturing of motor vehicles using a zinc phosphating process will not be subject to this listing at the point of generation if the wastes are not placed outside on the land prior to shipment to a landfill for disposal and are either: disposed in a Subtitle D municipal or industrial landfill unit that is equipped with a single clay liner and is permitted, licensed or otherwise authorized by the state; or disposed in a landfill unit subject to, or otherwise meeting, the landfill requirements in 40 CFR 258.40 or the state equivalent, Rule 1200-01-11-.06(14)(b) or Rule 1200-01-11-.05(14)(b). For the purposes of this listing, motor vehicle manufacturing is defined in item 2(iv)(I) of this subparagraph and item 2(iv)(II) of this subparagraph describes the ~~recordingkeeping~~ recordkeeping requirements for motor vehicle manufacturing facilities.	(T)
F020	Wastes (except wastewater and spent carbon from hydrogen chloride purification) from the production or manufacturing use (as a reactant, chemical intermediate, or component in a formulating process) of tri- or tetrachlorophenol, or of intermediates used to produce their pesticide derivatives. (This listing does not include wastes from the production of Hexachlorophene from highly purified 2,4,5-trichlorophenol.).	(H)
F021	Wastes (except wastewater and spent carbon from hydrogen chloride purification) from the production or manufacturing use (as a reactant, chemical intermediate, or component in a formulating process) of pentachlorophenol, or of intermediates used to produce its derivatives.	(H)
F022	Wastes (except wastewater and spent carbon from hydrogen chloride purification) from the manufacturing use (as a reactant, chemical intermediate, or component in a formulating process) of tetra-, penta-, or hexachlorobenzenes under alkaline conditions.	(H)
F023	Wastes (except wastewater and spent carbon from hydrogen chloride purification) from the production of materials on equipment previously used for the production or manufacturing use (as a reactant, chemical intermediate, or component in a formulating process) of tri- and tetrachlorophenols. (This listing does not include wastes from equipment used only for the production or use of Hexachlorophene from highly purified 2,4,5-trichlorophenol.).	(H)
F024	Process wastes, including but not limited to, distillation residues, heavy ends, tars, and reactor clean-out wastes, from the production of certain chlorinated aliphatic hydrocarbons by free radical catalyzed processes. These chlorinated aliphatic hydrocarbons are those having carbon chain lengths ranging from one to and including five, with varying amounts and positions of chlorine substitution. (This listing does not include wastewaters, wastewater treatment sludges, spent catalysts, and wastes listed in subparagraph (b) or (c) of this paragraph.).	(T)
F025	Condensed light ends, spent filters and filter aids, and spent desiccant wastes from the production of certain chlorinated aliphatic hydrocarbons, by free radical catalyzed processes. These chlorinated aliphatic hydrocarbons are those having carbon chain lengths ranging from one to and including five, with varying amounts and positions of chlorine substitution.	(T)

F026	Wastes (except wastewater and spent carbon from hydrogen chloride purification) from the production of materials on equipment previously used for the manufacturing use (as a reactant, chemical intermediate, or component in a formulating process) of tetra-, penta-, or hexachlorobenzene under alkaline conditions.	(H)
F027	Discarded unused formulations containing tri-, tetra-, or pentachlorophenol or discarded unused formulations containing compounds derived from these chlorophenols. (This listing does not include formulations containing Hexachlorophene synthesized from prepurified 2,4,5-trichlorophenol as the sole component.).	(H)
F028	Residues resulting from the incineration or thermal treatment of soil contaminated with Hazardous Waste Codes F020, F021, F022, F023, F026, and F027.	(T)
F032	Wastewaters (except those that have not come into contact with process contaminants), process residuals, preservative drippage, and spent formulations from wood preserving processes generated at plants that currently use or have previously used chlorophenolic formulations (except potentially cross-contaminated wastes that have had the F032 waste code deleted in accordance with subparagraph (f) of this paragraph or potentially cross-contaminated wastes that are otherwise currently regulated as hazardous wastes (i.e., F034 or F035), and where the generator does not resume or initiate use of chlorophenolic formulations). This listing does not include K001 bottom sediment sludge from the treatment of wastewater from wood preserving processes that use creosote and/or pentachlorophenol	(T)
F034	Wastewaters (except those that have not come into contact with process contaminants), process residuals, preservative drippage, and spent formulations from wood preserving processes generated at plants that use creosote formulations. This listing does not include K001 bottom sediment sludge from the treatment of wastewater from wood preserving processes that use creosote and/or pentachlorophenol	(T)
F035	Wastewaters (except those that have not come into contact with process contaminants), process residuals, preservative drippage, and spent formulations from wood preserving processes generated at plants that use inorganic preservatives containing arsenic or chromium. This listing does not include K001 bottom sediment sludge from the treatment of wastewater from wood preserving processes that use creosote and/or pentachlorophenol	(T)
F037	Petroleum refinery primary oil/water/solids separation sludge-Any sludge generated from the gravitational separation of oil/water/solids during the storage or treatment of process wastewaters and oily cooling wastewaters from petroleum refineries. Such sludges include, but are not limited to, those generated in oil/water/solids separators; tanks and impoundments; ditches and other conveyances; sumps; and stormwater units receiving dry weather flow. Sludge generated in stormwater units that do not receive dry weather flow, sludges generated from non-contact once-through cooling waters segregated for treatment from other process or oily cooling waters, sludges generated in aggressive biological treatment units as defined in subpart 2(ii) of this subparagraph (including sludges generated in one or more additional units after wastewaters have been treated in aggressive biological treatment units) and K051 wastes are not included in this listing. This listing does include residuals generated from processing or recycling oil-bearing hazardous secondary materials excluded under item (1)(d)1(xii)(I) of this rule, if those residuals are to be disposed of.	(T)
F038	Petroleum refinery secondary (emulsified) oil/water/solids separation sludge-Any sludge and/or float generated from the physical and/or chemical separation of oil/water/solids in process wastewaters and oily cooling wastewaters from petroleum refineries. Such wastes include, but are not limited to, all sludges and floats generated in: induced air flotation (IAF) units, tanks and impoundments, and all sludges generated in DAF units. Sludges generated in stormwater units that do not receive dry weather flow, sludges generated from non-contact once-through cooling waters segregated for treatment from other process or oily cooling waters, sludges and floats generated in aggressive biological treatment units as defined in subpart 2(ii) of this paragraph (including sludges and floats generated in one or more additional units after wastewaters have been treated in aggressive biological treatment units) and F037, K048, and K051 wastes are not included in this listing. This listing does include residuals generated from processing or recycling oil-bearing hazardous secondary materials	(T)

	excluded under ~~.02~~ item (1)(d)1(xii)(I) of this rule, if those residuals are to be disposed of.	
F039	Leachate (liquids that have percolated through land disposed wastes) resulting from the disposal of more than one restricted waste classified as hazardous under this paragraph. (Leachate resulting from the disposal of one or more of the following Hazardous Wastes and no other Hazardous Wastes retains its Hazardous Waste Code(s): F020, F021, F022, F026, F027, and/or F028.).	(T)

* (I, T,) should be used to specify mixtures that are ignitable and contain toxic constituents.
(R, T) should be used to specify mixtures that are reactive and contain toxic constituents.

2. Listing Specific Definitions:

(i) For the purposes of the F037 and F038 listings, oil/water/solids is defined as oil and/or water and/or solids.

(ii) (I) For the purposes of the F037 and F038 listings, aggressive biological treatment units are defined as units which employ one of the following four treatment methods: activated sludge; trickling filter; rotating biological contactor for the continuous accelerated biological oxidation of wastewaters; or high-rate aeration. High-rate aeration is a system of surface impoundments or tanks, in which intense mechanical aeration is used to completely mix the wastes, enhance biological activity, and (I) the units employs a minimum of 6 hp per million gallons of treatment volume; and either (II) the hydraulic retention time of the unit is no longer than 5 days; or (III) the hydraulic retention time is no longer than 30 days and the unit does not generate a sludge that is a hazardous waste by the Toxicity Characteristic.

(II) Generators and treatment, storage and disposal facilities have the burden of proving that their sludges are exempt from listing as F037 and F038 wastes under this definition. Generators and treatment, storage and disposal facilities must maintain, in their operating or other onsite records, documents and data sufficient to prove that: (I) the unit is an aggressive biological treatment unit as defined in this part; and (II) the sludges sought to be exempted from the definitions of F037 and/or F038 were actually treated in the aggressive biological treatment unit.

(iii) (I) For the purposes of the F037 listing, sludges are considered to be generated at the moment of deposition in the unit, where deposition is defined as at least a temporary cessation of lateral particle movement.

(II) For the purposes of the F038 listing,

I. Sludges are considered to be generated at the moment of deposition in the unit, where deposition is defined as at least a temporary cessation of lateral particle movement and

II. Floats are considered to be generated at the moment they are formed in the top of the unit.

(iv) For the purposes of the F019 listing, the following apply to wastewater treatment sludges from the manufacturing of motor vehicles using a zinc phosphating process.

(I) Motor vehicle manufacturing is defined to include the manufacture of automobiles and light trucks/utility vehicles (including light duty vans, pick-up trucks, minivans, and sport utility vehicles). Facilities must be

engaged in manufacturing complete vehicles (body and chassis or unibody) or chassis only.

(II) Generators must maintain in their on-site records documentation and information sufficient to prove that the wastewater treatment sludges to be exempted from the F019 listing meet the conditions of the listing. These records must include: the volume of waste generated and disposed of off site; documentation showing when the waste volumes were generated and sent off site; the name and address of the receiving facility; and documentation confirming receipt of the waste by the receiving facility. Generators must maintain these documents on site for no less than five (5) years. The retention period for the documentation is automatically extended during the course of any enforcement action or as requested by the Commissioner.

(c) Hazardous Wastes from Specific Sources [40 CFR 261.32]

1. The following solid wastes are listed hazardous wastes from specific sources unless they are excluded under subparagraphs (a) and (c) of Rule ~~1200-01-11-.01~~ 0400-12-01-.01(3) and listed in paragraph (5) Appendix IX of this rule.

Industry and Hazardous Waste Code	Hazardous Waste	Hazard Code
Wood preservation:		
K001	Bottom sediment sludge from the treatment of wastewaters from wood preserving processes that use creosote and/or pentachlorophenol.	(T)
Inorganic pigments:		
K002	Wastewater treatment sludge from the production of chrome yellow and orange pigments.	(T)
K003	Wastewater treatment sludge from the production of molybdate orange pigments.	(T)
K004	Wastewater treatment sludge from the production of zinc yellow pigments.	(T)
K005	Wastewater treatment sludge from the production of chrome green pigments.	(T)
K006	Wastewater treatment sludge from the production of chrome oxide green pigments (anhydrous and hydrated).	(T)
K007	Wastewater treatment sludge from the production of iron blue pigments.	(T)
K008	Oven residue from the production of chrome oxide green pigments.	(T)
Organic chemicals:		
K009	Distillation bottoms from the production of acetaldehyde from ethylene.	(T)
K010	Distillation side cuts from the production of acetaldehyde from ethylene.	(T)

K011	Bottom stream from the wastewater stripper in the production of acrylonitrile.	(R, T)
K013	Bottom stream from the acetonitrile column in the production of acrylonitrile.	(R, T)
K014	Bottoms from the acetonitrile purification column in the production of acrylonitrile.	(T)
K015	Still bottoms from the distillation of benzyl chloride.	(T)
K016	Heavy ends or distillation residues from the production of carbon tetrachloride.	(T)
K017	Heavy ends (still bottoms) from the purification column in the production of epichlorohydrin.	(T)
K018	Heavy ends from the fractionation column in ethyl chloride production.	(T)
K019	Heavy ends from the distillation of ethylene dichloride in ethylene dichloride production.	(T)
K020	Heavy ends from the distillation of vinyl chloride in vinyl chloride monomer production.	(T)
K021	Aqueous spent antimony catalyst waste from fluoromethanes production.	(T)
K022	Distillation bottom tars from the production of phenol/acetone from cumene.	(T)
K023	Distillation light ends from the production of phthalic anhydride from naphthalene.	(T)
K024	Distillation bottoms from the production of phthalic anhydride from naphthalene.	(T)
K025	Distillation bottoms from the production of nitrobenzene by the nitration of benzene.	(T)
K026	Stripping still tails from the production of methyl ethyl pyridines.	(T)
K027	Centrifuge and distillation residues from toluene diisocyanate production.	(R, T)
K028	Spent catalyst from the hydrochlorinator reactor in the production of 1,1,1-trichloroethane.	(T)
K029	Waste from the product steam stripper in the production of 1,1,1-trichloroethane.	(T)
K030	Column bottoms or heavy ends from the combined production of trichloroethylene and perchloroethylene.	(T)
K083	Distillation bottoms from aniline production.	(T)
K085	Distillation or fractionation column bottoms from the production of chlorobenzenes.	(T)
K093	Distillation light ends from the production of phthalic anhydride from ortho-xylene.	(T)
K094	Distillation bottoms from the production of phthalic anhydride from ortho-xylene.	(T)
K095	Distillation bottoms from the production of 1,1,1-trichloroethane.	(T)

K096	Heavy ends from the heavy ends column from the production of 1,1,1-trichloroethane.	(T)
K103	Process residues from aniline extraction from the production of aniline.	(T)
K104	Combined wastewater streams generated from nitrobenzene/aniline production.	(T)
K105	Separated aqueous stream from the reactor product washing step in the production of chlorobenzenes.	(T)
K107	Column bottoms from product separation from the production of 1,1 dimethylhydrazine (UDMH) from carboxylic acid ~~hydrazines~~ hydrazides.	(C,T)
K108	Condensed column overheads from product separation and condensed reactor vent gases from the production of 1,1-dimethylhydrazine (UDMH) from carboxylic acid hydrazides.	(I,T)
K109	Spent filter cartridges from product purification from the production of 1,1-dimethylhydrazine (UDMH) from carboxylic acid hydrazides.	(T)
K110	Condensed column overheads from intermediate separation from the production of 1,1-dimethylhydrazine (UDMH) from carboxylic acid hydrazides.	(T)
K111	Product washwaters from the production of dinitrotoluene via nitration of toluene.	(C,T)
K112	Reaction by-product water from the drying column in the production of toluenediamine via hydrogenation of dinitrotoluene.	(T)
K113	Condensed liquid light ends from the purification of toluenediamine in the production of toluenediamine via hydrogenation of dinitrotoluene.	(T)
K114	Vicinals from the purification of toluenediamine in the production of toluenediamine via hydrogenation of dinitrotoluene.	(T)
K115	Heavy ends from the purification of toluenediamine in the production of toluenediamine via hydrogenation of dinitrotoluene.	(T)
K116	Organic condensate from the solvent recovery column in the production of toluene diisocyanate via phosgenation of toluenediamine.	(T)
K117	Wastewater from the reactor vent gas scrubber in the production of ethylene dibromide via bromination of ethene.	(T)
K118	Spent adsorbent solids from purification of ethylene dibromide in the production of ethylene dibromide via bromination of ethene.	(T)
K136	Still bottoms from the purification of ethylene dibromide in the production of ethylene dibromide via bromination of ethene.	(T)
K149	Distillation bottoms from the production of alpha- (or methyl-) chlorinated toluenes, ring-chlorinated toluenes, benzoyl chlorides, and compounds with mixtures of these functional groups, (This waste does not include still bottoms from the distillation of benzyl chloride.).	(T)
K150	Organic residuals, excluding spent carbon adsorbent, from the spent chlorine gas and hydrochloric acid recovery processes associated with the production of alpha- (or methyl-) chlorinated toluenes, ring-chlorinated toluenes, benzoyl chlorides, and compounds with mixtures of these functional groups.	(T)

K151	Wastewater treatment sludges, excluding neutralization and biological sludges, generated during the treatment of wastewaters from the production of alpha-(or methyl-) chlorinated toluenes, ring-chlorinated toluenes, benzoyl chlorides, and compounds with mixtures of these functional groups.	(T)
K156	Organic waste (including heavy ends, still bottoms, light ends, spent solvents, filtrates, and decantates) from the production of carbamates and carbamoyl oximes. (This listing does not apply to wastes generated from the manufacture of 3-iodo-2-propynyl n-butylcarbamate.)	(T)
K157	Wastewaters (including scrubber waters, condenser waters, washwaters, and separation waters) from the production of carbamates and carbamoyl oximes. (This listing does not apply to wastes generated from the manufacture of 3-iodo-2-propynyl n-butylcarbamate.)	(T)
K158	Bag house dusts and filter/separation solids from the production of carbamates and carbamoyl oximes. (This listing does not apply to wastes generated from the manufacture of 3-iodo-2-propynyl n-butylcarbamate.).	(T)
K159	Organics from the treatment of thiocarbamate wastes	(T)
K161	Purification solids (including filtration, evaporation, and centrifugation solids), bag house dust and floor sweepings from the production of dithiocarbamate acids and their salts. (This listing does not include K125 or K126.)	(R,T)
K174	Wastewater treatment sludges from the production of ethylene dichloride or vinyl chloride monomer (including sludges that result from commingled ethylene dichloride or vinyl chloride monomer wastewater and other wastewater), unless the sludges meet the following conditions: (i) they are disposed of in a Subtitle C or non-hazardous landfill licensed or permitted by the state or federal government; (ii) they are not otherwise placed on the land prior to final disposal; and (iii) the generator maintains documentation demonstrating that the waste was either disposed of in an on-site landfill or consigned to a transporter or disposal facility that provided a written commitment to dispose of the waste in an off-site landfill. Respondents in any action brought to enforce the requirements of Subtitle C must, upon a showing by the government that the respondent managed wastewater treatment sludges from the production of vinyl chloride monomer or ethylene dichloride, demonstrate that they meet the terms of the exclusion set forth above. In doing so, they must provide appropriate documentation (e.g., contracts between the generator and the landfill owner/operator, invoices documenting delivery of waste to landfill, etc.) that the terms of the exclusion were met.	(T)
K175	Wastewater treatment sludges from the production of vinyl chloride monomer using mercuric chloride catalyst in an acetylene-based process.	(T)

K181	Nonwastewaters from the production of dyes and/or pigments (including nonwastewaters commingled at the point of generation with nonwastewaters from other processes) that, at the point of generation, contain mass loadings of any of the constituents identified in part 3 of this subparagraph that are equal to or greater than the corresponding part 3 levels, as determined on a calendar year basis. These wastes will not be hazardous if the nonwastewaters are: (i) disposed in a Subtitle D landfill unit subject to the design criteria in 40 CFR 258.40, (ii) disposed in a Subtitle C landfill unit subject to either Rule ~~1200-01-11-.06~~ 0400-12-01-.06(14)(b) or Rule ~~1200-01-11-.05~~ 0400-12-01-.05(14)(b); (iii) disposed in other Subtitle D landfill units that meet the design criteria in 40 CFR 258.40, Rule ~~1200-01-11-.06~~ 0400-12-01-.06(14)(b), or Rule ~~1200-01-11-.05~~ 0400-12-01-.05(14)(b); or (iv) treated in a combustion unit that is permitted under Subtitle C, or an onsite combustion unit that is permitted under the Clean Air Act. For the purposes of this listing, dyes and/or pigments production is defined in subpart 2(i) of this subparagraph. Part 4 of this subparagraph describes the process for demonstrating that a facility's nonwastewaters are not K181. This listing does not apply to wastes that are otherwise identified as hazardous under subparagraphs (b) through (e) of paragraph (3) of this rule and subparagraphs (b) through (d) of paragraph (4) of this rule at the point of generation. Also, the listing does not apply to wastes generated before any annual mass loading limit is met.	(T)
Inorganic chemicals:		
K071	Brine purification muds from the mercury cell process in chlorine production, where separately prepurified brine is not used.	(T)
K073	Chlorinated hydrocarbon waste from the purification step of the diaphragm cell process using graphite anodes in chlorine production.	(T)
K106	Wastewater treatment sludge from the mercury cell process in chlorine production.	(T)
K176	Baghouse filters from the production of antimony oxide, including filters from the production of intermediates (e. g., antimony metal or crude antimony oxide).	(E)
K177	Slag from the production of antimony oxide that is speculatively accumulated or disposed, including slag from the production of intermediates (e. g., antimony metal or crude antimony oxide).	(T)
K178	Residues from manufacturing and manufacturing-site storage of ferric chloride from acids formed during the production of titanium dioxide using the chloride-ilmenite process.	(T)
Pesticides:		
K031	By-product salts generated in the production of MSMA and cacodylic acid.	(T)
K032	Wastewater treatment sludge from the production of chlordane.	(T)
K033	Wastewater and scrub water from the chlorination of cyclopentadiene in the production of chlordane.	(T)
K034	Filter solids from the filtration of hexachlorocyclopentadiene in the production of chlordane.	(T)

K035	Wastewater treatment sludges generated in the production of creosote.	(T)
K036	Still bottoms from toluene reclamation distillation in the production of disulfoton.	(T)
K037	Wastewater treatment sludges from the production of disulfoton.	(T)
K038	Wastewater from the washing and stripping of phorate production.	(T)
K039	Filter cake from the filtration of diethylphosphorodithioic acid in the production of phorate.	(T)
K040	Wastewater treatment sludge from the production of phorate.	(T)
K041	Wastewater treatment sludge from the production of toxaphene.	(T)
K042	Heavy ends or distillation residues from the distillation of tetrachlorobenzene in the production of 2,4,5-T.	(T)
K043	2,6-Dichlorophenol waste from the production of 2,4-D.	(T)
K097	Vacuum stripper discharge from the chlordane chlorinator in the production of chlordane.	(T)
K098	Untreated process wastewater from the production of toxaphene.	(T)
K099	Untreated wastewater from the production of 2,4-D.	(T)
K123	Process wastewater (including supernates, filtrates, and washwaters) from the production of ethylenebisdithiocarbamic acid and its salt.	(T)
K124	Reactor vent scrubber water from the production of ethylenebisdithiocarbamic acid and its salts.	(C, T)
K125	Filtration, evaporation, and centrifugation solids from the production of ethylenebisdithiocarbamic acid and its salts.	(T)
K126	Baghouse dust and floor sweepings in milling and packaging operations from the production or formulation of ethylenebisdithiocarbamic acid and its salts.	(T)
K131	Wastewater from the reactor and spent sulfuric acid from the acid dryer from the production of methyl bromide.	(C,T)
K132	Spent absorbent and wastewater separator solids from the production of methyl bromide.	(T)
Explosives:		
K044	Wastewater treatment sludges from the manufacturing and processing of explosives.	(R)
K045	Spent carbon from the treatment of wastewater containing explosives.	(R)
K046	Wastewater treatment sludges from the manufacturing, formulation and loading of lead-based initiating compounds.	(T)
K047	Pink/red water from TNT operations.	(R)
Petroleum refining:		
K048	Dissolved air flotation (DAF) float from the petroleum refining industry.	(T)
K049	Slop oil emulsion solids from the petroleum refining industry.	(T)

K050	Heat exchanger bundle cleaning sludge from the petroleum refining industry.	(T)
K051	API separator sludge from the petroleum refining industry.	(T)
K052	Tank bottoms (leaded) from the petroleum refining industry.	(T)
K169	Crude oil storage tank sediment from petroleum refining operations.	(T)
K170	Clarified slurry oil tank sediment and/or in-line filter/separation solids from petroleum refining operations.	(T)
K171	Spent Hydrotreating catalyst from petroleum refining operations, including guard beds used to desulfurize feeds to other catalytic reactors (this listing does not include inert support media).	(I,T)
K172	Spent Hydrorefining catalyst from petroleum refining operations, including guard beds used to desulfurize feeds to other catalytic reactors (this listing does not include inert support media).	(I,T)
Iron and steel:		
K061	Emission control dust/sludge from the primary production of steel in electric furnaces.	(T)
K062	Spent pickle liquor generated by steel finishing operations of facilities within the iron and steel industry (SIC Codes 331 and 332).	(C,T)
Primary aluminum:		
K088	Spent potliners from primary aluminum reduction.	(T)
Secondary lead:		
K069	Emission control dust/sludge from secondary lead smelting. (Note: This listing is stayed administratively for sludge generated from secondary acid scrubber systems. The stay will remain in effect until further administrative action is taken. If EPA takes further action effecting this stay, EPA will publish a notice of the action in the Federal Register).	(T)
K100	Waste leaching solution from acid leaching of emission control dust/sludge from secondary lead smelting.	(T)
Veterinary pharmaceu-ticals:		
K084	Wastewater treatment sludges generated during the production of veterinary pharmaceuticals from arsenic or organo-arsenic compounds.	(T)
K101	Distillation tar residues from the distillation of aniline-based compounds in the production of veterinary pharmaceuticals from arsenic or organo-arsenic compounds.	(T)
K102	Residue from the use of activated carbon for decolorization in the production of veterinary pharmaceuticals from arsenic or organo-arsenic compounds.	(T)

Ink formulation:		
K086	Solvent washes and sludges, caustic washes and sludges, or water washes and sludges from cleaning tubs and equipment used in the formulation of ink from pigments, driers, soaps, and stabilizers containing chromium and lead.	(T)
Coking:		
K060	Ammonia still lime sludge from coking operations.	(T)
K087	Decanter tank tar sludge from coking operations.	(T)
K141	Process residues from the recovery of coal tar, including, but not limited to, collecting sump residues from the production of coke from coal or the recovery of coke by-products produced from coal. This listing does not include K087 (decanter tank tar sludges from coking operations).	(T)
K142	Tar storage tank residues from the production of coke from coal or from the recovery of coke by-products produced from coal.	(T)
K143	Process residues from the recovery of light oil, including, but not limited to, those generated in stills, decanters, and wash oil recovery units from the recovery of coke by-products produced from coal.	(T)
K144	Wastewater sump residues from light oil refining, including, but not limited to, intercepting or contamination sump sludges from the recovery of coke by-products produced from coal.	(T)
K145	Residues from naphthalene collection and recovery operations from the recovery of coke by-products produced from coal.	(T)
K147	Tar storage tank residues from coal tar refining.	(T)
K148	Residues from coal tar distillation, including but not limited to, still bottoms.	(T)

2. Listing Specific Definitions

(i) For the purposes of the K181 listing, dyes and/or pigments production is defined to include manufacture of the following product classes: dyes, pigments, or FDA certified colors that are classified as azo, triarylmethane, perylene or anthraquinone classes. Azo products include azo, monoazo, diazo, triazo, polyazo, azoic, benzidine, and pyrazolone products. Triarylmethane products include both triarylmethane and triphenylmethane products. Wastes that are not generated at a dyes and/or pigments manufacturing site, such as wastes from the offsite use, formulation, and packaging of dyes and/or pigments, are not included in the K181 listing.

3. K181 Listing Levels

Nonwastewaters containing constituents in amounts equal to or exceeding the following levels during any calendar year are subject to the K181 listing, unless the conditions in the K181 listing are met.

Constituent	Chemical Abstracts No.	Mass levels (kg/yr)
Aniline	62-53-3	9,300
o-Anisidine	90-04-0	110
4-Chloroaniline	106-47-8	4,800
p-Cresidine	120-71-8	660

2, 4-dimethylaniline	95-68-1	100
1, 2-Phenylenediamine	95-54-5	710
1, 3-Phenylenediamine	108-45-2	1,200

4. Procedures for demonstrating that dyes and/or pigment nonwastewaters are not K181

The procedures described in subparts ~~4(i)-4(iii) and 4(v) of this subparagraph~~ (i) through (iii) and (v) of this part establish when nonwastewaters from the production of dyes/pigments would not be hazardous (these procedures apply to wastes that are not disposed in landfill units or treated in combustion units as specified in part 1 of this subparagraph). If the nonwastewaters are disposed in landfill units or treated in combustion units as described in part 1 of this subparagraph, then the nonwastewaters are not hazardous. In order to demonstrate that it is meeting the landfill disposal or combustion conditions contained in the K181 listing description, the generator must maintain documentation as described in subpart 4 (iv) of this ~~subparagraph~~ part.

(i) Determination based on no K181 constituents

Generators that have knowledge (e. g., knowledge of constituents in wastes based on prior sampling and analysis data and/or information about raw materials used, production processes used, and reaction and degradation products formed) that their wastes contain none of the K181 constituents (see part 3 of this subparagraph) can use their knowledge to determine that their waste is not K181. The generator must document the basis for all such determinations on an annual basis and keep each annual documentation for three years.

(ii) Determination for generated quantities of 1,000 MT/yr or less for wastes that contain K181 constituents

If the total annual quantity of dyes and/or pigment nonwastewaters generated is 1,000 metric tons or less, the generator can use knowledge of the wastes (e. g., knowledge of constituents in wastes based on prior analytical data and/or information about raw materials used, production processes used, and reaction and degradation products formed) to conclude that annual mass loadings for the K181 constituents are below the listing levels of part 3 of this subparagraph. To make this determination, the generator must:

(I) Each year document the basis for determining that the annual quantity of nonwastewaters expected to be generated will be less than 1,000 metric tons.

(II) Track the actual quantity of nonwastewaters generated from January 1 through December 31 of each year. If, at any time within the year, the actual waste quantity exceeds 1,000 metric tons, the generator must comply with the requirements of subpart 4 (iii) of this ~~subparagraph~~ part for the remainder of the year.

(III) Keep a running total of the K181 constituent mass loadings over the course of the calendar year.

(IV) Keep the following records on site for the three most recent calendar years in which the hazardous waste determinations are made:

I. The quantity of dyes and/or pigment nonwastewaters generated.

II. The relevant process information used.

III. The calculations performed to determine annual total mass loadings for each K181 constituent in the nonwastewaters during the year.

(iii) Determination for generated quantities greater than 1,000 MT/yr for wastes that contain K181 constituents

If the total annual quantity of dyes and/or pigment nonwastewaters generated is greater than 1,000 metric tons, the generator must perform all of the steps described in items ~~4 (iii)(I)-4 (iii)(XI) of this subparagraph~~ (I) through (XI) of this subpart in order to make a determination that its waste is not K181.

(I) Determine which K181 constituents of this subparagraph are reasonably expected to be present in the wastes based on knowledge of the wastes (e. g., based on prior sampling and analysis data and/or information about raw materials used, production processes used, and reaction and degradation products formed).

(II) If 1, 2-phenylenediamine is present in the wastes, the generator can use either knowledge or sampling and analysis procedures to determine the level of this constituent in the wastes. For determinations based on use of knowledge, the generator must comply with the procedures for using knowledge described in subpart 4 (ii) of this ~~subparagraph~~ part and keep the records described in item ~~4(ii)(II)~~ (ii)(IV) of this ~~subparagraph~~ part. For determinations based on sampling and analysis, the generator must comply with the sampling and analysis and recordkeeping requirements described below in this ~~subparagraph~~ subpart.

(III) Develop a waste sampling and analysis plan (or modify an existing plan) to collect and analyze representative waste samples for the K181 constituents reasonably expected to be present in the wastes. At a minimum, the plan must include:

I. A discussion of the number of samples needed to characterize the wastes fully;

II. The planned sample collection method to obtain representative waste samples;

III. A discussion of how the sampling plan accounts for potential temporal and spatial variability of the wastes; and

IV. A detailed description of the test methods to be used, including sample preparation, clean up (if necessary), and determinative methods.

(IV) Collect and analyze samples in accordance with the waste sampling and analysis plan.

I. The sampling and analysis must be unbiased, precise, and representative of the wastes.

II. The analytical measurements must be sufficiently sensitive, accurate and precise to support any claim that the constituent mass loadings are below the listing levels of part 3 of this subparagraph.

(V) Record the analytical results.

(VI) Record the waste quantity represented by the sampling and analysis results.

(VII) Calculate constituent-specific mass loadings (product of concentrations and waste quantity).

(VIII) Keep a running total of the K181 constituent mass loadings over the course of the calendar year.

(IX) Determine whether the mass of any of the K181 constituents listed in part 3 of this subparagraph generated between January 1 and December 31 of any year is below the K181 listing levels.

(X) Keep the following records on site for the three most recent calendar years in which the hazardous waste determinations are made:

I. The sampling and analysis plan.

II. The sampling and analysis results (including QA/QC data).

III. The quantity of dyes and/or pigments nonwastewaters generated.

IV. The calculations performed to determine annual mass loadings.

(XI) Nonhazardous waste determinations must be conducted annually to verify that the wastes remain nonhazardous.

I. The annual testing requirements are suspended after three consecutive successful annual demonstrations that the wastes are nonhazardous. The generator can then use knowledge of the wastes to support subsequent annual determinations.

II. The annual testing requirements are reinstated if the manufacturing or waste treatment processes generating the wastes are significantly altered, resulting in an increase of the potential for the wastes to exceed the listing levels.

III. If the annual testing requirements are suspended, the generator must keep records of the process knowledge information used to support a nonhazardous determination. If testing is reinstated, a description of the process change must be retained.

(iv) Recordkeeping for the landfill disposal and combustion exemptions

For the purposes of meeting the landfill disposal and combustion condition set out in the K181 listing description, the generator must maintain on site for three years documentation demonstrating that each shipment of waste was received by a landfill unit that is subject to or meets the landfill design standards set out in the listing description, or was treated in combustion units as specified in the listing description.

(v) Waste holding and handling

During the interim period, from the point of generation to completion of the hazardous waste determination, the generator is responsible for storing the wastes appropriately. If the wastes are determined to be hazardous and the generator has not complied with the Subtitle C requirements during the interim

period, the generator could be subject to an enforcement action for improper management.

(d) Discarded Commercial Chemical Products, Off-specifications Species, Container Residues, and Spill Residues Thereof [40 CFR 261.33]

The following materials or items are hazardous wastes if and when they are discarded or intended to be discarded as described in item (1)(b)1(ii)(I) of this rule, when they are mixed with waste oil or used oil or other material and applied to the land for dust suppression or road treatment, when they are otherwise applied to the land in lieu of their original intended use or when they are contained in products that are applied to the land in lieu of their original intended use, or when, in lieu of their original intended use, they are produced for use as (or as a component of) a fuel, distributed for use as a fuel, or burned as a fuel.

1. Any commercial chemical product, or manufacturing chemical intermediate having the generic name listed in part 5 or 6 of this subparagraph.

2. Any off-specification commercial chemical product or manufacturing chemical intermediate which, if it met specifications, would have the generic name listed in part 5 or 6 of this subparagraph.

3. Any residue remaining in a container or in an inner liner removed from a container that has held any commercial chemical product or manufacturing chemical intermediate having the generic name listed in part 5 or 6 of this subparagraph, unless the container is empty as defined in Rule ~~1200-01-11-.02~~ 0400-12-01-.02(1)(g)2.

(Comment: Unless the residue is being beneficially used or reused, or legitimately recycled or reclaimed; or being accumulated, stored, transported or treated prior to such use, re-use, recycling or reclamation, Department considers the residue to be intended for discard, and thus, a hazardous waste. An example of a legitimate re-use of the residue would be where the residue remains in the container and the container is used to hold the same commercial chemical product or manufacturing chemical intermediate it previously held. An example of the discard of the residue would be where the drum is sent to a drum reconditioner who reconditions the drum but discards the residue.)

4. Any residue or contaminated soil, water or other debris resulting from the cleanup of a spill into or on any land or water of any commercial chemical product or manufacturing chemical intermediate having the generic name listed in part 5 or 6 of this subparagraph, or any residue or contaminated soil, water or other debris resulting from the cleanup of a spill, into or on any land or water, of any off-specification chemical product and manufacturing chemical intermediate which, if it met specifications, would have the generic name listed in part 5 or 6 of this subparagraph.

(Comment: The phrase "commercial chemical product or manufacturing chemical intermediate having the generic name listed in . . ." refers to a chemical substance which is manufactured or formulated for commercial or manufacturing use which consists of the commercially pure grade of the chemical, any technical grades of the chemical that are produced or marketed, and all formulations in which the chemical is the sole active ingredient. It does not refer to a material, such as a manufacturing process waste, that contains any of the substances listed in part 5 or 6 of this subparagraph. Where a manufacturing process waste is deemed to be a hazardous waste because it contains a substance listed in part 5 or 6 of this subparagraph, such waste will be listed in either subparagraphs (b) or (c) of this paragraph or will be identified as a hazardous waste by the characteristics set forth in paragraph (3) of this rule.)

5. The commercial chemical products, manufacturing chemical intermediates or off-specification commercial chemical products or manufacturing chemical intermediates referred to in parts 1 through 4 of this subparagraph, are identified as acute hazardous wastes (H) and are subject to the small quantity exclusion defined in part (1)(e)5 and 6 of this rule.

(Comment: For the convenience of the regulated community the primary hazardous properties of these materials have been indicated by the letters T (Toxicity), and R (Reactivity). Absence of a letter indicates that the compound only is listed for acute toxicity.)

These wastes and their corresponding Hazardous Waste Codes are:

Hazardous Waste No.	Chemical Abstracts No.	Substance
P023	107-20-0	Acetaldehyde, chloro-
P002	591-08-2	Acetamide, N-(aminothioxomethyl)-
P057	640-19-7	Acetamide, 2-fluoro-
P058	62-74-8	Acetic acid, fluoro-, sodium salt
P002	591-08-2	1-Acetyl-2-thiourea
P003	107-02-8	Acrolein
P070	116-06-3	Aldicarb
P203	1646-88-4	Aldicarb sulfone.
P004	309-00-2	Aldrin
P005	107-18-6	Allyl alcohol
P006	20859-73-8	Aluminum phosphide (R,T)
P007	2763-96-4	5-(Aminomethyl)-3-isoxazolol
P008	504-24-5	4-Aminopyridine
P009	131-74-8	Ammonium picrate (R)
P119	7803-55-6	Ammonium vanadate
P099	506-61-6	Argentate(1-), bis(cyano-C)-, potassium
P010	7778-39-4	Arsenic acid H_3AsO_4
P012	1327-53-3	Arsenic oxide As_2O_3
P011	1303-28-2	Arsenic oxide As_2O_5
P011	1303-28-2	Arsenic pentoxide
P012	1327-53-3	Arsenic trioxide
P038	692-42-2	Arsine, diethyl-
P036	696-28-6	Arsonous dichloride, phenyl-
P054	151-56-4	Aziridine
P067	75-55-8	Aziridine, 2-methyl-
P013	542-62-1	Barium cyanide
P024	106-47-8	Benzenamine, 4-chloro-
P077	100-01-6	Benzenamine, 4-nitro-
P028	100-44-7	Benzene, (chloromethyl)-

P042	51-43-4	1,2-Benzenediol, 4-[1-hydroxy-2-(methylamino)ethyl]-, (R)-
P046	122-09-8	Benzeneethanamine, alpha,alpha-dimethyl-
P014	108-98-5	Benzenethiol
P127	1563-66-2	7-Benzofuranol, 2,3-dihydro-2,2-dimethyl-, methylcarbamate.
P188	57-64-7	Benzoic acid, 2-hydroxy-, compd. with (3aS-cis)-1,2,3,3a,8,8a-hexahydro-1,3a,8-trimethylpyrrolo[2,3-b]indol-5-yl methylcarbamate ester (1:1).
P001	181-81-2	2H-1-Benzopyran-2-one, 4-hydroxy-3-(3-oxo-1-phenylbutyl)-, & salts, when present at concentrations greater than 0.3%
P028	100-44-7	Benzyl chloride
P015	7440-41-7	Beryllium powder
P017	598-31-2	Bromoacetone
P018	357-57-3	Brucine
P045	39196-18-4	2-Butanone, 3,3-dimethyl-1-(methylthio)-, O-[(methylamino)carbonyl] oxime
P021	592-01-8	Calcium cyanide
P021	592-01-8	Calcium cyanide $Ca(CN)_2$
P189	55285-14-8	Carbamic acid, [(dibutylamino)- thio]methyl-, 2,3-dihydro-2,2-dimethyl- 7-benzofuranyl ester.
P191	644-64-4	Carbamic acid, dimethyl-, 1-[(dimethyl-amino)carbonyl]- 5-methyl-1H- pyrazol-3-yl ester.
P192	119-38-0	Carbamic acid, dimethyl-, 3-methyl-1- (1-methylethyl)-1H- pyrazol-5-yl ester.
P190	1129-41-5	Carbamic acid, methyl-, 3-methylphenyl ester.
P127	1563-66-2	Carbofuran.
P022	75-15-0	Carbon disulfide
P095	75-44-5	Carbonic dichloride
P189	55285-14-8	Carbosulfan.
P023	107-20-0	Chloroacetaldehyde
P024	106-47-8	p-Chloroaniline
P026	5344-82-1	1-(o-Chlorophenyl)thiourea
P027	542-76-7	3-Chloropropionitrile
P029	544-92-3	Copper cyanide
P029	544-92-3	Copper cyanide Cu(CN)
P202	64-00-6	m-Cumenyl methylcarbamate.
P030		Cyanides (soluble cyanide salts), not otherwise specified
P031	460-19-5	Cyanogen
P033	506-77-4	Cyanogen chloride
P033	506-77-4	Cyanogen chloride (CN)Cl
P034	131-89-5	2-Cyclohexyl-4,6-dinitrophenol
P016	542-88-1	Dichloromethyl ether

P036	696-28-6	Dichlorophenylarsine
P037	60-57-1	Dieldrin
P038	692-42-2	Diethylarsine
P041	311-45-5	Diethyl-p-nitrophenyl phosphate
P040	297-97-2	O,O-Diethyl O-pyrazinyl phosphorothioate
P043	55-91-4	Diisopropylfluorophosphate (DFP)
P004	309-00-2	1,4,5,8-Dimethanonaphthalene, 1,2,3,4,10,10-hexachloro-1,4,4a,5,8,8a,-hexahydro-, (1alpha,4alpha,4abeta,5alpha,8alpha,8abeta)-
P060	465-73-6	1,4,5,8-Dimethanonaphthalene, 1,2,3,4,10,10-hexachloro-1,4,4a,5,8,8a-hexahydro-, (1alpha,4alpha,4abeta,5beta,8beta,8abeta)-
P037	60-57-1	2,7:3,6-Dimethanonaphth[2,3-b]oxirene, 3,4,5,6,9,9-hexachloro-1a,2,2a,3,6,6a,7,7a-octahydro-, (1aalpha,2beta,2aalpha,3beta,6beta,6aalpha,7beta, 7aalpha)-
P051	[1]72-20-8	2,7:3,6-Dimethanonaphth [2,3-b]oxirene, 3,4,5,6,9,9-hexachloro-1a,2,2a,3,6,6a,7,7a-octahydro-, (1aalpha,2beta,2abeta,3alpha,6alpha,6abeta,7beta, 7aalpha)-, & metabolites
P044	60-51-5	Dimethoate
P046	122-09-8	alpha,alpha-Dimethylphenethylamine
P191	644-64-4	Dimetilan.
P047	[1]534-52-1	4,6-Dinitro-o-cresol, & salts
P048	51-28-5	2,4-Dinitrophenol
P020	88-85-7	Dinoseb
P085	152-16-9	Diphosphoramide, octamethyl-
P111	107-49-3	Diphosphoric acid, tetraethyl ester
P039	298-04-4	Disulfoton
P049	541-53-7	Dithiobiuret
P185	26419-73-8	1,3-Dithiolane-2-carboxaldehyde, 2,4-dimethyl-, O- [(methylamino)- carbonyl]oxime.
P050	115-29-7	Endosulfan
P088	145-73-3	Endothall
P051	72-20-8	Endrin
P051	72-20-8	Endrin, & metabolites
P042	51-43-4	Epinephrine
P031	460-19-5	Ethanedinitrile
P194	23135-22-0	Ethanimidothioic acid, 2-(dimethylamino)-N-[[(methylamino) carbonyl]oxy]-2-oxo-, methyl ester.
P066	16752-77-5	Ethanimidothioic acid, N-[[(methylamino)carbonyl]oxy]-, methyl ester
P101	107-12-0	Ethyl cyanide
P054	151-56-4	Ethyleneimine
P097	52-85-7	Famphur
P056	7782-41-4	Fluorine

P057	640-19-7	Fluoroacetamide
P058	62-74-8	Fluoroacetic acid, sodium salt
P198	23422-53-9	Formetanate hydrochloride.
P197	17702-57-7	Formparanate.
P065	628-86-4	Fulminic acid, mercury(2+) salt (R,T)
P059	76-44-8	Heptachlor
P062	757-58-4	Hexaethyl tetraphosphate
P116	79-19-6	Hydrazinecarbothioamide
P068	60-34-4	Hydrazine, methyl-
P063	74-90-8	Hydrocyanic acid
P063	74-90-8	Hydrogen cyanide
P096	7803-51-2	Hydrogen phosphide
P060	465-73-6	Isodrin
P192	119-38-0	Isolan.
P202	64-00-6	3-Isopropylphenyl N-methylcarbamate.
P007	2763-96-4	3(2H)-Isoxazolone, 5-(aminomethyl)-
P196	15339-36-3	Manganese, bis(dimethylcarbamodithioato-S,S')-,
P196	15339-36-3	Manganese dimethyldithiocarbamate.
P092	62-38-4	Mercury, (acetato-O)phenyl-
P065	628-86-4	Mercury fulminate (R,T)
P082	62-75-9	Methanamine, N-methyl-N-nitroso-
P064	624-83-9	Methane, isocyanato-
P016	542-88-1	Methane, oxybis[chloro-
P112	509-14-8	Methane, tetranitro- (R)
P118	75-70-7	Methanethiol, trichloro-
P198	23422-53-9	Methanimidamide, N,N-dimethyl-N'-[3-[[(methylamino)-carbonyl]oxy]phenyl]-, monohydrochloride.
P197	17702-57-7	Methanimidamide, N,N-dimethyl-N'-[2-methyl-4-[[(methylamino)carbonyl]oxy]phenyl]-
P050	115-29-7	6,9-Methano-2,4,3-benzodioxathiepin, 6,7,8,9,10,10- hexachloro-1,5,5a,6,9,9a-hexahydro-, 3-oxide
P059	76-44-8	4,7-Methano-1H-indene, 1,4,5,6,7,8,8-heptachloro- 3a,4,7,7a-tetrahydro-
P199	2032-65-7	Methiocarb.
P066	16752-77-5	Methomyl
P068	60-34-4	Methyl hydrazine
P064	624-83-9	Methyl isocyanate
P069	75-86-5	2-Methyllactonitrile
P071	298-00-0	Methyl parathion

P190	1129-41-5	Metolcarb.
P128	315-18-4	Mexacarbate.
P072	86-88-4	alpha-Naphthylthiourea
P073	13463-39-3	Nickel carbonyl
P073	13463-39-3	Nickel carbonyl $Ni(CO)_4$, (T-4)-
P074	557-19-7	Nickel cyanide
P074	557-19-7	Nickel cyanide $Ni(CN)_2$
P075	[1]54-11-5	Nicotine, & salts
P076	10102-43-9	Nitric oxide
P077	100-01-6	p-Nitroaniline
P078	10102-44-0	Nitrogen dioxide
P076	10102-43-9	Nitrogen oxide NO
P078	10102-44-0	Nitrogen oxide NO_2
P081	55-63-0	Nitroglycerine (R)
P082	62-75-9	N-Nitrosodimethylamine
P084	4549-40-0	N-Nitrosomethylvinylamine
P085	152-16-9	Octamethylpyrophosphoramide
P087	20816-12-0	Osmium oxide OsO_4, (T-4)-
P087	20816-12-0	Osmium tetroxide
P088	145-73-3	7-Oxabicyclo[2.2.1]heptane-2,3-dicarboxylic acid
P194	23135-22-0	Oxamyl.
P089	56-38-2	Parathion
P034	131-89-5	Phenol, 2-cyclohexyl-4,6-dinitro-
P128	315-18-4	Phenol, 4-(dimethylamino)-3,5-dimethyl-, methylcarbamate (ester).
P199	2032-65-7	Phenol, (3,5-dimethyl-4-(methylthio)-, methylcarbamate
P048	51-28-5	Phenol, 2,4-dinitro-
P047	[1]534-52-1	Phenol, 2-methyl-4,6-dinitro-, & salts
P202	64-00-6	Phenol, 3-(1-methylethyl)-, methyl carbamate.
P201	2631-37-0	Phenol, 3-methyl-5-(1-methylethyl)-, methyl carbamate.
P020	88-85-7	Phenol, 2-(1-methylpropyl)-4,6-dinitro-
P009	131-74-8	Phenol, 2,4,6-trinitro-, ammonium salt (R)
P092	62-38-4	Phenylmercury acetate
P093	103-85-5	Phenylthiourea
P094	298-02-2	Phorate
P095	75-44-5	Phosgene
P096	7803-51-2	Phosphine

P041	311-45-5	Phosphoric acid, diethyl 4-nitrophenyl ester
P039	298-04-4	Phosphorodithioic acid, O,O-diethyl S-[2-(ethylthio)ethyl] ester
P094	298-02-2	Phosphorodithioic acid, O,O-diethyl S-[(ethylthio)methyl] ester
P044	60-51-5	Phosphorodithioic acid, O,O-dimethyl S-[2-(methylamino)-2-oxoethyl] ester
P043	55-91-4	Phosphorofluoridic acid, bis(1-methylethyl) ester
P089	56-38-2	Phosphorothioic acid, O,O-diethyl O-(4-nitrophenyl) ester
P040	297-97-2	Phosphorothioic acid, O,O-diethyl O-pyrazinyl ester
P097	52-85-7	Phosphorothioic acid, O-[4-[(dimethylamino)sulfonyl]phenyl] O,O-dimethyl ester
P071	298-00-0	Phosphorothioic acid, O,O,-dimethyl O-(4-nitrophenyl) ester
P204	57-47-6	Physostigmine.
P188	57-64-7	Physostigmine salicylate.
P110	78-00-2	Plumbane, tetraethyl-
P098	151-50-8	Potassium cyanide
P098	151-50-8	Potassium cyanide K(CN)
P099	506-61-6	Potassium silver cyanide
P201	2631-37-0	Promecarb
P203	1646-88-4	Propanal, 2-methyl-2-(methyl-sulfonyl)-, O-[(methylamino)carbonyl] oxime.
P070	116-06-3	Propanal, 2-methyl-2-(methylthio)-, O-[(methylamino)carbonyl]oxime
P101	107-12-0	Propanenitrile
P027	542-76-7	Propanenitrile, 3-chloro-
P069	75-86-5	Propanenitrile, 2-hydroxy-2-methyl-
P081	55-63-0	1,2,3-Propanetriol, trinitrate (R)
P017	598-31-2	2-Propanone, 1-bromo-
P102	107-19-7	Propargyl alcohol
P003	107-02-8	2-Propenal
P005	107-18-6	2-Propen-1-ol
P067	75-55-8	1,2-Propylenimine
P102	107-19-7	2-Propyn-1-ol
P008	504-24-5	4-Pyridinamine
P075	154-11-5	Pyridine, 3-(1-methyl-2-pyrrolidinyl)-, (S)-, & salts
P204	57-47-6	Pyrrolo[2,3-b]indol-5-ol, 1,2,3,3a,8,8a-hexahydro-1,3a,8-trimethyl-, methylcarbamate (ester), (3aS-cis)-.
P114	12039-52-0	Selenious acid, dithallium(1+) salt
P103	630-10-4	Selenourea
P104	506-64-9	Silver cyanide
P104	506-64-9	Silver cyanide Ag(CN)

P105	26628-22-8	Sodium azide
P106	143-33-9	Sodium cyanide
P106	143-33-9	Sodium cyanide Na(CN)
P108	157-24-9	Strychnidin-10-one, & salts
P018	357-57-3	Strychnidin-10-one, 2,3-dimethoxy-
P108	157-24-9	Strychnine, & salts
P115	7446-18-6	Sulfuric acid, dithallium(1+) salt
P109	3689-24-5	Tetraethyldithiopyrophosphate
P110	78-00-2	Tetraethyl lead
P111	107-49-3	Tetraethyl pyrophosphate
P112	509-14-8	Tetranitromethane (R)
P062	757-58-4	Tetraphosphoric acid, hexaethyl ester
P113	1314-32-5	Thallic oxide
P113	1314-32-5	Thallium oxide Tl_2O_3
P114	12039-52-0	Thallium(I) selenite
P115	7446-18-6	Thallium(I) sulfate
P109	3689-24-5	Thiodiphosphoric acid, tetraethyl ester
P045	39196-18-4	Thiofanox
P049	541-53-7	Thioimidodicarbonic diamide $[(H_2N)C(S)]_2NH$
P014	108-98-5	Thiophenol
P116	79-19-6	Thiosemicarbazide
P026	5344-82-1	Thiourea, (2-chlorophenyl)-
P072	86-88-4	Thiourea, 1-naphthalenyl-
P093	103-85-5	Thiourea, phenyl-
P185	26419-73-8	Tirpate.
P123	8001-35-2	Toxaphene
P118	75-70-7	Trichloromethanethiol
P119	7803-55-6	Vanadic acid, ammonium salt
P120	1314-62-1	Vanadium oxide V_2O_5
P120	1314-62-1	Vanadium pentoxide
P084	4549-40-0	Vinylamine, N-methyl-N-nitroso-
P001	181-81-2	Warfarin, & salts, when present at concentrations greater than 0.3%
P205	137-30-4	Zinc, bis(dimethylcarbamodithioato-S,S')-,
P121	557-21-1	Zinc cyanide
P121	557-21-1	Zinc cyanide $Zn(CN)_2$
P122	1314-84-7	Zinc phosphide Zn_3P_2, when present at concentrations greater than 10% (R,T)

P205	137-30-4	Ziram.

FOOTNOTE: [1]CAS Number given for parent compound only.

6. The commercial chemical products, manufacturing chemical intermediates, or off-specification commercial chemical products referred to in parts 1 through 4 of this subparagraph, are identified as toxic wastes (T), unless otherwise designated and are subject to the small quantity generator exclusion defined in parts (1)(e) 1 and 7 of this rule.

(Comment: For the convenience of the regulated community, the primary hazardous properties of these materials have been indicated by the letters T (Toxicity), R (Reactivity), I (Ignitability) and C (Corrosivity). Absence of a letter indicates that the compound is only listed for toxicity.)

These wastes and their corresponding Hazardous Waste Codes are:

Hazardous Waste No.	Chemical Abstracts No.	Substance
U394	30558-43-1	A2213.
U001	75-07-0	Acetaldehyde (I)
U034	75-87-6	Acetaldehyde, trichloro-
U187	62-44-2	Acetamide, N-(4-ethoxyphenyl)-
U005	53-96-3	Acetamide, N-9H-fluoren-2-yl-
U240	194-75-7	Acetic acid, (2,4-dichlorophenoxy)-, salts & esters
U112	141-78-6	Acetic acid, ethyl ester (I)
U144	301-04-2	Acetic acid, lead(2+) salt
U214	563-68-8	Acetic acid, thallium(1+) salt
see F027	93-76-5	Acetic acid, (2,4,5-trichlorophenoxy)-
U002	67-64-1	Acetone (I)
U003	75-05-8	Acetonitrile (I,T)
U004	98-86-2	Acetophenone
U005	53-96-3	2-Acetylaminofluorene
U006	75-36-5	Acetyl chloride (C,R,T)
U007	79-06-1	Acrylamide
U008	79-10-7	Acrylic acid (I)
U009	107-13-1	Acrylonitrile
U011	61-82-5	Amitrole
U012	62-53-3	Aniline (I,T)
U136	75-60-5	Arsinic acid, dimethyl-
U014	492-80-8	Auramine
U015	115-02-6	Azaserine

U010	50-07-7	Azirino[2',3':3,4]pyrrolo[1,2-a]indole-4,7-dione, 6-amino-8-[[(aminocarbonyl)oxy]methyl]-1,1a,2,8,8a,8b-hexahydro-8a-methoxy-5-methyl-, [1aS-(1aalpha, 8beta,8aalpha,8balpha)]-
U280	101-27-9	Barban.
U278	22781-23-3	Bendiocarb.
U364	22961-82-6	Bendiocarb phenol.
U271	17804-35-2	Benomyl.
U157	56-49-5	Benz[j]aceanthrylene, 1,2-dihydro-3-methyl-
U016	225-51-4	Benz[c]acridine
U017	98-87-3	Benzal chloride
U192	23950-58-5	Benzamide, 3,5-dichloro-N-(1,1-dimethyl-2-propynyl)-
U018	56-55-3	Benz[a]anthracene
U094	57-97-6	Benz[a]anthracene, 7,12-dimethyl-
U012	62-53-3	Benzenamine (I,T)
U014	492-80-8	Benzenamine, 4,4'-carbonimidoylbis[N,N-dimethyl-
U049	3165-93-3	Benzenamine, 4-chloro-2-methyl-, hydrochloride
U093	60-11-7	Benzenamine, N,N-dimethyl-4-(phenylazo)-
U328	95-53-4	Benzenamine, 2-methyl-
U353	106-49-0	Benzenamine, 4-methyl-
U158	101-14-4	Benzenamine, 4,4'-methylenebis[2-chloro-
U222	636-21-5	Benzenamine, 2-methyl-, hydrochloride
U181	99-55-8	Benzenamine, 2-methyl-5-nitro-
U019	71-43-2	Benzene (I,T)
U038	510-15-6	Benzeneacetic acid, 4-chloro-alpha-(4-chlorophenyl)-alpha-hydroxy-, ethyl ester
U030	101-55-3	Benzene, 1-bromo-4-phenoxy-
U035	305-03-3	Benzenebutanoic acid, 4-[bis(2-chloroethyl)amino]-
U037	108-90-7	Benzene, chloro-
U221	25376-45-8	Benzenediamine, ar-methyl-
U028	117-81-7	1,2-Benzenedicarboxylic acid, bis(2-ethylhexyl) ester
U069	84-74-2	1,2-Benzenedicarboxylic acid, dibutyl ester
U088	84-66-2	1,2-Benzenedicarboxylic acid, diethyl ester
U102	131-11-3	1,2-Benzenedicarboxylic acid, dimethyl ester
U107	117-84-0	1,2-Benzenedicarboxylic acid, dioctyl ester
U070	95-50-1	Benzene, 1,2-dichloro-
U071	541-73-1	Benzene, 1,3-dichloro-
U072	106-46-7	Benzene, 1,4-dichloro-
U060	72-54-8	Benzene, 1,1'-(2,2-dichloroethylidene)bis[4-chloro-

U017	98-87-3	Benzene, (dichloromethyl)-
U223	26471-62-5	Benzene, 1,3-diisocyanatomethyl- (R,T)
U239	1330-20-7	Benzene, dimethyl- (I,~~T~~)
U201	108-46-3	1,3-Benzenediol
U127	118-74-1	Benzene, hexachloro-
U056	110-82-7	Benzene, hexahydro- (I)
U220	108-88-3	Benzene, methyl-
U105	121-14-2	Benzene, 1-methyl-2,4-dinitro-
U106	606-20-2	Benzene, 2-methyl-1,3-dinitro-
U055	98-82-8	Benzene, (1-methylethyl)- (I)
U169	98-95-3	Benzene, nitro-
U183	608-93-5	Benzene, pentachloro-
U185	82-68-8	Benzene, pentachloronitro-
U020	98-09-9	Benzenesulfonic acid chloride (C,R)
U020	98-09-9	Benzenesulfonyl chloride (C,R)
U207	95-94-3	Benzene, 1,2,4,5-tetrachloro-
U061	50-29-3	Benzene, 1,1'-(2,2,2-trichloroethylidene)bis[4-chloro-
U247	72-43-5	Benzene, 1,1'-(2,2,2-trichloroethylidene)bis[4- methoxy-
U023	98-07-7	Benzene, (trichloromethyl)-
U234	99-35-4	Benzene, 1,3,5-trinitro-
U021	92-87-5	Benzidine
U202	[1]81-07-2	1,2-Benzisothiazol-3(2H)-one, 1,1-dioxide, & salts
U278	22781-23-3	1,3-Benzodioxol-4-ol, 2,2-dimethyl-, methyl carbamate.
U364	22961-82-6	1,3-Benzodioxol-4-ol, 2,2-dimethyl-,
U203	94-59-7	1,3-Benzodioxole, 5-(2-propenyl)-
U141	120-58-1	1,3-Benzodioxole, 5-(1-propenyl)-
U090	94-58-6	1,3-Benzodioxole, 5-propyl-
U367	1563-38-8	7-Benzofuranol, 2,3-dihydro-2,2-dimethyl-
U064	189-55-9	Benzo[rst]pentaphene
U248	[1]81-81-2	2H-1-Benzopyran-2-one, 4-hydroxy-3-(3-oxo-1-phenylbutyl)-, & salts, when present at concentrations of 0.3% or less
U022	50-32-8	Benzo[a]pyrene
U197	106-51-4	p-Benzoquinone
U023	98-07-7	Benzotrichloride (C,R,T)
U085	1464-53-5	2,2'-Bioxirane
U021	92-87-5	[1,1'-Biphenyl]-4,4'-diamine

U073	91-94-1	[1,1'-Biphenyl]-4,4'-diamine, 3,3'-dichloro-
U091	119-90-4	[1,1'-Biphenyl]-4,4'-diamine, 3,3'-dimethoxy-
U095	119-93-7	[1,1'-Biphenyl]-4,4'-diamine, 3,3'-dimethyl-
U225	75-25-2	Bromoform
U030	101-55-3	4-Bromophenyl phenyl ether
U128	87-68-3	1,3-Butadiene, 1,1,2,3,4,4-hexachloro-
U172	924-16-3	1-Butanamine, N-butyl-N-nitroso-
U031	71-36-3	1-Butanol (I)
U159	78-93-3	2-Butanone (I,T)
U160	1338-23-4	2-Butanone peroxide (R,T)
U053	4170-30-3	2-Butenal
U074	764-41-0	2-Butene, 1,4-dichloro- (I,T)
U143	303-34-4	2-Butenoic acid, 2-methyl-, 7-[[2,3-dihydroxy- 2-(1-methoxyethyl)-3-methyl-1-oxobutoxy]methyl]- 2,3,5,7a-tetrahydro-1H-pyrrolizin-1-yl ester, [1S-[1alpha(Z),7(2S*,3R*),7aalpha]]-
U031	71-36-3	n-Butyl alcohol (I)
U136	75-60-5	Cacodylic acid
U032	13765-19-0	Calcium chromate
U372	10605-21-7	Carbamic acid, 1H-benzimidazol-2-yl, methyl ester.
U271	17804-35-2	Carbamic acid, [1-[(butylamino)carbonyl]-1H-benzimidazol-2- yl]-, methyl ester.
U280	101-27-9	Carbamic acid, (3-chlorophenyl)-, 4-chloro-2-butynyl ester.
U238	51-79-6	Carbamic acid, ethyl ester
U178	615-53-2	Carbamic acid, methylnitroso-, ethyl ester
U373	122-42-9	Carbamic acid, phenyl-, 1-methylethyl ester.
U409	23564-05-8	Carbamic acid, [1,2-phenylenebis (iminocarbonothioyl)]bis-, dimethyl ester.
U097	79-44-7	Carbamic chloride, dimethyl-
U114	1111-54-6	Carbamodithioic acid, 1,2-ethanediylbis-, salts & esters
U062	2303-16-4	Carbamothioic acid, bis(1-methylethyl)-, S-(2,3-dichloro-2-propenyl) ester
U389	2303-17-5	Carbamothioic acid, bis(1-methylethyl)-, S-(2,3,3-trichloro-2-propenyl) ester.
U387	52888-80-9	Carbamothioic acid, dipropyl-, S-(phenylmethyl) ester.
U279	63-25-2	Carbaryl.
U372	10605-21-7	Carbendazim.
U367	1563-38-8	Carbofuran phenol.
U215	6533-73-9	Carbonic acid, dithallium(1+) salt
U033	353-50-4	Carbonic difluoride
U156	79-22-1	Carbonochloridic acid, methyl ester (I,T)
U033	353-50-4	Carbon oxyfluoride (R,T)

U211	56-23-5	Carbon tetrachloride
U034	75-87-6	Chloral
U035	305-03-3	Chlorambucil
U036	57-74-9	Chlordane, alpha & gamma isomers
U026	494-03-1	Chlornaphazin
U037	108-90-7	Chlorobenzene
U038	510-15-6	Chlorobenzilate
U039	59-50-7	p-Chloro-m-cresol
U042	110-75-8	2-Chloroethyl vinyl ether
U044	67-66-3	Chloroform
U046	107-30-2	Chloromethyl methyl ether
U047	91-58-7	beta-Chloronaphthalene
U048	95-57-8	o-Chlorophenol
U049	3165-93-3	4-Chloro-o-toluidine, hydrochloride
U032	13765-19-0	Chromic acid H_2CrO_4, calcium salt
U050	218-01-9	Chrysene
U051		Creosote
U052	1319-77-3	Cresol (Cresylic acid)
U053	4170-30-3	Crotonaldehyde
U055	98-82-8	Cumene (I)
U246	506-68-3	Cyanogen bromide (CN)Br
U197	106-51-4	2,5-Cyclohexadiene-1,4-dione
U056	110-82-7	Cyclohexane (I)
U129	58-89-9	Cyclohexane, 1,2,3,4,5,6-hexachloro-, (1alpha,2alpha,3beta,4alpha,5alpha,6beta)-
U057	108-94-1	Cyclohexanone (I)
U130	77-47-4	1,3-Cyclopentadiene, 1,2,3,4,5,5-hexachloro-
U058	50-18-0	Cyclophosphamide
U240	194-75-7	2,4-D, salts & esters
U059	20830-81-3	Daunomycin
U060	72-54-8	DDD
U061	50-29-3	DDT
U062	2303-16-4	Diallate
U063	53-70-3	Dibenz[a,h]anthracene
U064	189-55-9	Dibenzo[a,i]pyrene
U066	96-12-8	1,2-Dibromo-3-chloropropane
U069	84-74-2	Dibutyl phthalate

U070	95-50-1	o-Dichlorobenzene
U071	541-73-1	m-Dichlorobenzene
U072	106-46-7	p-Dichlorobenzene
U073	91-94-1	3,3'-Dichlorobenzidine
U074	764-41-0	1,4-Dichloro-2-butene (I,T)
U075	75-71-8	Dichlorodifluoromethane
U078	75-35-4	1,1-Dichloroethylene
U079	156-60-5	1,2-Dichloroethylene
U025	111-44-4	Dichloroethyl ether
U027	108-60-1	Dichloroisopropyl ether
U024	111-91-1	Dichloromethoxy ethane
U081	120-83-2	2,4-Dichlorophenol
U082	87-65-0	2,6-Dichlorophenol
U084	542-75-6	1,3-Dichloropropene
U085	1464-53-5	1,2:3,4-Diepoxybutane (I,T)
U395	5952-26-1	Diethylene glycol, dicarbamate.
U108	123-91-1	1,4-Diethyleneoxide
U028	117-81-7	Diethylhexyl phthalate
U086	1615-80-1	N,N'-Diethylhydrazine
U087	3288-58-2	O,O-Diethyl S-methyl dithiophosphate
U088	84-66-2	Diethyl phthalate
U089	56-53-1	Diethylstilbesterol
U090	94-58-6	Dihydrosafrole
U091	119-90-4	3,3'-Dimethoxybenzidine
U092	124-40-3	Dimethylamine (I)
U093	60-11-7	p-Dimethylaminoazobenzene
U094	57-97-6	7,12-Dimethylbenz[a]anthracene
U095	119-93-7	3,3'-Dimethylbenzidine
U096	80-15-9	alpha,alpha-Dimethylbenzylhydroperoxide (R)
U097	79-44-7	Dimethylcarbamoyl chloride
U098	57-14-7	1,1-Dimethylhydrazine
U099	540-73-8	1,2-Dimethylhydrazine
U101	105-67-9	2,4-Dimethylphenol
U102	131-11-3	Dimethyl phthalate
U103	77-78-1	Dimethyl sulfate
U105	121-14-2	2,4-Dinitrotoluene

U106	606-20-2	2,6-Dinitrotoluene
U107	117-84-0	Di-n-octyl phthalate
U108	123-91-1	1,4-Dioxane
U109	122-66-7	1,2-Diphenylhydrazine
U110	142-84-7	Dipropylamine (I)
U111	621-64-7	Di-n-propylnitrosamine
U041	106-89-8	Epichlorohydrin
U001	75-07-0	Ethanal (I)
U174	55-18-5	Ethanamine, N-ethyl-N-nitroso-
U404	121-44-8	Ethanamine, N,N-diethyl-
U155	91-80-5	1,2-Ethanediamine, N,N-dimethyl-N'-2-pyridinyl-N'-(2-thienylmethyl)-
U067	106-93-4	Ethane, 1,2-dibromo-
U076	75-34-3	Ethane, 1,1-dichloro-
U077	107-06-2	Ethane, 1,2-dichloro-
U131	67-72-1	Ethane, hexachloro-
U024	111-91-1	Ethane, 1,1'-[methylenebis(oxy)]bis[2-chloro-
U117	60-29-7	Ethane, 1,1'-oxybis-(I)
U025	111-44-4	Ethane, 1,1'-oxybis[2-chloro-
U184	76-01-7	Ethane, pentachloro-
U208	630-20-6	Ethane, 1,1,1,2-tetrachloro-
U209	79-34-5	Ethane, 1,1,2,2-tetrachloro-
U218	62-55-5	Ethanethioamide
U226	71-55-6	Ethane, 1,1,1-trichloro-
U227	79-00-5	Ethane, 1,1,2-trichloro-
U410	59669-26-0	Ethanimidothioic acid, N,N'- [thiobis[(methylimino)carbonyloxy]]bis-, dimethyl ester
U394	30558-43-1	Ethanimidothioic acid, 2-(dimethylamino)-N-hydroxy-2-oxo-, methyl ester.
U359	110-80-5	Ethanol, 2-ethoxy-
U173	1116-54-7	Ethanol, 2,2'-(nitrosoimino)bis-
U395	5952-26-1	Ethanol, 2,2'-oxybis-, dicarbamate.
U004	98-86-2	Ethanone, 1-phenyl-
U043	75-01-4	Ethene, chloro-
U042	110-75-8	Ethene, (2-chloroethoxy)-
U078	75-35-4	Ethene, 1,1-dichloro-
U079	156-60-5	Ethene, 1,2-dichloro-, (E)-
U210	127-18-4	Ethene, tetrachloro-
U228	79-01-6	Ethene, trichloro-

U112	141-78-6	Ethyl acetate (I)
U113	140-88-5	Ethyl acrylate (I)
U238	51-79-6	Ethyl carbamate (urethane)
U117	60-29-7	Ethyl ether (I)
U114	[1]111-54-6	Ethylenebisdithiocarbamic acid, salts & esters
U067	106-93-4	Ethylene dibromide
U077	107-06-2	Ethylene dichloride
U359	110-80-5	Ethylene glycol monoethyl ether
U115	75-21-8	Ethylene oxide (I,T)
U116	96-45-7	Ethylenethiourea
U076	75-34-3	Ethylidene dichloride
U118	97-63-2	Ethyl methacrylate
U119	62-50-0	Ethyl methanesulfonate
U120	206-44-0	Fluoranthene
U122	50-00-0	Formaldehyde
U123	64-18-6	Formic acid (C,T)
U124	110-00-9	Furan (I)
U125	98-01-1	2-Furancarboxaldehyde (I)
U147	108-31-6	2,5-Furandione
U213	109-99-9	Furan, tetrahydro-(I)
U125	98-01-1	Furfural (I)
U124	110-00-9	Furfuran (I)
U206	18883-66-4	Glucopyranose, 2-deoxy-2-(3-methyl-3-nitrosoureido)-, D-
U206	18883-66-4	D-Glucose, 2-deoxy-2-[[(methylnitrosoamino)- carbonyl]amino]-
U126	765-34-4	Glycidylaldehyde
U163	70-25-7	Guanidine, N-methyl-N'-nitro-N-nitroso-
U127	118-74-1	Hexachlorobenzene
U128	87-68-3	Hexachlorobutadiene
U130	77-47-4	Hexachlorocyclopentadiene
U131	67-72-1	Hexachloroethane
U132	70-30-4	Hexachlorophene
U243	1888-71-7	Hexachloropropene
U133	302-01-2	Hydrazine (R,T)
U086	1615-80-1	Hydrazine, 1,2-diethyl-
U098	57-14-7	Hydrazine, 1,1-dimethyl-
U099	540-73-8	Hydrazine, 1,2-dimethyl-

U109	122-66-7	Hydrazine, 1,2-diphenyl-
U134	7664-39-3	Hydrofluoric acid (C,T)
U134	7664-39-3	Hydrogen fluoride (C,T)
U135	7783-06-4	Hydrogen sulfide
U135	7783-06-4	Hydrogen sulfide H_2S
U096	80-15-9	Hydroperoxide, 1-methyl-1-phenylethyl- (R)
U116	96-45-7	2-Imidazolidinethione
U137	193-39-5	Indeno[1,2,3-cd]pyrene
U190	85-44-9	1,3-Isobenzofurandione
U140	78-83-1	Isobutyl alcohol (I,T)
U141	120-58-1	Isosafrole
U142	143-50-0	Kepone
U143	303-34-4	Lasiocarpine
U144	301-04-2	Lead acetate
U146	1335-32-6	Lead, bis(acetato-O)tetrahydroxytri-
U145	7446-27-7	Lead phosphate
U146	1335-32-6	Lead subacetate
U129	58-89-9	Lindane
U163	70-25-7	MNNG
U147	108-31-6	Maleic anhydride
U148	123-33-1	Maleic hydrazide
U149	109-77-3	Malononitrile
U150	148-82-3	Melphalan
U151	7439-97-6	Mercury
U152	126-98-7	Methacrylonitrile (I, T)
U092	124-40-3	Methanamine, N-methyl- (I)
U029	74-83-9	Methane, bromo-
U045	74-87-3	Methane, chloro- (I, T)
U046	107-30-2	Methane, chloromethoxy-
U068	74-95-3	Methane, dibromo-
U080	75-09-2	Methane, dichloro-
U075	75-71-8	Methane, dichlorodifluoro-
U138	74-88-4	Methane, iodo-
U119	62-50-0	Methanesulfonic acid, ethyl ester
U211	56-23-5	Methane, tetrachloro-
U153	74-93-1	Methanethiol (I, T)

U225	75-25-2	Methane, tribromo-
U044	67-66-3	Methane, trichloro-
U121	75-69-4	Methane, trichlorofluoro-
U036	57-74-9	4,7-Methano-1H-indene, 1,2,4,5,6,7,8,8-octachloro-2,3,3a,4,7,7a-hexahydro-
U154	67-56-1	Methanol (I)
U155	91-80-5	Methapyrilene
U142	143-50-0	1,3,4-Metheno-2H-cyclobuta[cd]pentalen-2-one, 1,1a,3,3a,4,5,5,5a,5b,6-decachlorooctahydro-
U247	72-43-5	Methoxychlor
U154	67-56-1	Methyl alcohol (I)
U029	74-83-9	Methyl bromide
U186	504-60-9	1-Methylbutadiene (I)
U045	74-87-3	Methyl chloride (I,T)
U156	79-22-1	Methyl chlorocarbonate (I,T)
U226	71-55-6	Methyl chloroform
U157	56-49-5	3-Methylcholanthrene
U158	101-14-4	4,4'-Methylenebis(2-chloroaniline)
U068	74-95-3	Methylene bromide
U080	75-09-2	Methylene chloride
U159	78-93-3	Methyl ethyl ketone (MEK) (I,T)
U160	1338-23-4	Methyl ethyl ketone peroxide (R,T)
U138	74-88-4	Methyl iodide
U161	108-10-1	Methyl isobutyl ketone (I)
U162	80-62-6	Methyl methacrylate (I,T)
U161	108-10-1	4-Methyl-2-pentanone (I)
U164	56-04-2	Methylthiouracil
U010	50-07-7	Mitomycin C
U059	20830-81-3	5,12-Naphthacenedione, 8-acetyl-10-[(3-amino-2,3,6-trideoxy)-alpha-L-lyxo-hexopyranosyl)oxy]-7,8,9,10-tetrahydro-6,8,11-trihydroxy-1-methoxy-, (8S-cis)-
U167	134-32-7	1-Naphthalenamine
U168	91-59-8	2-Naphthalenamine
U026	494-03-1	Naphthalenamine, N,N'-bis(2-chloroethyl)-
U165	91-20-3	Naphthalene
U047	91-58-7	Naphthalene, 2-chloro-
U166	130-15-4	1,4-Naphthalenedione
U236	72-57-1	2,7-Naphthalenedisulfonic acid, 3,3'-[(3,3'- dimethyl[1,1'-biphenyl]-4,4'-diyl)bis(azo)bis[5-amino-4-hydroxy]-, tetrasodium salt

U279	63-25-2	1-Naphthalenol, methylcarbamate.
U166	130-15-4	1,4-Naphthoquinone
U167	134-32-7	alpha-Naphthylamine
U168	91-59-8	beta-Naphthylamine
U217	10102-45-1	Nitric acid, thallium(1+) salt
U169	98-95-3	Nitrobenzene (I,T)
U170	100-02-7	p-Nitrophenol
U171	79-46-9	2-Nitropropane (I,T)
U172	924-16-3	N-Nitrosodi-n-butylamine
U173	1116-54-7	N-Nitrosodiethanolamine
U174	55-18-5	N-Nitrosodiethylamine
U176	759-73-9	N-Nitroso-N-ethylurea
U177	684-93-5	N-Nitroso-N-methylurea
U178	615-53-2	N-Nitroso-N-methylurethane
U179	100-75-4	N-Nitrosopiperidine
U180	930-55-2	N-Nitrosopyrrolidine
U181	99-55-8	5-Nitro-o-toluidine
U193	1120-71-4	1,2-Oxathiolane, 2,2-dioxide
U058	50-18-0	2H-1,3,2-Oxazaphosphorin-2-amine, N,N-bis(2-chloroethyl)tetrahydro-, 2-oxide
U115	75-21-8	Oxirane (I,T)
U126	765-34-4	Oxiranecarboxyaldehyde
U041	106-89-8	Oxirane, (chloromethyl)-
U182	123-63-7	Paraldehyde
U183	608-93-5	Pentachlorobenzene
U184	76-01-7	Pentachloroethane
U185	82-68-8	Pentachloronitrobenzene (PCNB)
See F027	87-86-5	Pentachlorophenol
U161	108-10-1	Pentanol, 4-methyl-
U186	504-60-9	1,3-Pentadiene (I)
U187	62-44-2	Phenacetin
U188	108-95-2	Phenol
U048	95-57-8	Phenol, 2-chloro-
U039	59-50-7	Phenol, 4-chloro-3-methyl-
U081	120-83-2	Phenol, 2,4-dichloro-
U082	87-65-0	Phenol, 2,6-dichloro-
U089	56-53-1	Phenol, 4,4'-(1,2-diethyl-1,2-ethenediyl)bis-, (E)-

U101	105-67-9	Phenol, 2,4-dimethyl-
U052	1319-77-3	Phenol, methyl-
U132	70-30-4	Phenol, 2,2'-methylenebis[3,4,6-trichloro-
U411	114-26-1	Phenol, 2-(1-methylethoxy)-, methylcarbamate.
U170	100-02-7	Phenol, 4-nitro-
See F027	87-86-5	Phenol, pentachloro-
See F027	58-90-2	Phenol, 2,3,4,6-tetrachloro-
See F027	95-95-4	Phenol, 2,4,5-trichloro-
See F027	88-06-2	Phenol, 2,4,6-trichloro-
U150	148-82-3	L-Phenylalanine, 4-[bis(2-chloroethyl)amino]-
U145	7446-27-7	Phosphoric acid, lead(2+) salt (2:3)
U087	3288-58-2	Phosphorodithioic acid, O,O-diethyl S-methyl ester
U189	1314-80-3	Phosphorus sulfide (R)
U190	85-44-9	Phthalic anhydride
U191	109-06-8	2-Picoline
U179	100-75-4	Piperidine, 1-nitroso-
U192	23950-58-5	Pronamide
U194	107-10-8	1-Propanamine (I,T)
U111	621-64-7	1-Propanamine, N-nitroso-N-propyl-
U110	142-84-7	1-Propanamine, N-propyl- (I)
U066	96-12-8	Propane, 1,2-dibromo-3-chloro-
U083	78-87-5	Propane, 1,2-dichloro-
U149	109-77-3	Propanedinitrile
U171	79-46-9	Propane, 2-nitro- (I,T)
U027	108-60-1	Propane, 2,2'-oxybis[2-chloro-
U193	1120-71-4	1,3-Propane sultone
See F027	93-72-1	Propanoic acid, 2-(2,4,5-trichlorophenoxy)-
U235	126-72-7	1-Propanol, 2,3-dibromo-, phosphate (3:1)
U140	78-83-1	1-Propanol, 2-methyl- (I,T)
U002	67-64-1	2-Propanone (I)
U007	79-06-1	2-Propenamide
U084	542-75-6	1-Propene, 1,3-dichloro-
U243	1888-71-7	1-Propene, 1,1,2,3,3,3-hexachloro-
U009	107-13-1	2-Propenenitrile
U152	126-98-7	2-Propenenitrile, 2-methyl- (I,T)
U008	79-10-7	2-Propenoic acid (I)

U113	140-88-5	2-Propenoic acid, ethyl ester (I)
U118	97-63-2	2-Propenoic acid, 2-methyl-, ethyl ester
U162	80-62-6	2-Propenoic acid, 2-methyl-, methyl ester (I,T)
U373	122-42-9	Propham.
U411	114-26-1	Propoxur.
U194	107-10-8	n-Propylamine (I,T)
U083	78-87-5	Propylene dichloride
U387	52888-80-9	Prosulfocarb.
U148	123-33-1	3,6-Pyridazinedione, 1,2-dihydro-
U196	110-86-1	Pyridine
U191	109-06-8	Pyridine, 2-methyl-
U237	66-75-1	2,4-(1H,3H)-Pyrimidinedione, 5-[bis(2- chloroethyl)amino]-
U164	56-04-2	4(1H)-Pyrimidinone, 2,3-dihydro-6-methyl-2-thioxo-
U180	930-55-2	Pyrrolidine, 1-nitroso-
U200	50-55-5	Reserpine
U201	108-46-3	Resorcinol
U202	181-07-2	Saccharin, & salts
U203	94-59-7	Safrole
U204	7783-00-8	Selenious acid
U204	7783-00-8	Selenium dioxide
U205	7488-56-4	Selenium sulfide
U205	7488-56-4	Selenium sulfide SeS_2 (R,T)
U015	115-02-6	L-Serine, diazoacetate (ester)
See F027	93-72-1	Silvex (2,4,5-TP)
U206	18883-66-4	Streptozotocin
U103	77-78-1	Sulfuric acid, dimethyl ester
U189	1314-80-3	Sulfur phosphide (R)
See F027	93-76-5	2,4,5-T
U207	95-94-3	1,2,4,5-Tetrachlorobenzene
U208	630-20-6	1,1,1,2-Tetrachloroethane
U209	79-34-5	1,1,2,2-Tetrachloroethane
U210	127-18-4	Tetrachloroethylene
See F027	58-90-2	2,3,4,6-Tetrachlorophenol
U213	109-99-9	Tetrahydrofuran (I)
U214	563-68-8	Thallium(I) acetate
U215	6533-73-9	Thallium(I) carbonate

U216	7791-12-0	Thallium(I) chloride
U216	7791-12-0	Thallium chloride TlCl
U217	10102-45-1	Thallium(I) nitrate
U218	62-55-5	Thioacetamide
U410	59669-26-0	Thiodicarb.
U153	74-93-1	Thiomethanol (I,T)
U244	137-26-8	Thioperoxydicarbonic diamide $[(H_2N)C(S)]_2S_2$, tetramethyl-
U409	23564-05-8	Thiophanate-methyl.
U219	62-56-6	Thiourea
U244	137-26-8	Thiram
U220	108-88-3	Toluene
U221	25376-45-8	Toluenediamine
U223	26471-62-5	Toluene diisocyanate (R,T)
U328	95-53-4	o-Toluidine
U353	106-49-0	p-Toluidine
U222	636-21-5	o-Toluidine hydrochloride
U389	2303-17-5	Triallate.
U011	61-82-5	1H-1,2,4-Triazol-3-amine
U227	79-00-5	1,1,2-Trichloroethane
U228	79-01-6	Trichloroethylene
U121	75-69-4	Trichloromonofluoromethane
See F027	95-95-4	2,4,5-Trichlorophenol
See F027	88-06-2	2,4,6-Trichlorophenol
U404	121-44-8	Triethylamine.
U234	99-35-4	1,3,5-Trinitrobenzene (R,T)
U182	123-63-7	1,3,5-Trioxane, 2,4,6-trimethyl-
U235	126-72-7	Tris(2,3-dibromopropyl) phosphate
U236	72-57-1	Trypan blue
U237	66-75-1	Uracil mustard
U176	759-73-9	Urea, N-ethyl-N-nitroso-
U177	684-93-5	Urea, N-methyl-N-nitroso-
U043	75-01-4	Vinyl chloride
U248	181-81-2	Warfarin, & salts, when present at concentrations of 0.3% or less
U239	1330-20-7	Xylene (I)
U200	50-55-5	Yohimban-16-carboxylic acid, 11,17-dimethoxy-18-[(3,4,5-trimethoxybenzoyl)oxy]-, methyl ester, (3beta,16beta,17alpha,18beta,20alpha)-

U249	1314-84-7	Zinc phosphide Zn_3P_2, when present at concentrations of 10% or less

FOOTNOTE: [1]CAS Number given for parent compound only.

(e) (RESERVED) [40 CFR 261.34]

(f) Deletion of Certain Hazardous Waste Codes Following Equipment Cleaning and Replacement [40 CFR 261.35]

1. Wastes from wood preserving processes at plants that do not resume or initiate use of chlorophenolic preservatives will not meet the listing definition of F032 once the generator has met all of the requirements of parts 2 and 3 of this subparagraph. These wastes may, however, continue to meet another hazardous waste listing description or may exhibit one or more of the hazardous waste characteristics.

2. Generators must either clean or replace all process equipment that may have come into contact with chlorophenolic formulations or constituents thereof, including, but not limited to, treatment cylinders, sumps, tanks, piping systems, drip pads, fork lifts, and trams, in a manner that minimizes or eliminates the escape of hazardous waste or constituents, leachate, contaminated drippage, or hazardous waste decomposition products to the ground water, surface water, or atmosphere.

(i) Generators shall do one of the following:

(I) Prepare and follow an equipment cleaning plan and clean equipment in accordance with this part;

(II) Prepare and follow an equipment replacement plan and replace equipment in accordance with this part; or

(III) Document cleaning and replacement in accordance with this part, carried out after termination of use of chlorophenolic preservations.

(ii) Cleaning Requirements:

(I) Prepare and sign a written equipment cleaning plan that describes:

I. The equipment to be cleaned;

II. How the equipment will be cleaned;

III. The solvent to be used in cleaning;

IV. How solvent rinses will be tested; and

V. How cleaning residues will be disposed.

(II) Equipment must be cleaned as follows:

I. Remove all visible residues from process equipment;

II. Rinse process equipment with an appropriate solvent until dioxins and dibenzofurans are not detected in the final solvent rinse.

(III) Analytical requirements:

I. Rinses must be tested by using an appropriate method;

II. "Not detected" means at or below the following lower method calibration limits (MCLs): The 2, 3, 7, 8-TCDD-based MCL- -0.01 parts per trillion (ppt), sample weight of 1000 g, IS spiking level of 1 ppt, final extraction volume of 10-50 µL. For other congeners- -multiply the values by 1 for TCDF/PeCDD/PeCDF, by 2.5 for HxCDD/HxCDF/HpCDD/HpCDF, and by 5 for OCDD/OCDF.

(IV) The generator must manage all residues from the cleaning process as F032 waste.

(iii) Replacement requirements:

(I) Prepare and sign a written equipment replacement plan that describes:

I. The equipment to be replaced;

II. How the equipment will be replaced; and

III. How the equipment will be disposed.

(II) The generator must manage the discarded equipment as F032 waste.

(iv) Documentation requirements:

(I) Document that previous equipment cleaning and/or replacement was performed in accordance with this part and occurred after cessation of use of chlorophenolic preservatives.

3. The generator must maintain the following records documenting the cleaning and replacement as part of the facility's operating record:

(i) The name and address of the facility;

(ii) Formulations previously used and the date on which their use ceased in each process at the plant;

(iii) Formulations currently used in each process at the plant;

(iv) The equipment cleaning or replacement plan;

(v) The name and address of any persons who conducted the cleaning and replacement;

(vi) The dates on which cleaning and replacement were accomplished;

(vii) The dates of sampling and testing;

(viii) A description of the sample handling and preparation techniques, including techniques used for extraction, containerization, preservation, and chain-of-custody of the samples;

(ix) A description of the tests performed, the date the tests were performed, and the results of the tests;

(x) The name and model numbers of the instrument(s) used in performing the tests;

(xi) QA/QC documentation; and

(xii) The following statement signed by the generator or his authorized representative:

"I certify under penalty of law that all process equipment required to be cleaned or replaced under Rule ~~1200-01-11-.02~~ 0400-12-01-.02(4)(f) was cleaned or replaced as represented in the equipment cleaning and replacement plan and accompanying documentation. I am aware that there are significant penalties for providing false information, including the possibility of fine or imprisonment."

(g) (RESERVED) [40 CFR 261.36]

(h) (RESERVED) [40 CFR 261.37]

(5) Appendices to Rule ~~1200-01-11-.02~~ 0400-12-01-.02 [Appendices to 40 CFR 261]

Appendix I -- Representative Sampling Methods

The methods and equipment used for sampling waste materials will vary with the form and consistency of the waste materials to be sampled. Samples collected using the sampling protocols listed below, for sampling waste with properties similar to the indicated materials, will be considered by the Department to be representative of the waste.

Extremely viscous liquid -- ASTM Standard D140-70 Crushed or powdered material -- ASTM Standard D346-75 Soil or rock-like material -- ASTM Standard D420-69 Soil-like material -- ASTM Standard D1452-65

Fly Ash-like material -- ASTM Standard D2234-76 (ASTM Standards are available from ASTM, 1916 Race St., Philadelphia, PA 19103)

Containerized liquid waste -- "COLIWASA"

Liquid waste in pits, ponds, lagoons, and similar reservoirs -- "Pond Sampler"

SW-846 also contains additional information on the application of these protocols.

Appendix II – (RESERVED)

Appendix III – (RESERVED)

Appendix IV -- (RESERVED) - Radioactive Waste Test Methods

Appendix V -- (RESERVED) - Infectious Waste Treatment Specifications

Appendix VI -- (RESERVED) - Etiologic Agents

Appendix VII -- Basis for Listing Hazardous Waste

Hazardous Waste Code	Hazardous Constituents for Which Listed
F001	Tetrachloroethylene, methylene chloride trichloroethylene, 1,1,1-trichloroethane, carbon tetrachloride, chlorinated fluorocarbons.
F002	Tetrachloroethylene, methylene chloride, trichloroethylene, 1,1,1-trichloroethane, 1,1,2-trichloroethane, chlorobenzene, 1,1,2-trichloro-1,2,2-trifluoroethane, ortho-dichlorobenzene, trichlorofluoromethane.
F003	N.A.
F004	Cresols and cresylic acid, nitrobenzene.

F005	Toluene, methyl ethyl ketone, carbon disulfide, isobutanol, pyridine, 2-ethoxyethanol, benzene, 2-nitropropane.
F006	Cadmium, hexavalent chromium, nickel, cyanide (complexed).
F007	Cyanide (salts).
F008	Cyanide (salts).
F009	Cyanide (salts).
F010	Cyanide (salts).
F011	Cyanide (salts).
F012	Cyanide (complexed).
F019	Hexavalent chromium, cyanide (complexed).
F020	Tetra- and pentachlorodibenzo-p-dioxins; tetra and pentachlorodi-benzofurans; tri- and tetrachlorophenols and their chlorophenoxy derivative acids, esters, ethers, amine and other salts.
F021	Penta- and hexachlorodibenzo-p-dioxins; penta- and hexachlorodibenzofurans; pentachlorophenol and its derivatives.
F022	Tetra-, penta-, and hexachlorodibenzo-p-dioxins; tetra-, penta-, and hexachlorodibenzofurans.
F023	Tetra-, and pentachlorodibenzo-p-dioxins; tetra- and pentachlorodibenzofurans; tri- and tetrachlorophenols and their chlorophenoxy derivative acids, esters, ethers, amine and other salts.
F024	Chloromethane, dichloromethane, trichloromethane, carbon tetrachloride, chloroethylene, 1,1-dichloroethane, 1,2-dichloroethane, trans-1-2-dichloroethylene, 1,1-dichloroethylene, 1,1,1-trichloroethane, 1,1,2-trichloroethane, trichloroethylene, 1,1,1,2-tetra-chloroethane, 1,1,2,2-tetrachloroethane, tetrachloroethylene, pentachloroethane, hexachloroethane, allyl chloride (3-chloropropene), dichloropropane, dichloropropene, 2-chloro-1,3-butadiene, hexachloro-1,3-butadiene, hexachlorocyclopentadiene, hexachlorocyclohexane, benzene, chlorbenzene, dichlorobenzenes, 1,2,4-trichlorobenzene, tetrachlorobenzene, pentachlorobenzene, hexachlorobenzene, toluene, naphthalene.
F025	Chloromethane; Dichloromethane; Trichloromethane; Carbon tetrachloride; Chloroethylene; 1,1-Dichloroethane; 1,2-Dichloroethane; trans-1,2-Dichloroethylene; 1,1-Dichloroethylene; 1,1,1-Trichloroethane; 1,1,2-Trichloroethane; Trichloroethylene; 1,1,1,2-Tetrachloroethane; 1,1,2,2-Tetrachloroethane; Tetrachloroethylene; Pentachloroethane; Hexachloroethane; Allyl chloride (3-Chloropropene); Dichloropropane; Dichloropropene; 2-Chloro-1,3-butadiene; Hexachloro-1,3-butadiene; Hexachlorocyclopentadiene; Benzene; Chlorobenzene; Dichlorobenzene; 1,2,4-Trichlorobenzene; Tetrachlorobenzene; Pentachlorobenzene; Hexachlorobenzene; Toluene; Naphthalene.
F026	Tetra-, penta-, and hexachlorodibenzo-p-dioxins; tetra-, penta-, and hexachlorodibenzofurans.
F027	Tetra-, penta-, and hexachlorodibenzo-p-dioxins; tetra-, penta-, and hexachlorodibenzofurans; tri-, tetra-, and pentachlorophenols and their chlorophenoxy derivative acids, esters, ethers, amine and other salts.
F028	Tetra-, penta-, and hexachlorodibenzo-p-dioxins; tetra-, penta-, and hexachlorodibenzofurans; tri-, tetra-, and pentachlorophenols and their chlorophenoxy derivative acids, esters, ethers, amine and other salts.

F032	Benz(a)anthracene, benzo(a)pyrene, dibenz(a,h)-anthracene,indeno(1,2,3-cd)pyrene, pentachlorophenol, arsenic, chromium, tetra-, penta-, hexa-, heptachlorodibenzo-p-dioxins, tetra-, penta-, hexa-, heptachlorodibenzofurans.
F034	Benz(a)anthracene, benzo(k)fluoranthene, benzo(a)pyrene, dibenz(a,h)anthracene, indeno(1,2,3-cd)pyrene, naphthalene, arsenic, chromium.
F035	Arsenic, chromium, lead.
F037	Benzene, benzo(a)pyrene, chrysene, lead, chromium.
F038	Benzene, benzo(a)pyrene, chrysene, lead, chromium.
F039	All constituents for which treatment standards are specified for multi-source leachate (wastewaters and nonwastewaters) under 40 CFR 268.43, Table CCW.
K001	Pentachlorophenol, phenol, 2-chlorophenol, p-chloro-m-cresol, 2,4-dimethylphenyl, 2,4-dinitrophenol, trichlorophenols, tetrachlorophenols, 2,4-dinitrophenol, creosote, chrysene, naphthalene, fluoranthene, benzo(b)fluoranthene, benzo(a)pyrene, indeno(1,2,3-cd)pyrene, benz(a)anthracene, dibenz(a)anthracene, acenaphthalene.
K002	Hexavalent chromium, lead
K003	Hexavalent chromium, lead.
K004	Hexavalent chromium.
K005	Hexavalent chromium, lead.
K006	Hexavalent chromium.
K007	Cyanide (complexed), hexavalent chromium.
K008	Hexavalent chromium.
K009	Chloroform, formaldehyde, methylene chloride, methyl chloride, paraldehyde, formic acid.
K010	Chloroform, formaldehyde, methylene chloride, methyl chloride, paraldehyde, formic acid, chloroacetaldehyde.
K011	Acrylonitrile, acetonitrile, hydrocyanic acid.
K013	Hydrocyanic acid, acrylonitrile, acetonitrile.
K014	Acetonitrile, acrylamide.
K015	Benzyl chloride, chlorobenzene, toluene, benzotrichloride.
K016	Hexachlorobenzene, hexachlorobutadiene, carbon tetrachloride, hexachloroethane, perchloroethylene.
K017	Epichlorohydrin, chloroethers [bis(chloromethyl) ether and bis (2-chloroethyl) ethers], trichloropropane, dichloropropanols.
K018	1,2-dichloroethane, trichloroethylene, hexachlorobutadiene, hexachlorobenzene.
K019	Ethylene dichloride, 1,1,1-trichloroethane, 1,1,2-trichloroethane, tetrachloroethanes (1,1,2,2-tetrachloroethane and 1,1,1,2-tetrachloroethane), trichloroethylene, tetrachloroethylene, carbon tetrachloride, chloroform, vinyl chloride, vinylidene chloride.
K020	Ethylene dichloride, 1,1,1-trichloroethane, 1,1,2-trichloroethane, tetrachloroethanes (1,1,2,2-tetrachloroethane and 1,1,1,2-tetrachloroethane), trichloroethylene, tetrachloroethylene, carbon tetrachloride, chloroform, vinyl chloride, vinylidene chloride.
K021	Antimony, carbon tetrachloride, chloroform.

K022	Phenol, tars (polycyclic aromatic hydrocarbons).
K023	Phthalic anhydride, maleic anhydride.
K024	Phthalic anhydride, 1,4-naphthoquinone.
K025	Meta-dinitrobenzene, 2,4-dinitrotoluene.
K026	Paraldehyde, pyridines, 2-picoline.
K027	Toluene diisocyanate, toluene-2, 4-diamine.
K028	1,1,1-trichloroethane, vinyl chloride.
K029	1,2-dichloroethane, 1,1,1-trichloroethane, vinyl chloride, vinylidene chloride, chloroform.
K030	Hexachlorobenzene, hexachlorobutadiene, hexachloroethane, 1,1,1,2-tetrachloroethane, 1,1,2,2-tetrachloroethane, ethylene dichloride.
K031	Arsenic.
K032	Hexachlorocyclopentadiene.
K033	Hexachlorocyclopentadiene.
K034	Hexachlorocyclopentadiene.
K035	Creosote, chrysene, naphthalene, fluoranthene benzo(b) fluoranthene, benzo(a)pyrene, indeno(1,2,3-cd) pyrene, benzo(a)anthracene, dibenzo(a)anthracene, acenaphthalene.
K036	Toluene, phosphorodithioic and phosphorothioic acid esters.
K037	Toluene, phosphorodithioic and phosphorothioic acid esters.
K038	Phorate, formaldehyde, phosphorodithioic and phosphorothioic acid esters.
K039	Phosphorodithioic and phosphorothioic acid esters.
K040	Phorate, formaldehyde, phosphorodithioic and phosphorothioic acid esters.
K041	Toxaphene.
K042	Hexachlorobenzene, ortho-dichlorobenzene.
K043	2,4-dichlorophenol, 2,6-dichlorophenol, 2,4,6-trichlorophenol.
K044	N.A.
K045	N.A.
K046	Lead.
K047	N.A.
K048	Hexavalent chromium, lead.
K049	Hexavalent chromium, lead.
K050	Hexavalent chromium.
K051	Hexavalent chromium, lead.
K052	Lead.
K060	Cyanide, napthalene, phenolic compounds, arsenic.
K061	Hexavalent chromium, lead, cadmium.
K062	Hexavalent chromium, lead.

K069	Hexavalent chromium, lead, cadmium.
K071	Mercury.
K073	Chloroform, carbon tetrachloride, hexachloroethane, trichloroethane, tetrachloroethylene, dichloroethylene, 1,1,2,2-tetrachloroethane.
K083	Aniline, diphenylamine, nitrobenzene, phenylenediamine.
K084	Arsenic.
K085	Benzene, dichlorobenzenes, trichlorobenzenes, tetrachlorobenzenes, pentachlorobenzene, hexachlorobenzene, benzyl chloride.
K086	Lead, hexavalent chromium.
K087	Phenol, naphthalene.
K088	Cyanide (complexes).
K093	Phthalic anhydride, maleic anhydride.
K094	Phthalic anhydride.
K095	1,1,2-trichloroethane, 1,1,1,2-tetrachloroethane, 1,1,2,2-tetrachloroethane.
K096	1,2-dichloroethane, 1,1,1-trichloroethane, 1,1,2-trichloroethane.
K097	Chlordane, heptachlor.
K098	Toxaphene.
K099	2,4-dichlorophenol, 2,4,6-trichlorophenol.
K100	Hexavalent chromium, lead, cadmium.
K101	Arsenic.
K102	Arsenic.
K103	Aniline, nitrobenzene, phenylenediamine.
K104	Aniline, benzene, diphenylamine, nitrobenzene, phenylenediamine.
K105	Benzene, monochlorobenzene, dichlorobenzenes, 2,4,6-trichlorophenol.
K106	Mercury.
K107	1,1-Dimethylhydrazine (UDMH).
K108	1,1-Dimethylhydrazine (UDMH).
K109	1,1-Dimethylhydrazine (UDMH).
K110	1,1-Dimethylhydrazine (UDMH).
K111	2,4-Dinitrotoluene.
K112	2,4-Toluenediamine, o-toluidine, p-toluidine, aniline.
K113	2,4-Toluenediamine, o-toluidine, p-toluidine, aniline.
K114	2,4-Toluenediamine, o-toluidine, p-toluidine.
K115	2,4-Toluenediamine.
K116	Carbon tetrachloride, tetrachloroethylene, chloroform, phosgene.
K117	Ethylene dibromide.
K118	Ethylene dibromide.

K123	Ethylene thiourea.
K124	Ethylene thiourea.
K125	Ethylene thiourea.
K126	Ethylene thiourea.
K131	Dimethyl sulfate, methyl bromide.
K132	Methyl bromide.
K136	Ethylene dibromide.
K141	Benzene, benz(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, dibenz(a,h)anthracene, indeno(1,2,3-cd)pyrene.
K142	Benzene, benz(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, dibenz(a,h)anthracene, indeno(1,2,3-cd)pyrene.
K143	Benzene, benz(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene.
K144	Benzene, benz(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, dibenz(a,h)anthracene.
K145	Benzene, benz(a)anthracene, benzo(a)pyrene, dibenz(a,h)anthracene, naphthalene.
K147	Benzene, benz(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, dibenz(a,h)anthracene, indeno(1,2,3-cd)pyrene.
K148	Benz(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, dibenz(a,h)anthracene, indeno(1,2,3-cd)pyrene.
K149	Benzotrichloride, benzyl chloride, chloroform, chloromethane, chlorobenzene, 1,4-dichlorobenzene, hexachlorobenzene, pentachlorobenzene, 1,2,4,5-tetrachlorobenzene, toluene.
K150	Carbon tetrachloride, chloroform, chloromethane, 1,4-dichlorobenzene, hexachlorobenzene, pentachlorobenzene, 1,2,4,5-tetrachlorobenzene, 1,1,2,2-tetrachloroethane, tetrachloroethylene, 1,2,4-trichlorobenzene.
K151	Benzene, carbon tetrachloride, chloroform, hexachlorobenzene, pentachlorobenzene, toluene, 1,2,4,5-tetrachlorobenzene, tetrachloroethylene.
K156	Benomyl, carbaryl, carbendazim, carbofuran, carbosulfan, formaldehyde, methylene chloride, triethylamine.
K157	Carbon tetrachloride, formaldehyde, methyl chloride, methylene chloride, pyridine, triethylamine.
K158	Benomyl, carbendazim, carbofuran, carbosulfan, chloroform, methylene chloride.
K159	Benzene, butylate, eptc, molinate, pebulate, vernolate.
K161	Antimony, arsenic, metam-sodium, ziram.
K169	Benzene.
K170	Benzo(a)pyrene, dibenz(a,h)anthracene, benzo (a) anthracene, benzo (b)fluoranthene, benzo(k)fluoranthene, 3-methylcholanthrene, 7, 12-dimethylbenz(a)anthracene.
K171	Benzene, arsenic.
K172	Benzene, arsenic.

K174	1, 2, 3, 4, 6, 7, 8-Heptachlorodibenzo-p-dioxin (1, 2, 3, 4, 6, 7, 8-HpCDD), 1, 2, 3, 4, 6, 7, 8-Heptachlorodibenzofuran (1, 2, 3, 4, 6, 7, 8-HpCDF), 1, 2, 3, 4, 7, 8, 9-Heptachlorodibenzofuran (1, 2, 3, 6, 7, 8, 9-HpCDF), HxCDDs (All Hexachlorodibenzo-p-dioxins), HxCDFs (All Hexachlorodibenzofurans), PeCDDs (All Pentachlorodibenzo-p-dioxins), OCDD (1, 2, 3, 4, 6, 7, 8, 9-Octachlorodibenzo-p-dioxin, OCDF (1, 2, 3, 4, 6, 7, 8, 9-Octachlorodibenzofuran), PeCDFs (All Pentachlorodibenzofurans), TCDDs (All tetrachlorodi-benzo-p-dioxins), TCDFs (All tetrachlorodibenxofurans).
K175	Mercury
K176	Arsenic, Lead
K177	Antimony
K178	Thallium
K181	Aniline, o-anisidine, 4-chloroaniline, p-cresidine, 2, 4-dimethylaniline, 1, 2-phenylenediamine, 1, 3-phenylenediamine.

FOOTNOTE: N.A. -- Waste is hazardous because it fails the test for the characteristic of ignitability, corrosivity, or reactivity.

Appendix VIII -- Hazardous Constituents

Common Name	Chemical Abstracts Name	Chemical Abstracts No.	Hazardous Waste Code
A2213	Ethanimidothioic acid, 2- (dimethylamino) -N-hydroxy-2-oxo-, methyl ester	30558-43-1	U394
Acetonitrile	Same	75-05-8	U003
Acetophenone	Ethanone, 1-phenyl-	98-86-2	U004
2-Acetylaminefluarone	Acetamide, N-9H-fluoren-2-yl-	53-96-3	U005
Acetyl chloride	Same	75-36-5	U006
1-Acetyl-2-thiourea	Acetamide, N-(aminothioxomethyl)-	591-08-2	P002
Acrolein	2-Propenal	107-02-8	P003
Acrylamide	2-Propenamide	79-06-1	U007
Acrylonitrile	2-Propenenitrile	107-13-1	U009
Aflatoxins	Same	1402-68-2	
Aldicarb	Propanal, 2-methyl-2-(methylthio)-, O-[(methylamino)carbonyl]oxime	116-06-3	P070
Aldicarb sulfone	Propanal, 2-methyl-2- (methylsulfonyl) -, O-[(methylamino) carbonyl] oxime	1646-88-4	P203
Aldrin	1,4,5,8-Dimethanonaphthalene, 1,2,3,4,10,10-10-hexachloro-1,4,4a,5,8,8a-hexahydro-, (1alpha,4alpha,4abeta,5alpha,8alpha, 8abeta)-	309-00-2	P004
Allyl alcohol	2-Propen-1-ol	107-18-6	P005
Allyl chloride	1-Propane, 3-chloro	107-05-1	
Aluminum phosphide	Same	20859-73-8	P006
4-Aminobiphenyl	[1,1'-Biphenyl]-4-amine	92-67-1	

5-(Aminomethyl)-3-isoxazolol	3(2H)-Isoxazolone, 5-(aminomethyl)-	2763-96-4	P007
4-Aminopyridine	4-Pyridinamine	504-24-5	P008
Amitrole	1H-1,2,4-Triazol-3-amine	61-82-5	U011
Ammonium vanadate	Vanadic acid, ammonium salt	7803-55-6	P119
Aniline	Benzenamine	62-53-3	U012
o-Anisidine (2-methoxyaniline)	Benzenamine, 2-Methoxy-	90-04-0	
Antimony	Benzenamine	7440-36-0	
Antimony compounds, N.O.S.[1]			
Aramite	Sulfurous acid, 2-chloroethyl 2-[4-(1,1-dimethylethyl)phenoxy]-1-methylethyl ester	140-57-8	
Arsenic	Same	7440-38-2	
Arsenic compounds, N.O.S.[1]			
Arsenic acid	Arsenic acid H_3AsO_4	7778-39-4	P010
Arsenic pentoxide	Arsenic oxide As_2O_5	1303-28-2	P011
Arsenic trioxide	Arsenic oxide As_2O_3	1327-53-3	P012
Auramine	Benzenamine, 4,4'-carbonimidoylbis[N,N-dimethyl	492-80-8	U014
Azaserine	L-Serine, diazoacetate (ester)	115-02-6	U015
Barban	Carbamic acid, (3-chlorophenyl) -, 4-chloro-2-butynyl ester	101-27-9	U280
Barium	Same	7440-39-3	
Barium compounds, N.O.S.[1]			
Barium cyanide	Same	542-62-1	P013
Bendiocarb	1,3-Benzodioxol-4-ol, 2,2-dimethyl-, methyl carbamate	22781-23-3	U278
Bendiocarb phenol	1,3-Benzodioxol-4-ol, 2,2-dimethyl-,	22961-82-6	U364
Benomyl	Carbamic acid, [1- [(butylamino) carbonyl]-1H-benzimidazol-2-yl] -, methyl ester	17804-35-2	U271
Benz[c]acridine	Same	225-51-4	U016
Benz[a]anthracene	Same	56-55-3	U018
Benzal chloride	Benzene, (dichloromethyl)-	98-87-3	U017
Benzene	Same	71-43-2	U019
Benzenearsonic acid	Arsonic acid, phenyl-	98-05-5	
Benzidine	[1,1'-Biphenyl]-4,4'-diamine	92-87-5	U021
Benzo[b]fluoranthene	Benz[e]acephenanthrylene	205-99-2	
Benzo[j]fluoranthene	Same	205-82-3	
Benzo(k)fluoranthene	Same	207-08-9	
Benzo[a]pyrene	Same	50-32-8	U022

p-Benzoquinone	2,5-Cyclohexadiene-1,4-dione	106-51-4	U197
Benzotrichloride	Benzene, (trichloromethyl)-	98-07-7	U023
Benzyl chloride	Benzene, (chloromethyl)-	100-44-7	P028
Beryllium powder	Same	7440-41-7	P015
Beryllium compounds, N.O.S.[1]			
Bis(pentamethylene)-thiuram tetrasulfide	Piperidine, 1,1'-(tetrathiodicarbonothioyl)-bis-	120-54-7	
Bromoacetone	2-Propanone, 1-bromo-	598-31-2	P017
Bromoform	Methane, tribromo-	75-25-2	U225
4-Bromophenyl phenyl ether	Benzene, 1-bromo-4-phenoxy-	101-55-3	U030
Brucine	Strychnidin-10-one, 2,3-dimethoxy-	357-57-3	P018
Butylate	Carbamothioic acid, bis(2-methylpropyl)-, S-ethyl ester	2008-41-5	
Butyl benzyl phthalate	1,2-Benzenedicarboxylic acid, butyl phenylmethyl ester	85-68-7	
Cacodylic acid	Arsinic acid, dimethyl-	75-60-5	U136
Cadmium	Same	7440-43-9	
Cadmium compounds, N.O.S.[1]			
Calcium chromate	Chromic acid H_2CrO_4, calcium salt	13765-19-0	U032
Calcium cyanide	Calcium cyanide $Ca(CN)_2$	592-01-8	P021
Carbaryl	1-Naphthalenol, methylcarbamate	63-25-2	U279
Carbendazim	Carbamic acid, 1H-benzimidazol-2-yl, methyl ester	10605-21-7	U372
Carbofuran	7-Benzofuranol, 2,3-dihydro-2,2-dimethyl-, methylcarbamate	1563-66-2	P127
Carbofuran phenol	7-Benzofuranol, 2,3-dihydro-2,2-dimethyl-	1563-38-8	U367
Carbon disulfide	Same	75-15-0	P022
Carbon oxyfluoride	Carbonic difluoride	353-50-4	U033
Carbon tetrachloride	Methane, tetrachloro-	56-23-5	U211
Carbosulfan	Carbamic acid, [(dibutylamino) thio] methyl-, 2,3-dihydro-2,2-dimethyl-7-benzofuranyl ester	55285-14-8	P189
Chloral	Acetaldehyde, trichloro-	75-87-6	U034
Chlorambucil	Benzenebutanoic acid, 4-[bis(2-chloroethyl)amino]-	305-03-3	U035
Chlordane	4,7-Methano-1H-indene, 1,2,4,5,6,7,8,8-octachloro-2,3,3a,4,7,7a-hexahydro-	57-74-9	U036
Chlordane (alpha and gamma isomers)			U036
Chlorinated benzenes, N.O.S.[1]			
Chlorinated ethane, N.O.S.[1]			
Chlorinated fluorocarbons, N.O.S.[1]			

Chlorinated naphthalene, N.O.S.[1]			
Chlorinated phenol, N.O.S.[1]			
Chlornaphazin	Naphthalenamine, N,N'-bis(2-chloroethyl)-	494-03-1	U026
Chloroacetaldehyde	Acetaldehyde, chloro-	107-20-0	P023
Chloroalkyl ethers, N.O.S.[1]			
p-Chloroaniline	Benzenamine, 4-chloro-	106-47-8	P024
Chlorobenzene	Benzene, chloro-	108-90-7	U037
Chlorobenzilate	Benzeneacetic acid, 4-chloro-alpha-(4-chlorophenyl)-alpha-hydroxy-, ethyl ester	510-15-6	U038
p-Chloro-m-cresol	Phenol, 4-chloro-3-methyl-	59-50-7	U039
2-Chloroethyl vinyl ether	Ethene, (2-chloroethoxy)-	110-75-8	U042
Chloroform	Methane, trichloro-	67-66-3	U044
Chloromethyl methyl ether	Methane, chloromethoxy-	107-30-2	U046
beta-Chloronaphthalene	Naphthalene, 2-chloro-	91-58-7	U047
o-Chlorophenol	Phenol, 2-chloro-	95-57-8	U048
1-(o-Chlorophenyl)thiourea	Thiourea, (2-chlorophenyl)-	5344-82-1	P026
Chloroprene	1,3-Butadiene, 2-chloro-	126-99-8	
3-Chloropropionitrile	Propanenitrile, 3-chloro-	542-76-7	P027
Chromium	Same	7440-47-3	
Chromium compounds, N.O.S.[1]			
Chrysene	Same	218-01-9	U050
Citrus red No. 2	2-Naphthalenol, 1-[(2,5-dimethoxyphenyl)azo]-	6358-53-8	
Coal tar creosote	Same	8007-45-2	
Copper cyanide	Copper cyanide CuCN	544-92-3	P029
Copper dimethyldithiocarbamate	Copper, bis(dimethylcarbamodithioato-S,S')-,	137-29-1	
Creosote	Same		U051
p-Cresidine	2-Methoxy-5-methylbenzenamine	120-71-8	
Cresol (Cresylic acid)	Phenol, methyl-	1319-77-3	U052
Crotonaldehyde	2-Butenal	4170-30-3	U053
m-Cumenyl methylcarbamate	Phenol, 3-(methylethyl)-, methyl carbamate	64-00-6	P202
Cyanides (soluble salts and complexes) N.O.S.[1]			P030
Cyanogen	Ethanedinitrile	460-19-5	P031
Cyanogen bromide	Cyanogen bromide (CN)Br	506-68-3	U246
Cyanogen chloride	Cyanogen chloride (CN)Cl	506-77-4	P033

Cycasin	beta-D-Glucopyranoside, (methyl-ONN-azoxy)methyl	14901-08-7	
Cycolate	Carbamothioic acid, cyclohexylethyl-, S-ethyl ester	1134-23-2	
2-Cyclohexyl-4,6-dinitrophenol	Phenol, 2-cyclohexyl-4,6-dinitro-	131-89-5	P034
Cyclophosphamide	2H-1,3,2-Oxazaphosphorin-2-amine, N,N-bis(2-chloroethyl)tetrahydro-, 2-oxide	50-18-0	U058
2,4-D	Acetic acid, (2,4-dichlorophenoxy)-	94-75-7	U240
2,4-D, salts, esters			U240
Daunomycin	5,12-Naphthacenedione, 8-acetyl-10-[(3-amino-2,3,6-trideoxy-alpha-L-lyxo-hexopyranosyl)oxy]-7,8,9,10-tetrahydro-6,8,11-trihydroxy-1-methoxy-, (8S-cis)-	20830-81-3	U059
Dazomet	2H-1,3,5-thiadiazine-2-thione, tetrahydro-3,5-dimethyl	533-74-4	
DDD	Benzene, 1,1'-(2,2-dichloroethylidene)bis[4-chloro-	72-54-8	U060
DDE	Benzene, 1,1'-(dichloroethenylidene)bis[4-chloro-	72-55-9	
DDT	Benzene, 1,1'-(2,2,2-trichloroethylidene)bis[4-chloro-	50-29-3	U061
Diallate	Carbamothioic acid, bis(1-methylethyl)-, S-(2,3-dichloro-2-propenyl) ester	2303-16-4	U062
Dibenz[a,h]acridine	Same	226-36-8	
Dibenz[a,j]acridine	Same	224-42-0	
Dibenz[a,h]anthracene	Same	53-70-3	U063
7H-Dibenzo[c,g]carbazole	Same	194-59-2	
Dibenzo[a,e]pyrene	Naphtho[1,2,3,4-def]chrysene	192-65-4	
Dibenzo[a,h]pyrene	Dibenzo[b,def]chrysene	189-64-0	
Dibenzo[a,i]pyrene	Benzo[rst]pentaphene	189-55-9	U064
1,2-Dibromo-3-chloropropane	Propane, 1,2-dibromo-3-chloro-	96-12-8	U066
Dibutyl phthalate	1,2-Benzenedicarboxylic acid, dibutyl ester	84-74-2	U069
o-Dichlorobenzene	Benzene, 1,2-dichloro-	95-50-1	U070
m-Dichlorobenzene	Benzene, 1,3-dichloro-	541-73-1	U071
p-Dichlorobenzene	Benzene, 1,4-dichloro-	106-46-7	U072
Dichlorobenzene, N.O.S.[1]	Benzene, dichloro-	25321-22-6	
3,3'-Dichlorobenzidine	[1,1'-Biphenyl]-4,4'-diamine, 3,3'-dichloro-	91-94-1	U073
1,4-Dichloro-2-butene	2-Butene, 1,4-dichloro-	764-41-0	U074
Dichlorodifluoromethane	Methane, dichlorodifluoro-	75-71-8	U075
Dichloroethylene, N.O.S.[1]	Dichloroethylene	25323-30-2	
1,1-Dichloroethylene	Ethene, 1,1-dichloro-	75-35-4	U078
1,2-Dichloroethylene	Ethene, 1,2-dichloro-, (E)-	156-60-5	U079
Dichloroethyl ether	Ethane, 1,1'oxybis[2-chloro-	111-44-4	U025
Dichloroisopropyl ether	Propane, 2,2'-oxybis[2-chloro-	108-60-1	U027
Dichloromethoxy ethane	Ethane, 1,1'-[methylenebis(oxy)]bis[2-chloro-	111-91-1	U024

Dichloromethyl ether	Methane, oxybis[chloro-	542-88-1	P016
2,4-Dichlorophenol	Phenol, 2,4-dichloro-	120-83-2	U081
2,6-Dichlorophenol	Phenol, 2,6-dichloro-	87-65-0	U082
Dichlorophenylarsine	Arsonous dichloride, phenyl-	696-28-6	P036
Dichloropropane, N.O.S.[1]	Propane, dichloro-	26638-19-7	
Dichloropropanol, N.O.S.[1]	Propanol, dichloro-	26545-73-3	
Dichloropropene, N.O.S.[1]	1-Propene, dichloro-	26952-23-8	
1,3-Dichloropropene	1-Propene, 1,3-dichloro-	542-75-6	U084
Dieldrin	2,7:3,6-Dimethanonaphth[2,3-b]oxirene, 3,4,5,6,9,9-hexachloro-1a,2,2a,3,6,6a,7,7a-octahydro-, (1aalpha,2beta,2aalpha,3beta,6beta, 6aalpha,7beta,7aalpha)-	60-57-1	P037
1,2:3,4-Diepoxybutane	2,2'-Bioxirane	1464-53-5	U085
Diethylarsine	Arsine, diethyl-	692-42-2	P038
Diethylene glycol, dicarbamate	Ethanol, 2,2'-oxybis-, dicarbamate	5952-26-1	U395
1,4-Diethyleneoxide	1,4-Dioxane	123-91-1	U108
Diethylhexyl phthalate	1,2-Benzenedicarboxylic acid, bis(2-ethylhexyl) ester	117-81-7	U028
N,N'-Diethylhydrazine	Hydrazine, 1,2-diethyl-	1615-80-1	U086
O,O-Diethyl S-methyl dithiophosphate	Phosphorodithioic acid, O,O-diethyl S-methyl ester	3288-58-2	U087
Diethyl-p-nitrophenyl phosphate	Phosphoric acid, diethyl 4-nitrophenyl ester	311-45-5	P041
Diethyl phthalate	1,2-Benzenedicarboxylic acid, diethyl ester	84-66-2	U088
O,O-Diethyl O-pyrazinyl phosphorothioate	Phosphorothioic acid, O,O-diethyl O-pyrazinyl ester	297-97-2	P040
Diethylstilbesterol	Phenol, 4,4'-(1,2-diethyl-1,2-ethenediyl)bis-, (E)-	56-53-1	U089
Dihydrosafrole	1,3-Benzodioxole, 5-propyl-	94-58-6	U090
Diisopropylfluorophosphate (DFP)	Phosphorofluoridic acid, bis(1-methylethyl) ester	55-91-4	P043
Dimethoate	Phosphorodithioic acid, O,O-dimethyl S-[2-(methylamino)-2-oxoethyl] ester	60-51-5	P044
3,3'-Dimethoxybenzidine	[1,1'-Biphenyl]-4,4'-diamine, 3,3'-dimethoxy-	119-90-4	U091
p-Dimethylaminoazobenzene	Benzenamine, N,N-dimethyl-4-(phenylazo)-	60-11-7	U093
2, 4-Dimethylaniline (2, 4-xylidine)	Benzenamine, 2, 4-dimethyl-	95-68-1	
7,12-Dimethylbenz[a]anthracene	Benz[a]anthracene, 7,12-dimethyl-	57-97-6	U094
3,3'-Dimethylbenzidine	[1,1'-Biphenyl]-4,4'-diamine, 3,3'-dimethyl-	119-93-7	U095
Dimethylcarbamoyl chloride	Carbamic chloride, dimethyl-	79-44-7	U097
1,1-Dimethylhydrazine	Hydrazine, 1,1-dimethyl-	57-14-7	U098

1,2-Dimethylhydrazine	Hydrazine, 1,2-dimethyl-	540-73-8	U099
alpha,alpha-Dimethylphenethylamine	Benzeneethanamine, alpha,alpha-dimethyl-	122-09-8	P046
2,4-Dimethylphenol	Phenol, 2,4-dimethyl-	105-67-9	U101
Dimethyl phthalate	1,2-Benzenedicarboxylic acid, dimethyl ester	131-11-3	U102
Dimethyl sulfate	Sulfuric acid, dimethyl ester	77-78-1	U103
Dimetilan	Carbamic acid, dimethyl-, 1- [(dimethylamino) carbonyl]-5-methyl-1H-pyrazol-3-yl ester	644-64-4	P191
Dinitrobenzene, N.O.S.[1]	Benzene, dinitro-	25154-54-5	
4,6-Dinitro-o-cresol	Phenol, 2-methyl-4,6-dinitro-	534-52-1	P047
4,6-Dinitro-o-cresol salts			P047
2,4-Dinitrophenol	Phenol, 2,4-dinitro-	51-28-5	P048
2,4-Dinitrotoluene	Benzene, 1-methyl-2,4-dinitro-	121-14-2	U105
2,6-Dinitrotoluene	Benzene, 2-methyl-1,3-dinitro-	606-20-2	U106
Dinoseb	Phenol, 2-(1-methylpropyl)-4,6-dinitro-	88-85-7	P020
Di-n-octylphthalate	1,2-Benzenedicarboxylic acid, dioctyl ester	117-84-0	U017
Diphenylamine	Benzenamine, N-phenyl-	122-39-4	
1,2-Diphenylhydrazine	Hydrazine, 1,2-diphenyl-	122-66-7	U109
Di-n-propylnitrosamine	1-Propanamine, N-nitroso-N-propyl-	621-64-7	U111
Disulfiram	Thioperoxydicarbonic diamide, tetraethyl	97-77-8	
Disulfoton	Phosphorodithioic acid, O,O-diethyl S-[2-(ethylthio)ethyl] ester	298-04-4	P039
Dithiobiuret	Thioimidodicarbonic diamide $[(H_2N)C(S)]_2NH$	541-53-7	P049
Endosulfan	6,9-Methano-2,4,3-benzodioxathiepin, 6,7,8,9,10,10-hexachloro-1,5,5a,6,9,9a- hexahydro-, 3-oxide	115-29-7	P050
Endothall	7-Oxabicyclo[2.2.1]heptane-2,3-dicarboxylic acid	145-73-3	P088
Endrin	2,7:3,6-Dimethanonaphth[2,3-b]oxirene, 3,4,5,6,9,9-hexachloro-1a,2,2a,3,6,6a,7,7a-octahydro-,(1aalpha,2beta,2abeta,3alpha,6alpha, 6abeta,7beta,7aalpha)-	72-20-8	P051
Endrin metabolites			P051
Epichlorohydrin	Oxirane, (chloromethyl)-	106-89-8	U041
Epinephrine	1,2-Benzenediol, 4-[1-hydroxy-2-(methylamino)ethyl]-, (R)-	51-43-4	P042
EPTC	Carbamothioic acid, dipropyl-, S-ethyl ester	759-94-4	
Ethyl carbamate (urethane)	Carbamic acid, ethyl ester	51-79-6	U238
Ethyl cyanide	Propanenitrile	107-12-0	P101
Ethylenebisdithiocarbamic acid	Carbamodithioic acid, 1,2-ethanediylbis-	111-54-6	U114
Ethylenebisdithiocarbamic acid, salts and esters			U114

Ethylene dibromide	Ethane, 1,2-dibromo-	106-93-4	U067
Ethylene dichloride	Ethane, 1,2-dichloro-	107-06-2	U077
Ethylene glycol monoethyl ether	Ethanol, 2-ethoxy-	110-80-5	U359
Ethyleneimine	Aziridine	151-56-4	P054
Ethylene oxide	Oxirane	75-21-8	U115
Ethylenethiourea	2-Imidazolidinethione	96-45-7	U116
Ethylidene dichloride	Ethane, 1,1-dichloro-	75-34-3	U076
Ethyl methacrylate	2-Propenoic acid, 2-methyl-, ethyl ester	97-63-2	U118
Ethyl methanesulfonate	Methanesulfonic acid, ethyl ester	62-50-0	U119
Ethyl Ziram	Zinc, bis(diethylcarbamodithioato-S,S')-	14324-55-1	
Famphur	Phosphorothioic acid, O-[4-[(dimethylamino)sulfonyl]phenyl] O,O-dimethyl ester	52-85-7	P097
Ferbam	Iron, tris(dimethylcarbamodithioato-S,S')-	14484-64-1	
Fluoranthene	Same	206-44-0	U120
Fluorine	Same	7782-41-4	P056
Fluoroacetamide	Acetamide, 2-fluoro-	640-19-7	P057
Fluoroacetic acid, sodium salt	Acetic acid, fluoro-, sodium salt	62-74-8	P058
Formaldehyde	Same	50-00-0	U122
Formetanate hydrochloride	Methanimidamide, N,N-dimethyl-N'-[3-[[(methylamino) carbonyl]oxy]phenyl]-, monohydrochloride	23422-53-9	P198
Formic acid	Same	64-18-6	U123
Formparanate	Methanimidamide, N,N-dimethyl-N'-[2-methyl-4-[[(methylamino) carbonyl]oxy]phenyl]-.	17702-57-7	P197
Glycidylaldehyde	Oxiranecarboxyaldehyde	765-34-4	U126
Halomethanes, N.O.S.[1]			
Heptachlor	4,7-Methano-1H-indene, 1,4,5,6,7,8,8-heptachloro-3a,4,7,7a-tetrahydro-	76-44-8	P059
Heptachlor epoxide	2,5-Methano-2H-indeno[1,2-b]oxirene, 2,3,4,5,6,7,7-heptachloro-1a,1b,5,5a,6,6a-hexa- hydro-, (1aalpha,1bbeta,2alpha,5alpha, 5abeta,6beta,6aalpha)-	1024-57-3	
Heptachlor epoxide (alpha, beta, and gamma isomers)			
Heptachlorodibenzofurans.			
Heptachlorodibenzo-p-dioxins			
Hexachlorobenzene	Benzene, hexachloro-	118-74-1	U127
Hexachlorobutadiene	1,3-Butadiene, 1,1,2,3,4,4-hexachloro-	87-68-3	U128
Hexachlorocyclopentadiene	1,3-Cyclopentadiene, 1,2,3,4,5,5-hexachloro-	77-47-4	U130
Hexachlorodibenzo-p-dioxins			

Hexachlorodibenzofurans			
Hexachloroethane	Ethane, hexachloro-	67-72-1	U131
Hexachlorophene	Phenol, 2,2'-methylenebis[3,4,6-trichloro-	70-30-4	U132
Hexachloropropene	1-Propene, 1,1,2,3,3,3-hexachloro-	1888-71-7	U243
Hexaethyl tetraphosphate	Tetraphosphoric acid, hexaethyl ester	757-58-4	P062
Hydrazine	Same	302-01-2	U133
Hydrogen cyanide	Hydrocyanic acid	74-90-8	P063
Hydrogen fluoride	Hydrofluoric acid	7664-39-3	U134
Hydrogen sulfide	Hydrogen sulfide H_2S	7783-06-4	U135
Indeno[1,2,3-cd]pyrene	Same	193-39-5	U137
3-Iodo-2-propynyl n-butylcarbamate	Carbamic acid, butyl-, 3-iodo-2-propynyl ester	55406-53-6	
Isobutyl alcohol	1-Propanol, 2-methyl-	78-83-1	U140
Isodrin	1,4,5,8-Dimethanonaphthalene, 1,2,3,4,10,10-hexachloro-1,4,4a,5,8,8a-hexahydro-,(1alpha,4alpha,4abeta,5beta,8beta,-8abeta) -	465-73-6	P060
Isolan	Carbamic acid, dimethyl-, 3-methyl-1-(1-methylethyl)-1H-pyrazol-5-yl ester	119-38-0	P192
Isosafrole	1,3-Benzodioxole, 5-(1-propenyl)-	120-58-1	U141
Kepone	1,3,4-Metheno-2H-cyclobuta[cd]pentalen-2-one, 1,1a,3,3a,4,5,5,5a,5b,6-decachlorooctahydro-	143-50-0	U142
Lasiocarpine	2-Butenoic acid, 2-methyl-,7-[[2,3-dihydroxy-2-(1-methoxyethyl)-3-methyl-1 - oxobutoxy]methyl]-2,3,5,7a-tetrahydro-1H-pyrrolizin-1-yl ester, [1S-[1alpha(Z),7(2S*,3R*),7aalpha]]-	303-34-4	U143
Lead	Same	7439-92-1	
Lead compounds, N.O.S.[1]			
Lead acetate	Acetic acid, lead(2+) salt	301-04-2	U144
Lead phosphate	Phosphoric acid, lead(2+) salt (2:3)	7446-27-7	U145
Lead subacetate	Lead, bis(acetato-O)tetrahydroxytri-	1335-32-6	U146
Lindane	Cyclohexane, 1,2,3,4,5,6-hexachloro-, (1alpha,2alpha,3beta,4alpha,5alpha,6beta)-	58-89-9	U129
Maleic anhydride	2,5-Furandione	108-31-6	U147
Maleic hydrazide	3,6-Pyridazinedione, 1,2-dihydro-	123-33-1	U148
Malononitrile	Propanedinitrile	109-77-3	U149
Manganese dimethyldithiocarbamate	Manganese, bis(dimethylcarbamodithioato-S,S')-,	15339-36-3	P196
Melphalan	L-Phenylalanine, 4-[bis(2-chloroethyl)amino]-	148-82-3	U150
Mercury	Same	7439-97-6	U151
Mercury compounds, N.O.S.[1]			

Mercury fulminate	Fulminic acid, mercury(2+) salt	628-86-4	P065
Metam Sodium	Carbamodithioic acid, methyl-, monosodium salt	137-42-8	
Methacrylonitrile	2-Propenenitrile, 2-methyl-	126-98-7	U152
Methapyrilene	1,2-Ethanediamine, N,N-dimethyl-N'-2-pyridinyl-N'-(2-thienylmethyl)-	91-80-5	U155
Methiocarb	Phenol, (3,5-dimethyl-4-(methylthio)-, methylcarbamate	2032-65-7	P199
Methomyl	Ethanimidothioic acid, N-[[(methylamino)carbonyl]oxy]-, methyl ester	16752-77-5	P066
Methoxychlor	Benzene, 1,1'-(2,2,2-trichloroethylidene)bis[4-methoxy-	72-43-5	U247
Methyl bromide	Methane, bromo-	74-83-9	U029
Methyl chloride	Methane, chloro-	74-87-3	U045
Methyl chlorocarbonate	Carbonochloridic acid, methyl ester	79-22-1	U156
Methyl chloroform	Ethane, 1,1,1-trichloro-	71-55-6	U226
3-Methylcholanthrene	Benz[j]aceanthrylene, 1,2-dihydro-3-methyl-	56-49-5	U157
4,4'-Methylenebis (2-chloroaniline)	Benzenamine, 4,4'-methylenebis[2-chloro-	101-14-4	U158
Methylene bromide	Methane, dibromo-	74-95-3	U068
Methylene chloride	Methane, dichloro-	75-09-2	U080
Methyl ethyl ketone (MEK)	2-Butanone	78-93-3	U159
Methyl ethyl ketone peroxide	2-Butanone, peroxide	1338-23-4	U160
Methyl hydrazine	Hydrazine, methyl-	60-34-4	P068
Methyl iodide	Methane, iodo-	74-88-4	U138
Methyl isocyanate	Methane, isocyanato-	624-83-9	P064
2-Methyllactonitrile	Propanenitrile, 2-hydroxy-2-methyl-	75-86-5	P069
Methyl methacrylate	2-Propenoic acid, 2-methyl-, methyl ester	80-62-6	U162
Methyl methanesulfonate	Methanesulfonic acid, methyl ester	66-27-3	
Methyl parathion	Phosphorothioic acid, O,O-dimethyl O-(4-nitrophenyl) ester	298-00-0	P071
Methylthiouracil	4(1H)-Pyrimidinone, 2,3-dihydro-6-methyl-2-thioxo-	56-04-2	U164
Metolcarb	Carbamic acid, methyl-, 3-methylphenyl ester	1129-41-5	P190
Mexacarbate	Phenol, 4-(dimethylamino)-3,5-dimethyl-, methylcarbamate (ester)	315-18-4	P128
Mitomycin C	Azirino[2',3':3,4]pyrrolo[1,2-a]indole-4,7-dione, 6-amino-8-[[(aminocarbonyl)oxy]methyl]-1,1a,2,8,8a,8b-hexahydro-8a-methoxy-5- methyl-, [1aS-(1aalpha,8beta,8aalpha,8balpha)]-	50-07-7	U010
MNNG	Guanidine, N-methyl-N'-nitro-N-nitroso-	70-25-7	U163
Molinate	1H-Azepine-1-carbothioic acid, hexahydro-, S-ethyl ester	2212-67-1	
Mustard gas	Ethane, 1,1'-thiobis[2-chloro-	505-60-2	

Naphthalene	Same	91-20-3	U165
1,4-Naphthoquinone	1,4-Naphthalenedione	130-15-4	U166
alpha-Naphthylamine	1-Naphthalenamine	134-32-7	U167
beta-Naphthylamine	2-Naphthalenamine	91-59-8	U168
alpha-Naphthylthiourea	Thiourea, 1-naphthalenyl-	86-88-4	P072
Nickel	Same	7440-02-0	
Nickel compounds, N.O.S.[1]			
Nickel carbonyl	Nickel carbonyl $Ni(CO)_4$, (T-4)-	13463-39-3	P073
Nickel cyanide	Nickel cyanide $Ni(CN)_2$	557-19-7	P074
Nicotine	Pyridine, 3-(1-methyl-2-pyrrolidinyl)-, (S)-	54-11-5	P075
Nicotine salts			P075
Nitric oxide	Nitrogen oxide NO	10102-43-9	P076
p-Nitroaniline	Benzenamine, 4-nitro-	100-01-6	P077
Nitrobenzene	Benzene, nitro-	98-95-3	U169
Nitrogen dioxide	Nitrogen oxide NO_2	10102-44-0	P078
Nitrogen mustard	Ethanamine, 2-chloro-N-(2-chloroethyl)-N-methyl-	51-75-2	
Nitrogen mustard, hydrochloride salt			
Nitrogen mustard N-oxide	Ethanamine, 2-chloro-N-(2-chloroethyl)-N-methyl-, N-oxide	126-85-2	
Nitrogen mustard, N-oxide, hydrochloride salt			
Nitroglycerin	1,2,3-Propanetriol, trinitrate	55-63-0	P081
p-Nitrophenol	Phenol, 4-nitro-	100-02-7	U170
2-Nitropropane	Propane, 2-nitro-	79-46-9	U171
Nitrosamines, N.O.S.[1]		35576-91-1	
N-Nitrosodi-n-butylamine	1-Butanamine, N-butyl-N-nitroso-	924-16-3	U172
N-Nitrosodiethanolamine	Ethanol, 2,2'-(nitrosoimino)bis-	1116-54-7	U173
N-Nitrosodiethylamine	Ethanamine, N-ethyl-N-nitroso-	55-18-5	U174
N-Nitrosodimethylamine	Methanamine, N-methyl-N-nitroso-	62-75-9	P082
N-Nitroso-N-ethylurea	Urea, N-ethyl-N-nitroso-	759-73-9	U176
N-Nitrosomethylethylamine	Ethanamine, N-methyl-N-nitroso-	10595-95-6	
N-Nitroso-N-methylurea	Urea, N-methyl-N-nitroso-	684-93-5	U177
N-Nitroso-N-methylurethane	Carbamic acid, methylnitroso-, ethyl ester	615-53-2	U178
N-Nitrosomethylvinylamine	Vinylamine, N-methyl-N-nitroso-	4549-40-0	P084
N-Nitrosomorpholine	Morpholine, 4-nitroso-	59-89-2	
N-Nitrosonornicotine	Pyridine, 3-(1-nitroso-2-pyrrolidinyl)-, (S)-	16543-55-8	

N-Nitrosopiperidine	Piperidine, 1-nitroso-	100-75-4	U179
N-Nitrosopyrrolidine	Pyrrolidine, 1-nitroso-	930-55-2	U180
N-Nitrososarcosine	Glycine, N-methyl-N-nitroso-	13256-22-9	
5-Nitro-o-toluidine	Benzenamine, 2-methyl-5-nitro-	99-55-8	U181
Octachlorodibenzo-p-dioxin (OCDD)	1, 2, 3, 4, 6, 7, 8, 9-Octachlorodibenzo-p-dioxin	3268-87-9	
Octachlorodibenzofuran (OCDF)	1, 2, 3, 4, 6, 7, 8, 9-Octachlorodibenofuran	39001-02-0	
Octamethylpyrophos-phoramide	Diphosphoramide, octamethyl-	152-16-9	P085
Osmium tetroxide	Osmium oxide OsO_4, (T-4)-	20816-12-0	P087
Oxamyl	Ethanimidothioc acid, 2-(dimethylamino)-N-[[(methylamino)carbonyl]-oxy]-2-oxo-, methyl ester	23135-22-0	P194
Paraldehyde	1,3,5-Trioxane, 2,4,6-trimethyl-	123-63-7	U182
Parathion	Phosphorothioic acid, O,O-diethyl O-(4-nitrophenyl) ester	56-38-2	P089
Pebulate	Carbamothioic acid, butylethyl-, S-propyl ester	1114-71-2	
Pentachlorobenzene	Benzene, pentachloro-	608-93-5	U183
Pentachlorodibenzo-p-dioxins			
Pentachlorodibenzofurans			
Pentachloroethane	Ethane, pentachloro-	76-01-7	U184
Pentachloronitrobenzene (PCNB)	Benzene, pentachloronitro-	82-68-8	U185
Pentachlorophenol	Phenol, pentachloro-	87-86-5	See F027
Phenacetin	Acetamide, N-(4-ethoxyphenyl)-	62-44-2	U187
Phenol	Same	108-95-2	U188
Phenylenediamine	Benzenediamine	25265-76-3	
1, 2-Phenylenediamine	1, 2-Benzenediamine	95-54-5	
1, 3-Phenylenediamine	1, 3-Benzenediamine	108-45-2	
Phenylmercury acetate	Mercury, (acetato-O)phenyl-	62-38-4	P092
Phenylthiourea	Thiourea, phenyl-	103-85-5	P093
Phosgene	Carbonic dichloride	75-44-5	P095
Phosphine	Same	7803-51-2	P096
Phorate	Phosphorodithioic acid, O,O-diethyl S-[(ethylthio)methyl] ester	298-02-2	P094
Phthalic acid esters, N.O.S.[1]			
Phthalic anhydride	1,3-Isobenzofurandione	85-44-9	U190

Physostigmine	Pyrrolo[2,3-b]indol-5-01, 1,2,3,3a,8,8a-hexahydro-1,3a,8-trimethyl-, methylcarbamate (ester), (3aS-cis)-	57-47-6	P204
Physostigmine salicylate	Benzoic acid, 2-hydroxy-, compd. with (3aS-cis) --1,2,3,3a,8,8a-hexahydro-1,3a,8-trimethylpyrrolo [2,3-b]indol-5-yl methylcarbamate ester (1:1)	57-64-7	P188
2-Picoline	Pyridine, 2-methyl-	109-06-8	U191
Polychlorinated biphenyls, N.O.S.[1]			
Potassium cyanide	Potassium cyanide K(CN)	151-50-8	P098
Potassium dimethyldithiocarbamate	Carbamodithioic acid, dimethyl, potassium salt	128-03-0	
Potassium n-hydroxymethyl-n-methyl-dithiocarbamate	Carbamodithioic acid, (hydroxymethyl)methyl-, monopotassium salt	51026-28-9	
Potassium n-methyldithiocarbamate	Carbamodithioic acid, methyl-monopotassium salt	137-41-7	
Potassium pentachlorophenate	Pentachlorophenol, potassium salt	7778736	None
Potassium silver cyanide	Argentate(1-), bis(cyano-C)-, potassium	506-61-6	P099
Promecarb	Phenol, 3-methyl-5-(1-methylethyl)-, methyl carbamate	2631-37-0	P201
Pronamide	Benzamide, 3,5-dichloro-N-(1,1-dimethyl-2-propynyl)-	23950-58-5	U192
1,3-Propane sultone	1,2-Oxathiolane, 2,2-dioxide	1120-71-4	U193
Propham	Carbamic acid, phenyl-, 1-methylethyl ester	122-42-9	U373
Propoxur	Phenol, 2-(1-methylethoxy)-, methylcarbamate	114-26-1	U411
n-Propylamine	1-Propanamine	107-10-8	U194
Propargyl alcohol	2-Propyn-1-ol	107-19-7	P102
Propylene dichloride	Propane, 1,2-dichloro-	78-87-5	U083
1,2-Propylenimine	Aziridine, 2-methyl-	75-55-8	P067
Propylthiouracil	4(1H)-Pyrimidinone, 2,3-dihydro-6-propyl-2-thioxo-	51-52-5	
Prosulfocarb	Carbamothioic acid, dipropyl-, S-(phenylmethyl) ester	52888-80-9	U387
Pyridine	Same	110-86-1	U196
Reserpine	Yohimban-16-carboxylic acid, 11,17-dimethoxy-18-[(3,4,5-trimethoxybenzoyl)oxy]-smethyl ester, (3beta,16beta,17alpha,18beta,20alpha)-	50-55-5	U200
Resorcinol	1,3-Benzenediol	108-46-3	U201
Saccharin	1,2-Benzisothiazol-3(2H)-one, 1,1-dioxide	81-07-2	U202
Saccharin salts			U202
Safrole	1,3-Benzodioxole, 5-(2-propenyl)-	94-59-7	U203
Selenium	Same	7782-49-2	
Selenium compounds, N.O.S.[1]			

Selenium dioxide	Selenious acid	7783-00-8	U204
Selenium sulfide	Selenium sulfide SeS_2	7488-56-4	U205
Selenium, tetrakis(dimethyl-dithiocarbamate)	Carbamodithioic acid, dimethyl-, tetraanhydrosulfide with orthothioselenious acid	144-34-3	
Selenourea	Same	630-10-4	P103
Silver	Same	7440-22-4	
Silver compounds, N.O.S.[1]			
Silver cyanide	Silver cyanide Ag(CN)	506-64-9	P104
Silvex (2,4,5-TP)	Propanoic acid, 2-(2,4,5-trichlorophenoxy)-	93-72-1	See F027
Sodium cyanide	Sodium cyanide Na(CN)	143-33-9	P106
Sodium dibutyldithiocarbamate	Carbamodithioic acid, dibutyl, sodium salt	136-30-1	
Sodium diethyldithiocarbamate	Carbamodithioic acid, diethyl-, sodium salt	148-18-5	
Sodium dimethyldithiocarbamate	Carbamodithioic acid, dimethyl-, sodium salt	128-04-1	
Sodium pentachlorophenate	Pentachlorophenol, sodium salt	131522	None
Streptozotocin	D-Glucose, 2-deoxy-2-[[(methylnitrosoamino)carbonyl]amino]-	18883-66-4	U206
Strychnine	Strychnidin-10-one	57-24-9	P108
Strychnine salts			P108
Sulfallate	Carbamodithioic acid, diethyl-, 2-chloro-2-propenyl ester	95-06-7	
TCDD	Dibenzo[b,e][1,4]dioxin, 2,3,7,8-tetrachloro-	1746-01-6	
Tetrabutylthiuram disulfide	Thioperoxydicarbonic diamide, tetrabutyl	1634-02-2	
1,2,4,5-Tetrachlorobenzene	Benzene, 1,2,4,5-tetrachloro-	95-94-3	U207
Tetrachlorodibenzo-p-dioxins			
Tetrachlorodibenzofurans			
Tetrachloroethane, N.O.S.[1]	Ethane, tetrachloro-, N.O.S.	25322-20-7	
1,1,1,2-Tetrachloroethane	Ethane, 1,1,1,2-tetrachloro-	630-20-6	U208
1,1,2,2-Tetrachloroethane	Ethane, 1,1,2,2-tetrachloro-	79-34-5	U209
Tetrachloroethylene	Ethene, tetrachloro-	127-18-4	U210
2,3,4,6-Tetrachlorophenol	Phenol, 2,3,4,6-tetrachloro-	58-90-2	See F027
***2,3,4,6-tetrachlorophenol, potassium salt	same	53535276	None
2,3,4,6-tetrachlorophenol, sodium salt	same	25567559	None
Tetraethyldithiopyrophos-phate	Thiodiphosphoric acid, tetraethyl ester	3689-24-5	P109
Tetraethyl lead	Plumbane, tetraethyl-	78-00-2	P110
Tetraethyl pyrophosphate	Diphosphoric acid, tetraethyl ester	107-49-3	P111

Tetramethylthiuram monosulfide	Bis(dimethylthiocarbamoyl) sulfide	97-74-5	
Tetranitromethane	Methane, tetranitro-	509-14-8	P112
Thallium	Same	7440-28-0	
Thallium compounds, N.O.S.[1]			
Thallic oxide	Thallium oxide Tl_2O_3	1314-32-5	P113
Thallium(I) acetate	Acetic acid, thallium(1+) salt	563-68-8	U214
Thallium(I) carbonate	Carbonic acid, dithallium(1+) salt	6533-73-9	U215
Thallium(I) chloride	Thallium chloride TlCl	7791-12-0	U216
Thallium(I) nitrate	Nitric acid, thallium(1+) salt	10102-45-1	U217
Thallium selenite	Selenious acid, dithallium(1+) salt	12039-52-0	P114
Thallium(I) sulfate	Sulfuric acid, dithallium(1+) salt	7446-18-6	P115
Thioacetamide	Ethanethioamide	62-55-5	U218
Thiodicarb	Ethanimidothioic acid, N,N'-[thiobis [(methylimino) carbonyloxy]] bis-, dimethyl ester.	59669-26-0	U410
Thiofanox	2-Butanone, 3,3-dimethyl-1-(methylthio)-, 0-[(methylamino)carbonyl] oxime	39196-18-4	P045
Thiomethanol	Methanethiol	74-93-1	U153
Thiophanate-methyl	Carbamic acid, [1,2-phyenylenebis (iminocarbonothioyl)] bis-, dimethyl ester	23564-05-8	U409
Thiophenol	Benzenethiol	108-98-5	P014
Thiosemicarbazide	Hydrazinecarbothioamide	79-19-6	P116
Thiourea	Same	62-56-6	U219
Thiram	Thioperoxydicarbonic diamide $[(H_2N)C(S)]_2S_2$, tetramethyl-	137-26-8	U244
Tirpate	1,3-Dithiolane-2-carboxaldehyde, 2,4-dimethyl-, O-[(methylamino) carbonyl] oxime	26419-73-8	P185
Toluene	Benzene, methyl-	108-88-3	U220
Toluenediamine	Benzenediamine, ar-methyl-	25376-45-8	U221
Toluene-2,4-diamine	1,3-Benzenediamine, 4-methyl-	95-80-7	
Toluene-2,6-diamine	1,3-Benzenediamine, 2-methyl-	823-40-5	
Toluene-3,4-diamine	1,2-Benzenediamine, 4-methyl-	496-72-0	
Toluene diisocyanate	Benzene, 1,3-diisocyanatomethyl-	26471-62-5	U223
o-Toluidine	Benzenamine, 2-methyl-	95-53-4	U328
o-Toluidine hydrochloride	Benzenamine, 2-methyl-, hydrochloride	636-21-5	U222
p-Toluidine	Benzenamine, 4-methyl-	106-49-0	U353
Toxaphene	Same	8001-35-2	P123
Triallate	Carbamothioic acid, bis(1-methylethyl)-, S-(2,3,3-trichloro-2-propenyl) ester	2303-17-5	U389

1,2,4-Trichlorobenzene	Benzene, 1,2,4-trichloro-	120-82-1	
1,1,2-Trichloroethane	Ethane, 1,1,2-trichloro-	79-00-5	U227
Trichloroethylene	Ethene, trichloro-	79-01-6	U228
Trichloromethanethiol	Methanethiol, trichloro-	75-70-7	P118
Trichloromonofluoro methane	Methane, trichlorofluoro-	75-69-4	U121
2,4,5-Trichlorophenol	Phenol, 2,4,5-trichloro-	95-95-4	See F027
2,4,6-Trichlorophenol	Phenol, 2,4,6-trichloro-	88-06-2	See F027
2,4,5-T	Acetic acid, (2,4,5-trichlorophenoxy)-	93-76-5	See F027
Trichloropropane, N.O.S.[1]		25735-29-9	
1,2,3-Trichloropropane	Propane, 1,2,3-trichloro-	96-18-4	
Triethylamine	Ethanamine, N,N-diethyl-	121-44-8	U404
O,O,O-Triethyl phosphorothioate	Phosphorothioic acid, O,O,O-triethyl ester	126-68-1	
1,3,5-Trinitrobenzene	Benzene, 1,3,5-trinitro-	99-35-4	U234
Tris(1-aziridinyl)phosphine sulfide	Aziridine, 1,1',1"-phosphinothioylidynetris-	52-24-4	
Tris(2,3-dibromopropyl) phosphate	1-Propanol, 2,3-dibromo-, phosphate (3:1)	126-72-7	U235
Trypan blue	2,7-Naphthalenedisulfonic acid, 3,3'-[(3,3'-dimethyl[1,1'-biphenyl]-4,4'-diyl)bis(azo)]- bis[5-amino-4-hydroxy-, tetrasodium salt	72-57-1	U236
Uracil mustard	2,4-(1H,3H)-Pyrimidinedione, 5-[bis(2-chloroethyl)amino]-	66-75-1	U237
Vanadium pentoxide	Vanadium oxide V_2O_5	1314-62-1	P120
Vernolate	Carbamothioic acid, dipropyl-,S-propyl ester	1929-77-7	
Vinyl chloride	Ethene, chloro-	75-01-4	U043
Warfarin	2H-1-Benzopyran-2-one, 4-hydroxy-3-(3-oxo-1-phenylbutyl)-, when present at concentrations less than 0.3%	81-81-2	U248
Warfarin	2H-1-Benzopyran-2-one, 4-hydroxy-3-(3-oxo-1-phenylbutyl)-, when present at concentrations greater than 0.3%	81-81-2	P001
Warfarin salts, when present at concentrations less than 0.3%			U248
Warfarin salts, when present at concentrations greater than 0.3%			P001
Zinc cyanide	Zinc cyanide $Zn(CN)_2$	557-21-1	P121
Zinc phosphide	Zinc phosphide Zn_3P_2, when present at concentrations greater than 10%	1314-84-7	P122

Zinc phosphide	Zinc phosphide Zn_3P_2, when present at concentrations of 10% or less	1314-84-7	U249
Ziram	Zinc, bis(dimethylcarbamodithioato-S,S')-, (T-4)-	137-30-4	P205

FOOTNOTE: [1]The abbreviation N.O.S. (not otherwise specified) signifies those members of the general class not specifically listed by name in this appendix.

Appendix IX - (Reserved) [40 CFR 261 Appendix IX]
(Note: EPA maintains the listing in Appendix IX.)

(6) Exclusion/Exemptions [40 CFR 261.38 Subpart E]

(a) Comparable/Syngas Fuel Exclusion [40 CFR 261.38]

Wastes that meet the following comparable/syngas fuel requirements are not solid wastes:

1. Comparable fuel specifications

(i) Physical specifications

(I) Heating value. The heating value must exceed 5,000 BTU/lbs. (11,500 J/g).

(II) Viscosity. The viscosity must not exceed: 50 cs, as-fired.

(ii) Constituent specifications

For compounds listed in table 1 to this subparagraph the specification levels and, where non-detect is the specification, minimum required detection limits are: (see Table 1).

Table 1: Detection and Detection Limit Values for Comparable Fuel Specification

Chemical Name	CAS No.	Composite value (mg/kg)	Heating value (BTU/lb)	Concentration limit (mg/kg at 10,000 BTU/lb)	Minimum required detection limit (mg/kg)
Total Nitrogen as N	NA	9000	18400	4900	
Total Halogens as Cl	NA	1000	18400	540	
Total Organic Halogens as Cl	NA			(1)	
Polychlorinated biphenyls total [Arocolors, total]	1336-36-3	ND		ND	1.4
Cyanide, total	57-12-5	ND		ND	1.0
Metals:					
Antimony, total	7440-36-0	ND		12	
Arsenic, total	7440-38-2	ND		0.23	
Barium, total	7440-39-3	ND		23	
Beryllium, total	7440-41-7	ND		1.2	
Cadmium, total	7440-43-9		ND		1.2
Chromium, total	7440-47-3	ND		2.3	
Cobalt	7440-48-4	ND		4.6	
Lead, total	7439-92-1	57	18100	31	
Manganese	7439-96-5	ND		1.2	
Mercury, total	7439-97-6	ND		0.25	
Nickel, total	7440-02-0	106	18400	58	
Selenium, total	7782-49-2	ND		0.23	
Silver, total	7440-22-4	ND		2.3	
Thallium, total	7440-28-0	ND		23	

Hydrocarbons:					
Benzo[a]anthracene	56-55-3	ND		2400	
Benzene	71-43-2	8000	19600	4100	
Benzo[b]fluoranthene	205-99-2	ND		2400	
Benzo[k]fluoranthene	207-08-9	ND		2400	
Benzo[a]pyrene	50-32-8	ND		2400	
Chrysene	218-01-9	ND		2400	
Dibenzo[a, h]anthracene	53-70-3	ND		2400	
7, 12-Dimethylbenz[a]anthracene	57-97-6	ND		2400	
Fluoranthene	206-44-0	ND		2400	
Indeno(1, 2, 3-cd)pyrene	193-39-5	ND		2400	
3-Methylcholanthrene	56-49-5	ND		2400	
Naphthalene	91-20-3	6200	19400	3200	
Toluene	108-88-3	69000	19400	36000	
Oxygenates:					
Acetophenone	98-86-2	ND		2400	
Acrolein	107-02-8	ND		39	
Allyl alcohol	107-18-6	ND		30	
Bis(2-ethylhexl) phthalate [Di-2-ethylhexyl phthalate]	117-81-7	ND		2400	
Butyl benzyl phthalate	85-68-7	ND		2400	
o-Cresol [2-Methyl phenol]	95-48-7	ND		2400	
m-Cresol [3-Methyl phenol]	108-39-4	ND		2400	
p-Cresol [4-Methyl phenol]	106-44-5	ND		2400	
Di-n-butyl phthalate	84-74-2	ND		2400	
Diethyl phthalate	84-66-2	ND		2400	
2, 4-Dimethylphenol	105-67-9	ND		2400	
Dimethyl phthalate	131-11-3	ND		2400	
Di-n-octyl phthalate	117-84-0	ND		2400	
Endothall	145-73-3	ND		100	
Ethyl methacrylate	97-63-2	ND		39	
2-Ethoxyethanol [Ethylene glycol monoethyl ether]	110-80-5	ND		100	
Isobutyl alcohol	78-83-1	ND		39	
Isosafrole	120-58-1	ND		2400	
Methyl ethyl ketone [2-Butanone]	78-93-3	ND		39	
Methyl methacrylate	80-62-6	ND		39	
1, 4-Naphthoquinone	130-15-4	ND		2400	
Phenol	108-95-2	ND		2400	
Propargyl alcohol [2-Propyn-1-ol]	107-19-7	ND		30	
Safrole	94-59-7	ND		2400	
Sulfonated Organics:					
Carbon disulfide	75-15-0	ND		ND	39
Disulfoton	298-04-4	ND		ND	2400
Ethyl methanesulfonate	62-50-0	ND		ND	2400
Methyl methanesulfonate	66-27-3	ND		ND	2400
Phorate	298-02-2	ND		ND	2400
1, 3-Propane sultone	1120-71-4	ND		ND	100
Tetraethyldithiopyrophosphate [Sulfotepp]	3689-24-5	ND		ND	2400
Thiophenol [Benzenethiol]	108-98-5	ND		ND	30
O, O, O-Triethyl phosphorothioate	126-68-1	ND		ND	2400
Nitrogenated Organics:					
Acetonitrile [Methyl cyanide]	75-05-8	ND		ND	39
2-Acetylaminofluorene [2-AAF]	53-96-3	ND		ND	2400
Acrylonitrile	107-13-1	ND		ND	39
4-Aminobiphenyl	92-67-1	ND		ND	2400

4-Aminopyridine	504-24-5	ND	ND	100
Aniline	62-53-3	ND	ND	2400
Benzidine	92-87-5	ND	ND	2400
Dibenz[a, j]acridine	224-42-0	ND	ND	2400
O, O-Diethyl O-pyrazinyl Phosphorothioate [Thionazin]	297-97-2	ND	ND	2400
Dimethoate	60-51-5	ND	ND	2400
p-(Dimethylamino) azobenzene [4-dimethyl- aminoazobenzene]	60-11-7	ND	ND	2400
3,3'-Dimethylbenzidine	119-93-7	ND	ND	2400
α, α-Dimethylphenethylamine	122-09-8	ND	ND	2400
3, 3'-Dimethoxybenzidine	119-90-4	ND	ND	100
1, 3-Dinitrobenzene [m-Dinitrobenzene]	99-65-0	ND	ND	2400
4, 6-Dinitro-o-cresol	534-52-1	ND	ND	2400
2, 4-Dinitrophenol	51-28-5	ND	ND	2400
2, 4-Dinitrotoluene	121-14-2	ND	ND	2400
2, 6-Dinitrotoluene	606-20-2	ND	ND	2400
Dinoseb [2-sec-Butyl-4, 6-dinitrophenol]	88-85-7	ND	ND	2400
Diphenylamine	122-39-4	ND	ND	2400
Ethyl carbamate [Urethane]	51-79-6	ND	ND	100
Ethylenethiourea (2-Imidazolidinethione)	96-45-7	ND	ND	110
Famphur	52-85-7	ND	ND	2400
Methacrylonitrile	126-98-7	ND	ND	39
Methapyrilene	91-80-5	ND	ND	2400
Methomyl	16752-77-5	ND	ND	57
2-Methyllactonitrile, [Acetone cyanohydrin]	75-86-5	ND	ND	100
Methyl parathion	298-00-0	ND	ND	2400
MNNG (N-Metyl-N-nitroso-N'-nitroguanidine)	70-25-7	ND	ND	110
1-Naphthylamine, [α-Naphthylamine]	134-32-7	ND	ND	2400
2-Naphthylamine, [β-Naphthylamine]	91-59-8	ND	ND	2400
Nicotine	54-11-5	ND	ND	100
4-Nitroaniline, [p-Nitroaniline]	100-01-6	ND	ND	2400
Nitrobenzene	98-95-3	ND	ND	2400
p-Nitrophenol, [p-Nitrophenol]	100-02-7	ND	ND	2400
5-Nitro-o-toluidine	99-55-8	ND	ND	2400
N-Nitrosodi-n-butylamine	924-16-3	ND	ND	2400
N-Nitrosodiethylamine	55-18-5	ND	ND	2400
N-Nitrosodiphenylamine, [Diphenylnitrosamine]	86-30-6	ND	ND	2400
N-Nitroso-N-methylethylamine	10595-95-6	ND	ND	2400
N-Nitrosomorpholine	59-89-2	ND	ND	2400
N-Nitrosophiperidine	100-75-4	ND	ND	2400
N-Nitrosopyrrolidine	930-55-2	ND	ND	2400
2-Nitropropane	79-46-9	ND	ND	30
Parathion	56-38-2	ND	ND	2400
Phenacetin	62-44-2	ND	ND	2400
1, 4-Phenylne diamine, [p-Phenylenediamine]	106-50-3	ND	ND	2400
N-Phenylthiourea	103-85-5	ND	ND	57
2-Picoline [alpha-Picoline]	109-06-8	ND	ND	2400
Propylthioracil, [6-Propyl-2-thiouracil]	51-52-5	ND	ND	100
Pyridine	110-86-1	ND	ND	2400
Strychnine	57-24-9	ND	ND	100
Thioacetamide	62-55-5	ND	ND	57
Thiofanox	39196-18-4	ND	ND	100
Thiourea	62-56-6	ND	ND	57
Toluene-2,4-diamine [2,4-Diaminotoluene]	95-80-7	ND	ND	57

Toluene-2, 6-diamine [2, 6-Diaminotoluene]	823-40-5	ND	ND	57
o-Toluidine	95-53-4	ND	ND	2400
p-Toluidine	106-49-0	ND	ND	100
1, 3, 5-Trinitrobenzene, [sym-Trinitobenzene]	99-35-4	ND	ND	2400
Halogenated Organics:				
Allyl chloride	107-05-1	ND	ND	39
Aramite	140-57-8	ND	ND	2400
Benzal chloride [Dichloromethyl benzene]	98-87-3	ND	ND	100
Benzyl chloride	100-44-77	ND	ND	100
bis(2-Chloroethyl)ether [Dichoroethyl ether]	111-44-4	ND	ND	2400
Bromoform [Tribromomethane]	75-25-2	ND	ND	39
Bromomethane [Methyl bromide]	74-83-9	ND	ND	39
4-Bromophenyl phenyl ether [p-Bromo diphenyl ether]	101-55-3	ND	ND	2400
Carbon tetrachloride	56-23-5	ND	ND	39
Chlordane	57-74-9	ND	ND	14
p-Chloroaniline	106-47-8	ND	ND	2400
Chlorobenzene	108-90-7	ND	ND	39
Chlorobenzilate	510-15-6	ND	ND	2400
p-Chloro-m-cresol	59-50-7	ND	ND	2400
2-Chloroethyl vinyl ether	110-75-8	ND	ND	39
Chloroform	67-66-3	ND	ND	39
Chloromethane [Methyl chloride]	74-87-3	ND	ND	39
2-Chloronaphthalene [beta-Chloronaphthalene]	91-58-7	ND	ND	2400
2-Chlorophenol [o-Chlorophenol]	95-57-8	ND	ND	2400
Chloroprene [2-Chloro-1, 3-butadiene]	1126-99-8	ND	ND	39
2, 4-D [2, 4-Dichlorophenoxyacetic acid]	94-75-7	ND	ND	7.0
Diallate	2303-16-4	ND	ND	2400
1, 2-Dibromo-3-chloropropane	96-12-8	ND	ND	39
1, 2-Dichlorobenzene [o-Dichlorobenzene]	95-50-1	ND	ND	2400
1, 3-Dichlorobenzene [m-Dichlorobenzene]	541-73-1	ND	ND	2400
1, 4-Dichlorobenzene [p-Dichlorobenzene]	106-46-7	ND	ND	2400
3, 3'-Dichlorobenzidine	91-94-1	ND	ND	2400
Dichlorodifluoromethane [CFC-12]	75-71-8	ND	ND	39
1, 2-Dichloroethane [Ethylene dichloride]	107-06-2	ND	ND	39
1, 1-Dichloroethylene [Vinylidene chloride]	75-35-4	ND	ND	39
Dichloromethoxy ethane [Bis(2-chloro-ethoxy)methane]	111-91-1	ND	ND	2400
2,4-Dichlorophenol	120-83-2	ND	ND	2400
2, 6-Dichlorophenol	87-65-0	ND	ND	2400
1, 2-Dichloropropane [Propylene dichloride]	78-87-5	ND	ND	39
cis-1, 3-Dichloropropylene	10061-01-5	ND	ND	39
trans-1, 3-Dichloropropylene	10061-02-6	ND	ND	39
1,3-Dichloro-2propanol	96-23-1	ND	ND	30
Endosulfan I	959-98-8	ND	ND	1.4
Endosulfan II	33213-65-9	ND	ND	1.4
Endrin	72-20-8	ND	ND	1.4
Endrin aldehyde	7421-93-4	ND	ND	1.4
Endrin Ketone	53494-70-5	ND	ND	1.4
Epichlorohydrin [1-Chloro-2, 3-epoxy				

propane]	106-89-8	ND		ND	30
Ethylidene dichloride [1, 1-Dichloroethane]	75-34-3	ND		ND	39
2-Fluoroacetamide	640-19-7	ND		ND	100
Heptachlor	76-44-8	ND		ND	1.4
Heptachlor epoxide	1024-57-3	ND		ND	2.8
Hexachlorobenzene	118-74-1	ND		ND	2400
Hexachloro-1, 3-butadiene [Hexachlorobutadiene]	87-68-3	ND		ND	2400
Hexachlorocyclopentadiene	77-47-4	ND		ND	2400
Hexachloroethane	67-72-1	ND		ND	2400
Hexachlorophene	70-30-4	ND		ND	59000
Hexachloropropene [Hexachloropropylene]	1888-71-7	ND		ND	2400
Isodrin	465-73-6	ND		ND	2400
Kepone [Chlordecone]	143-50-0	ND		ND	4700
Lindane [gamma-BHC] [gamma-Hexachloro-cyclohexane]	58-89-9	ND		ND	1.4
Methylene chloride [Dichloromethane]	75-09-2	ND		ND	39
4, 4'-Methylene-bis(2-chloroaniline)	101-14-4	ND		ND	100
Methyl iodide [Iodomethane]	74-88-4	ND		ND	39
Pentachlorobenzene	608-93-5	ND		ND	2400
Pentachloroethane	76-01-7	ND		ND	39
Pentachloronitrobenzene [PCNB] [Quintobenzene] [Quintozene]	82-68-8	ND		ND	2400
Pentachlorophenol	87-86-5	ND		ND	2400
Pronamide	23950-58-5	ND		ND	2400
Silvex [2, 4, 5-Trichlorophenoxypropionic acid]	93-72-1	ND		ND	7.0
2, 3, 7, 8-Tetrachlorodibenzo-p-dioxin [2, 3, 7, 8-TCDD]	1746-01-6	ND		ND	30
1, 2, 4, 5-Tetrachlorobenzene	95-94-3	ND		ND	2400
1, 1, 2, 2-Tetrachloroethane	79-34-5	ND		ND	39
Tetrachloroethylene [Perchloroethylene]	127-18-4	ND		ND	39
2, 3, 4, 6-Tetrachlorophenol	58-90-2	ND		ND	2400
1, 2, 4-Trichlorobenzene	120-82-1	ND		ND	2400
1,1,1-Trichloroethane [Methyl chloroform]	71-55-6	ND		ND	39
1,1,2-Trichloroethane [Vinyl trichloride]	79-00-5	ND		ND	39
Trichloroethylene	79-01-6	ND		ND	39
Trichlorofluoromethane [Trichloromono-Fluoromethane]	75-69-4	ND		ND	39
2, 4, 5-Trichlorophenol	95-95-4	ND		ND	2400
2, 4, 6-Trichlorophenol	88-06-2	ND		ND	2400
1, 2, 3-Trichloropropane	96-18-4	ND		ND	39
Vinyl Chloride	75-01-4	ND		ND	39

Notes:

NA –Not Applicable.
ND –Nondetect.

[1]25 or individual halogenated organics listed below.

[a] Absence of PCBs can also be demonstrated by using appropriate screening methods, e.g., immunoassay kit for PCB in oils (Method 4020) or colorimetric analysis for PCBs in oil (Method 9079).
[b] Some minimum required detection limits are above the total halogen limit of 540 ppm. The detection limits reflect what was achieved during EPA testing and analysis and also analytical complexity associated with measuring all halogen compounds on Appendix VIII at low levels. EPA recognizes that in practice the presence of these compounds will be functionally limited by the molecular weight and the total halogen limit of 540 ppm.

2. Synthesis gas fuel specifications

Synthesis gas fuel (i.e., syngas fuel) that is generated from hazardous waste must:

(i) Have a minimum Btu value of 100 Btu/scf (British thermal unit per standard cubic foot);

(ii) Contain less than 1 ppmv of total halogen;

(iii) Contain less than 300 ppmv of total nitrogen other than diatomic nitrogen (N_2);

(iv) Contain less than 200 ppmv of hydrogen sulfide; and

(v) Contain less than 1 ppmv of each hazardous constituent in the target list of Appendix VIII constituents of this rule.

3. Implementation

Waste that meets the comparable or syngas fuel specifications provided by parts 1 or 2 of this subparagraph (these constituent levels must be achieved by the comparable fuel when generated, or as a result of treatment or blending, as provided in subparts 3(iii) or (iv) of this subparagraph) is excluded from the definition of solid waste provided that the following requirements are met:

(i) Notices

For purposes of this subparagraph, the person claiming and qualifying for the exclusion is called the comparable/syngas fuel generator and the person burning the comparable/syngas fuel is called the comparable/syngas burner. The person who generates the comparable fuel or syngas fuel must claim and certify to the exclusion.

(I) Commissioner, Department of Environment and Conservation (Director, Division of Solid Waste Management and Director of Division of Air Pollution Control).

I. The generator must submit a one-time notice to the Commissioner and Directors of Solid Waste Management and Air Pollution Control, in whose jurisdiction the exclusion is being claimed and where the comparable/syngas fuel will be burned, certifying compliance with the conditions of the exclusion and providing documentation as required by subitem 3(i)(I)III of this subparagraph;

II. If the generator is a company that generates comparable/syngas fuel at more than one facility, the generator shall specify at which sites the comparable/syngas fuel will be generated;

III. A comparable/syngas fuel generator's notification to the Commissioner must contain the following items:

A. The name, address, and Installation Identification number of the person/facility claiming the exclusion;

B. The applicable Hazardous Waste Codes for the hazardous waste;

C. Name and address of the units, meeting the requirements of subpart 3(ii) of this subparagraph, that will burn the comparable/syngas fuel; and

D. The following statement is signed and submitted by the person claiming the exclusion or his authorized representative:

"Under penalty of criminal and civil prosecution for making or submitting false statements, representations, or omissions, I certify that the requirements of Rule ~~1200-01-11-.02~~ 0400-12-01-.02(6)(a) have been met for all waste identified in this notification. Copies of the records and information required at Rule ~~1200-01-11-.02~~ 0400-12-01-.02(6)(a)3(x) are available at the comparable/syngas fuel generator's facility. Based on my inquiry of the individuals immediately responsible for obtaining the information, the information is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment."

(II) Public notice

Prior to burning an excluded comparable/syngas fuel, the burner must publish in a major newspaper of general circulation local to the site where the fuel will be burned, a notice entitled ``Notification of Burning a Comparable/Syngas Fuel Excluded Under the Resource Conservation and Recovery Act" containing the following information:

I. Name, address, and Installation Identification number of the generating facility;

II. Name and address of the unit(s) that will burn the comparable/syngas fuel;

III. A brief, general description of the manufacturing, treatment, or other process generating the comparable/syngas fuel;

IV. An estimate of the average and maximum monthly and annual quantity of the waste claimed to be excluded; and

V. Name and mailing address of the Commissioner to whom the claim was submitted.

(ii) Burning

The comparable/syngas fuel exclusion for fuels meeting the requirements of parts 1 or 2 ~~and subpart 3(i)~~ of this subparagraph and subpart (i) of this part applies only if the fuel is burned in the following units that also shall be subject to Federal/State/local air emission requirements, including all applicable Clean Air Act, Maximum Achievable Control Technologies (CAA MACT) requirements:

(I) Industrial furnaces as defined in Rule ~~1200-01-11-.01~~ 0400-12-01-.01(2)(a);

(II) Boilers, as defined in Rule ~~1200-01-11-.01~~ 0400-12-01-.01(2)(a), that are further defined as follows:

I. Industrial boilers located on the site of a facility engaged in a manufacturing process where substances are transformed into new products, including the component parts of products, by mechanical or chemical processes; or

II. Utility boilers used to produce electric power, steam, heated or cooled air, or other gases or fluids for sale;

(III) Hazardous waste incinerators subject to regulation under Rule ~~1200-01-11-.05~~ 0400-12-01-.05(15) or Rule ~~1200-01-11-.06~~ 0400-12-01-.06(15) or applicable CAA MACT standards.

(IV) Gas turbines used to produce electric power, steam, heated or cooled air, or other gases or fluids for sale.

(iii) Blending to meet the viscosity specification

A hazardous waste blended to meet the viscosity specification shall:

(I) As generated and prior to any blending, manipulation, or processing meet the constituent and heating value specifications of item 1(i)(I) and subpart 1(ii) of this subparagraph;

(II) Be blended at a facility that is subject to the applicable requirements of Rules ~~1200-01-11-.05~~ 0400-12-01-.05 and .06, or Rule ~~1200-01-11-.03~~ 0400-12-01-.03(4)(e); and

(III) Not violate the dilution prohibition of subpart 3(vi) of this subparagraph.

(iv) Treatment to meet the comparable fuel exclusion specifications

(I) A hazardous waste may be treated to meet the exclusion specifications of subparts 1(i) and (ii) of this subparagraph provided the treatment:

I. Destroys or removes the constituent listed in the specification or raises the heating value by removing or destroying hazardous constituents or materials;

II. Is performed at a facility that is subject to the applicable requirements of Rules ~~1200-01-11-.05~~ 0400-12-01-.05 and .06, or Rule ~~1200-01-11-.03~~ 0400-12-01-.03(4)(e); and

III. Does not violate the dilution prohibition of subpart 3(vi) of this subparagraph.

(II) Residuals resulting from the treatment of a hazardous waste listed in paragraph (4) of this rule to generate a comparable fuel remain a hazardous waste.

(v) Generation of a syngas fuel

(I) A syngas fuel can be generated from the processing of hazardous wastes to meet the exclusion specifications of part 2 of this subparagraph provided the processing:

I. Destroys or removes the constituent listed in the specification or raises the heating value by removing or destroying constituents or materials;

II. Is performed at a facility that is subject to the applicable requirements of Rules ~~1200-01-11-.05~~ 0400-12-01-.05 and .06, or Rule ~~1200-01-11-.03~~ 0400-12-01-.03(4)(e); or is an exempt recycling unit pursuant to part (1)(f)3 of this rule; and

III. Does not violate the dilution prohibition of subpart 3(vi) of this subparagraph.

(II) Residuals resulting from the treatment of a hazardous waste listed in paragraph (4) of this rule to generate a syngas fuel remain a hazardous waste.

(vi) Dilution prohibition for comparable and syngas fuels

No generator, transporter, handler, or owner or operator of a treatment, storage, or disposal facility shall in any way dilute a hazardous waste to meet the exclusion specifications of item 1(i)(I), subpart 1(ii) or part 2 of this subparagraph.

(vii) Waste analysis plans

The generator of a comparable/syngas fuel shall develop and follow a written waste analysis plan which describes the procedures for sampling and analysis of the hazardous waste to be excluded. The plan shall be followed and retained at the facility excluding the waste.

(I) At a minimum, the plan must specify

I. The parameters for which each hazardous waste will be analyzed and the rationale for the selection of those parameters;

II. The test methods which will be used to test for these parameters;

III. The sampling method which will be used to obtain a representative sample of the waste to be analyzed;

IV. The frequency with which the initial analysis of the waste will be reviewed or repeated to ensure that the analysis is accurate and up to date; and

V. If process knowledge is used in the waste determination, any information prepared by the generator in making such determination.

(II) The waste analysis plan shall also contain records of the following:

I. The dates and times waste samples were obtained, and the dates the samples were analyzed;

II. The names and qualifications of the person(s) who obtained the samples;

III. A description of the temporal and spatial locations of the samples;

IV. The name and address of the laboratory facility at which analyses of the samples were performed;

V. A description of the analytical methods used, including any clean-up and sample preparation methods;

VI. All quantitation limits achieved and all other quality control results for the analysis (including method blanks, duplicate analyses, matrix spikes, etc.), laboratory quality assurance data, and description of any deviations from analytical methods written in the plan or from any other activity written in the plan which occurred;

VII. All laboratory results demonstrating that the exclusion specifications have been met for the waste; and

VIII. All laboratory documentation that support the analytical results, unless a contract between the claimant and the laboratory provides for the documentation to be maintained by the laboratory for the period specified in subpart 3(xi) of this subparagraph and also provides for the availability of the documentation to the claimant upon request.

(III) Syngas fuel generators shall submit for approval, prior to performing sampling, analysis, or any management of a syngas fuel as an excluded waste, a waste analysis plan containing the elements of item 3(vii)(I) of this subparagraph to the appropriate regulatory authority. The approval of waste analysis plans must be stated in writing and received by the facility prior to sampling and analysis to demonstrate the exclusion of a syngas. The approval of the waste analysis plan may contain such provisions and conditions as the regulatory authority deems appropriate.

(viii) Comparable fuel sampling and analysis

(I) General

For each waste for which an exclusion is claimed, the generator of the hazardous waste must test for all the constituents on appendix VIII to this rule, except those that the generator determines, based on testing or knowledge, should not be present in the waste. The generator is required to document the basis of each determination that a constituent should not be present. The generator may not determine that any of the following categories of constituents should not be present:

I. A constituent that triggered the toxicity characteristic for the waste constituents that were the basis of the listing of the waste stream, or constituents for which there is a treatment standard for the waste code in Rule ~~1200-01-11-.10~~ 0400-12-01-.10(3)(a);

II. A constituent detected in previous analysis of the waste;

III. Constituents introduced into the process that generates the waste; or

IV. Constituents that are byproducts or side reactions to the process that generates the waste.

(Note to subpart 3(viii): Any claim under this subparagraph must be valid and accurate for all hazardous constituents; a determination not to test for a hazardous constituent will not shield a generator from liability should that constituent later be found in the waste above the exclusion specifications.)

(II) For each waste for which the exclusion is claimed where the generator of the comparable/syngas fuel is not the original generator of the hazardous waste, the generator of the comparable/syngas fuel may not use process knowledge pursuant to item 3(viii)(I) of this subparagraph and must test to determine that all of the constituent specifications of subpart 1(ii) and part 2 of this subparagraph have been met.

(III) The comparable/syngas fuel generator may use any reliable analytical method to demonstrate that no constituent of concern is present at concentrations above the specification levels. It is the responsibility of the generator to ensure that the sampling and analysis are unbiased, precise, and representative of the waste. For the waste to be eligible for exclusion, a generator must demonstrate that:

I. Each constituent of concern is not present in the waste above the specification level at the 95% upper confidence limit around the mean; and

II. The analysis could have detected the presence of the constituent at or below the specification level at the 95% upper confidence limit around the mean.

(IV) Nothing in this item preempts, overrides or otherwise negates the provision in Rule ~~1200-01-11-.03~~ 0400-12-01-.03(1)(b), which requires any person who generates a solid waste to determine if that waste is a hazardous waste.

(V) In an enforcement action, the burden of proof to establish conformance with the exclusion specification shall be on the generator claiming the exclusion.

(VI) The generator must conduct sampling and analysis in accordance with their waste analysis plan developed under subpart 3(vii) of this subparagraph.

(VII) Syngas fuel and comparable fuel that has not been blended in order to meet the kinematic viscosity specifications shall be analyzed as generated.

(VIII) If a comparable fuel is blended in order to meet the kinematic viscosity specifications, the generator shall:

I. Analyze the fuel as generated to ensure that it meets the constituent and heating value specifications; and

II. After blending, analyze the fuel again to ensure that the blended fuel continues to meet all comparable/syngas fuel specifications.

(IX) Excluded comparable/syngas fuel must be re-tested, at a minimum, annually and must be retested after a process change that could change the chemical or physical properties of the waste.

(ix) Speculative accumulation

Any persons handling a comparable/syngas fuel are subject to the speculative accumulation test under subpart ~~.02~~(1)(b)3(iv) of this rule.

(x) Records

The generator must maintain records of the following information on-site:

(I) All information required to be submitted to the implementing authority as part of the notification of the claim:

I. The owner/operator name, address, and facility Installation ID number of the person claiming the exclusion;

II. The applicable Hazardous Waste Codes for each hazardous waste excluded as a fuel; and

III. The certification signed by the person claiming the exclusion or his authorized representative.

(II) A brief description of the process that generated the hazardous waste and process that generated the excluded fuel, if not the same;

(III) An estimate of the average and maximum monthly and annual quantities of each waste claimed to be excluded;

(IV) Documentation for any claim that a constituent is not present in the hazardous waste as required under item 3(viii)(I) of this subparagraph;

(V) The results of all analyses and all detection limits achieved as required under subpart 3(viii) of this subparagraph;

(VI) If the excluded waste was generated through treatment or blending, documentation as required under subpart 3(iii) or (iv) of this subparagraph;

(VII) If the waste is to be shipped off-site, a certification from the burner as required under subpart 3(xii) of this subparagraph;

(VIII) A waste analysis plan and the results of the sampling and analysis that includes the following:

I. The dates and times waste samples were obtained, and the dates the samples were analyzed;

II. The names and qualifications of the person(s) who obtained the samples;

III. A description of the temporal and spatial locations of the samples;

IV. The name and address of the laboratory facility at which analyses of the samples were performed;

V. A description of the analytical methods used, including any clean-up and sample preparation methods;

VI. All quantitation limits achieved and all other quality control results for the analysis (including method blanks, duplicate analyses, matrix spikes, etc.), laboratory quality assurance data, and description of any deviations from analytical methods written in the plan or from any other activity written in the plan which occurred;

VII. All laboratory analytical results demonstrating that the exclusion specifications have been met for the waste; and

VIII. All laboratory documentation that support the analytical results, unless a contract between the claimant and the laboratory provides for the documentation to be maintained by the laboratory for the period specified in subpart 3(xi) of this subparagraph and also provides for the availability of the documentation to the claimant upon request; and

(IX) If the generator ships comparable/syngas fuel off-site for burning, the generator must retain for each shipment the following information on-site:

I. The name and address of the facility receiving the comparable/syngas fuel for burning;

II. The quantity of comparable/syngas fuel shipped and delivered;

II. The date of shipment or delivery;

IV. A cross-reference to the record of comparable/syngas fuel analysis or other information used to make the determination that the comparable/syngas fuel meets the specifications as required under subpart 3(viii) of this subparagraph; and

V. A one-time certification by the burner as required under subpart 3(xii) of this subparagraph.

(xi) Records retention

Records must be maintained for the period of three years. A generator must maintain a current waste analysis plan during that three year period.

(xii) Burner certification

Prior to submitting a notification to the Commissioner, a comparable/syngas fuel generator who intends to ship their fuel off-site for burning must obtain a one-time written, signed statement from the burner:

(I) Certifying that the comparable/syngas fuel will only be burned in an industrial furnace or boiler, utility boiler, or hazardous waste incinerator, as required under subpart 3(ii) of this subparagraph;

(II) Identifying the name and address of the units that will burn the comparable/syngas fuel; and

(III) Certifying that the state in which the burner is located is authorized to exclude wastes as comparable/syngas fuel under the provisions of this subparagraph.

(xiii) Ineligible waste codes

Wastes that are listed because of presence of dioxins or furans, as set out in Appendix VII of this rule, are not eligible for this exclusion, and any fuel produced from or otherwise containing these wastes remains a hazardous waste subject to full hazardous waste management requirements.

(b) Conditional Exclusion for Used, Broken Cathode Ray Tubes (CRTs) and Processed CRT Glass Undergoing Recycling [40 CFR 261.39]

Used, broken CRTs are not solid wastes if they meet the following conditions:

1. Prior to processing:

These materials are not solid wastes if they are destined for recycling and if they meet the following requirements:

(i) Storage

The broken CRTs must be either:

(I) Stored in a building with a roof, floor, and walls, or

(II) Placed in a container (i.e., a package or a vehicle) that is constructed, filled, and closed to minimize releases to the environment of CRT glass (including fine solid materials).

(ii) Labeling

Each container in which the used, broken CRT is contained must be labeled or marked clearly with one of the following phrases: ``Used cathode ray tube(s)-contains leaded glass " or ``Leaded glass from televisions or computers." It must also be labeled: ``Do not mix with other glass materials."

(iii) Transportation

The used, broken CRTs must be transported in a container meeting the requirements (i)(II) and subpart (ii) of this part.

(iv) Speculative accumulation and use constituting disposal

The used, broken CRTs are subject to the limitations on speculative accumulation as defined in subpart (1)(a)3(viii) of this rule. If they are used in a manner constituting disposal, they must comply with the applicable requirements of Rule ~~1200-01-11-.09~~ 0400-12-01-.09(3) instead of the requirements of this subparagraph.

(v) Exports

[Note: The implementation of this subpart (Rule ~~1200-01-11-.02~~ 0400-12-01-.02(6)(b)1(v) Exports) remains the responsibility of EPA.]

In addition to the applicable conditions specified in subparts (i) through (iv) of this part, exporters of used, broken CRTs must comply with the following requirements:

(I) Notify EPA of an intended export before the CRTs are scheduled to leave the United States. A complete notification should be submitted sixty (60) days before the initial shipment is intended to be shipped off-site. This notification may cover export activities extending over a twelve (12) month or lesser period. The notification must be in writing, signed by the exporter, and include the following information:

I. Name, mailing address, telephone number and EPA ID number (if applicable) of the exporter of the CRTs.

II. The estimated frequency or rate at which the CRTs are to be exported and the period of time over which they are to be exported.

III. The estimated total quantity of CRTs specified in kilograms.

IV. All points of entry to and departure from each foreign country through which the CRTs will pass.

V. A description of the means by which each shipment of the CRTs will be transported (e.g., mode of transportation vehicle (air, highway, rail, water, etc.), type(s) of container (drums, boxes, tanks, etc.)).

VI. The name and address of the recycler and any alternate recycler.

VII. A description of the manner in which the CRTs will be recycled in the foreign country that will be receiving the CRTs.

VIII. The name of any transit country through which the CRTs will be sent and a description of the approximate length of time the CRTs will remain in such country and the nature of their handling while there.

(II) Notifications submitted by mail should be sent to the following mailing address: Office of Enforcement and Compliance Assurance, Office of Federal Activities, International Compliance Assurance Division, (Mail Code 2254A), Environmental Protection Agency, 1200 Pennsylvania Ave., NW., Washington, DC 20460. Hand-delivered notifications should be sent to: Office of Enforcement and Compliance Assurance, Office of Federal Activities, International Compliance Assurance Division, (Mail Code 2254A), Environmental Protection Agency, Ariel Rios Bldg., Room 6144, 1200 Pennsylvania Ave., NW., Washington, DC. In both cases, the following shall be prominently displayed on the front of the envelope: "Attention: Notification of Intent to Export CRTs."

(III) Upon request by EPA, the exporter shall furnish to EPA any additional information which a receiving country requests in order to respond to a notification.

(IV) EPA will provide a complete notification to the receiving country and any transit countries. A notification is complete when EPA receives a notification which EPA determines satisfies the requirements of item (I) of this subpart. Where a claim of confidentiality is asserted with respect to any notification information required by item (I) of this subpart, EPA may find the notification not complete until any such claim is resolved in accordance with 40 CFR 260.2.

(V) The export of CRTs is prohibited unless the receiving country consents to the intended export. When the receiving country consents in writing to the receipt of the CRTs, EPA will forward an Acknowledgment of Consent to Export CRTs to the exporter. Where the receiving country objects to receipt of the CRTs or withdraws a prior consent, EPA will notify the exporter in writing. EPA will also notify the exporter of any responses from transit countries.

(VI) When the conditions specified on the original notification change, the exporter must provide EPA with a written renotification of the change,

except for changes to the telephone number in subitem 1(v)(I)I of this subparagraph and decreases in the quantity indicated pursuant to 1(v)(I)III of this subparagraph. The shipment cannot take place until consent of the receiving country to the changes has been obtained (except for changes to information about points of entry and departure and transit countries pursuant to subitem 1(v)(I)IV and subitem 1(v)(I)VIII of this subparagraph and the exporter of CRTs receives from EPA a copy of the Acknowledgment of Consent to Export CRTs reflecting the receiving country's consent to the changes.

(VII) A copy of the Acknowledgment of Consent to Export CRTs must accompany the shipment of CRTs. The shipment must conform to the terms of the Acknowledgment.

(VIII) If a shipment of CRTs cannot be delivered for any reason to the recycler or the alternate recycler, the exporter of CRTs must renotify EPA of a change in the conditions of the original notification to allow shipment to a new recycler in accordance with item 1(v)(VI) of this subparagraph and obtain another Acknowledgment of Consent to Export CRTs.

(IX) Exporters must keep copies of notifications and Acknowledgments of Consent to Export CRTs for a period of three years following receipt of the Acknowledgment.

2. Requirements for used CRT processing

Used, broken CRTs undergoing CRT processing as defined in Rule 0400-12-01-.01(2)(a) are not solid wastes if they meet the following requirements:

(i) Storage

Used, broken CRTs undergoing processing are subject to the requirement of subpart 1(iv) of this subparagraph.

(ii) Processing

(I) All activities specified in paragraphs (2) and (3) of the definition of ``CRT processing" in Rule ~~1200-01-11-.01~~ 0400-12-01-.01(2)(a) must be performed within a building with a roof, floor, and walls; and

(II) No activities may be performed that use temperatures high enough to volatilize lead from CRTs.

3. Processed CRT glass sent to CRT glass making or lead smelting

Glass from used CRTs that is destined for recycling at a CRT glass manufacturer or a lead smelter after processing is not a solid waste unless it is speculatively accumulated as defined in subpart (1)(a)3(viii) of this rule.

4. Use constituting disposal

Glass from used CRTs that is used in a manner constituting disposal must comply with the requirements of Rule ~~1200-01-11-.09~~ 0400-12-01-.09(3) instead of the requirements of this subparagraph.

(c) Conditional Exclusion for Used, Intact Cathode Ray Tubes (CRTs) Exported for Recycling [40 CFR 261.40]

[Note: The implementation of this subparagraph ~~[Rule 0400-12-01-.02(6)(c), Conditional Exclusion for Used, Intact Cathode Ray Tubes (CRTs)~~ remains the responsibility of EPA.]

Used, intact CRTs exported for recycling are not solid wastes if they meet the notice and consent conditions of subpart (b)1(v) of this paragraph, and if they are not speculatively accumulated as defined in subpart (1)(a)3(viii) of this rule.

(d) Notification and Recordkeeping for Used, Intact Cathode Ray Tubes (CRTs) Exported for Reuse [40 CFR 261.41]

[Note: The implementation of this subparagraph ~~(Rule 0400-12-01-.02(6)(d)) Notification and Recordkeeping for Used, Intact Cathode Ray Tubes (CRTs)~~ remains the responsibility of EPA.]

1. Persons who export used, intact CRTs for reuse must send a one-time notification to the Regional Administrator. The notification must include a statement that the notifier plans to export used, intact CRTs for reuse, the notifier's name, address, and EPA ID number (if applicable) and the name and phone number of a contact person.

2. Persons who export used, intact CRTs for reuse must keep copies of normal business records, such as contracts, demonstrating that each shipment of exported CRTs will be reused. This documentation must be retained for a period of at least three years from the date the CRTs were exported.

Authority: T.C.A. §§ 68-212-101 et seq. and 4-5-201 et seq.

~~1200-01-11-.03~~ 0400-12-01-.03 Notification Requirements and Standards Applicable to Generators of Hazardous Wastes.

(1) General [40 CFR 262 Subpart A]

(a) Purpose, Scope, and Applicability [40 CFR 262.10 and 262.70]

1. These regulations establish standards for generators of hazardous waste in Tennessee.

2. Rule ~~1200-01-11-.02~~ 0400-12-01-.02(1)(e)3 and 4 must be used to determine the applicability of provisions of this rule that are dependent on calculations of the quantity of hazardous waste generated per month.

3. A generator who treats, stores, or disposes of hazardous waste on-site must only comply with the following portions of this rule with respect to that waste: subparagraph (b) of this paragraph for determining whether or not he has a hazardous waste, paragraph (2) for notifying and subparagraph (c) of this paragraph for obtaining an installation identification number, subparagraph (4)(e) for accumulation of hazardous waste, parts (5)(a)3 and 4 for recordkeeping, subparagraph (5)(b) for annual reporting, and subparagraph (5)(e) for additional reporting; and if applicable, Rule ~~1200-01-11-.02~~ 0400-12-01-.02(1)(d)2(ii)(II) for farmers.

(Note: A generator who treats, stores, or disposes of hazardous waste on-site must comply with the applicable standards and permit requirements set forth in Rules ~~1200-01-11-.05~~ 0400-12-01-.05, .06, .07, .09 and .10.)

4. ~~(Reserved) [40 CFR 262.10(d)]~~ Any person who exports or imports wastes that are considered hazardous under U.S. national procedures to or from the countries listed in subparagraph (7)(i) of this rule for recovery must comply with 40 CFR Part 262, Subpart H. A waste is considered hazardous under U.S. national procedures if the waste meets the Federal definition of hazardous waste in 40 CFR 261.3 and is subject to either the Federal RCRA manifesting requirements at 40 CFR Part 262, Subpart B, the universal waste management standards of 40 CFR Part 273 or Rule 0400-12-01-.12, or the export requirements in the spent lead-acid battery management standards of 40 CFR Part 266, Subpart G, or part (7)(a)1 of Rule 0400-12-01-.09.

5. Any person who imports hazardous waste into the state from a foreign country must comply with the standards applicable to generators established in this rule.

6. A farmer who generates waste pesticides which are hazardous wastes and who complies with all of the requirements of Rule ~~1200-01-11-.02~~ 0400-12-01-.02(1)(d)2(ii)(II) is not required to comply with other standards in this rule or Rules ~~1200-01-11-.05~~ 0400-12-01-.05, .06, .07 or .10 with respect to such pesticides.

7. A person who generates a hazardous waste as defined by Rule ~~1200-01-11-.02~~ 0400-12-01-.02 is subject to the compliance requirements and penalties prescribed in T.C.A. §§ 68-212-111 through 68-212-115 of the Act if he does not comply with the requirements of this rule.

8. An owner or operator who initiates a shipment of hazardous waste from a treatment, storage, or disposal facility must comply with the generator standards established in this rule.

(Note: The provisions of subparagraph (4)(e) are applicable to the on-site accumulation of hazardous waste by generators. Therefore, the provisions of subparagraph (4)(e) only apply to owners or operators who are shipping hazardous waste which they generated at that facility.)

9. A generator who is a conditionally - exempt small quantity generator as defined in Rule

~~1200-01-11-.02~~ 0400-12-01-.02(1)(e) is subject to the requirements of paragraphs (2) through (6) of this rule only to the extent set forth in Rule ~~1200-01-11-.02~~ 0400-12-01-.02(1)(e).

10. Persons responding to an explosives or munitions emergency in accordance with Rule ~~1200-01-11-.05~~ 0400-12-01-.05(1)(b)2(vii)(I)IV or (IV) or Rule ~~1200-01-11-.06~~ 0400-12-01-.06(1)(b)2(vii)(I)IV or (IV) and Rule ~~1200-01-11-.07~~ 0400-12-01-.07(1)(b)5(i)(IV) or (iii) are not required to comply with the standards of this rule.

11. The laboratories owned by an eligible academic entity that chooses to be subject to the requirements of paragraph (12) of this rule are not subject to (for purposes of this part, the terms "laboratory" and "eligible academic entity" shall have the meaning as defined in paragraph (12) of this rule):

(i) The requirements of subparagraph (b) of this paragraph and part (4)(e)5 of this rule, for large quantity generators and small quantity generators, except as provided in paragraph (12) of this rule; and

(ii) The conditions of Rule 0400-12-01-.02(1)(e)2, for conditionally exempt small quantity generators, except as provided in paragraph (12) of this rule.

Note 1: The provisions of subparagraph (4)(e) of this rule are applicable to the on-site accumulation of hazardous waste by generators. Therefore, the provisions of subparagraph (4)(e) of this rule only apply to owners or operators who are shipping hazardous waste which they generated at that facility.

Note 2: A generator who treats, stores, or disposes of hazardous waste on-site must comply with the applicable standards and permit requirements set forth in Rules 0400-12-01-.05, .06, .07, .09 and .10.)

(b) Hazardous Waste Determination [40 CFR 262.11]

A person who generates a solid waste, as defined in Rule ~~1200-01-11-.02~~ 0400-12-01-.02(1)(b), must determine if that waste is a hazardous waste using the following method:

1. He should first determine if the waste is excluded from regulation under Rule ~~1200-01-11-.02~~ 0400-12-01-.02(1)(d).

2. He must then determine if the waste is listed as a hazardous waste in Rule ~~1200-01-11-.02~~ 0400-12-01-.02(4).

(Note: Even if the waste is listed, the generator still has an opportunity under 40 CFR 260.22 to demonstrate to the EPA Regional Administrator that the waste from his particular facility or operation is not a hazardous waste.)

3. For purposes of compliance with Rule ~~1200-01-11-.10~~ 0400-12-01-.10, or if the waste is not listed in Rule ~~1200-01-11-.02~~ 0400-12-01-.02(4), the generator must then determine whether the waste is identified in Rule ~~1200-01-11-.02~~ 0400-12-01-.02(3) by either:

(i) Testing the waste according to the methods set forth in Rule ~~1200-01-11-.02~~ 0400-12-01-.02, or according to an equivalent method approved by the Commissioner under Rule ~~1200-01-11-.01~~ 0400-12-01-.01(3)(b); or

(ii) Applying knowledge of the hazard characteristic of the waste in light of the materials or the processes used.

4. If the waste is determined to be hazardous, the generator must refer to Rules ~~1200-01-11-.02~~ 0400-12-01-.02, .05, .06, .09, .10 and .12 for possible exclusions or restrictions pertaining to management of the specific waste.

5. This subparagraph does not apply to individual wastewaters streams as described in ~~Rule 1200-01-11-.03~~ part (2)(a)2 of this rule in cases where the generator makes a hazardous waste determination on the conglomerate flow. A proper determination of the conglomerate flow must include both an evaluation of the hazardous waste characteristics of the conglomerate flow as defined in Rule ~~1200-01-11-.02~~ 0400-12-01-.02(3) as well as an evaluation of the facility's wastewater generating processes to confirm the presence or absence of listed hazardous wastewaters as defined in Rule ~~1200-01-11-.02~~ 0400-12-01-.02(4) in the wastewater.

(Comment: This provision does not supercede any applicable exclusion from recordkeeping, notification, or reporting requirements for hazardous waste otherwise specified in this rule.)

(c) Installation Identification Numbers [40 CFR 262.12]

1. A generator must not treat, store, dispose of, transport, or offer for transportation, hazardous waste without having received an installation identification number from the Commissioner.

2. A generator who has not received an installation identification number may obtain one by notifying the Department pursuant to paragraph (2) of this rule. Upon receipt of the notification, the Department will assign an installation identification number to the generator.

3. A generator must not offer his hazardous waste to transporters who do not have a valid hazardous waste permit from the Department to transport hazardous waste in Tennessee (see Rule ~~1200-01-11-.04~~ 0400-12-01-.04(2)), or to treatment, storage, or disposal facilities that have not received an installation identification number.

(2) Notification

(a) Applicability

1. Each person who generates a hazardous waste as defined in Rule ~~1200-01-11-.02~~ 0400-12-01-.02(1)(c) must notify the Department, describing his wastes and his activities regarding them, according to subparagraphs (b) through (e) of this paragraph, except as parts 2, 3, and 4 of this subparagraph and Rules ~~1200-01-11-.02~~ 0400-12-01-.02(1)(d)1, 2, 4, 5, and 7, (e) and (g) provide otherwise.

2. A person shall not be required to notify with regard to each individual hazardous waste stream generated which is piped along with other wastes to an on-site wastewater treatment facility or piped to a publicly owned treatment works (POTW) for treatment. However, if the conglomerate waste stream delivered by the collection system to the on-site wastewater treatment facility or to the POTW is a hazardous waste as defined in Rule ~~1200-01-11-.02~~ 0400-12-01-.02, then the generator must notify with regard to that waste stream and file an annual report in accordance with ~~Rule 1200-01-11-.03~~ subparagraph (5)(b) of this rule.

3. A generator shall not be required to notify with regard to a hazardous waste if he has already notified the Department with regard to that waste under emergency rules promulgated earlier under the Act.

4. A generator shall not be required to notify with regard to those hazardous wastes generated by analytical laboratory operations which are properly (i.e., in accordance with safe disposal procedures and local sewer use ordinances) discharged to the collection sewer system of a publicly-owned treatment works.

(Comment: This exclusion from notification requirements is not intended to encourage

the discharge of hazardous waste to a sewer nor does it exclude the laboratory from having to comply with federal, state, or local pretreatment or sewer use requirements.)

5. Small quantity generators who generate more than 100 kilograms (220 pounds) of hazardous wastes in a calendar month must notify according to this paragraph.

(b) Existing Generators

Except as subparagraph (a) of this paragraph provides otherwise, a person who is a generator of a waste on the effective date of the regulations established under Rule ~~1200-01-11-.02~~ 0400-12-01-.02 which identify that waste as a hazardous waste subject to the requirements of this paragraph, must notify the Department within 90 days of that date. Such notification must be submitted on generator notification forms provided by the Department. The form must be completed according to the instructions accompanying it.

(c) New Generators

Except as subparagraphs (a) and (e) of this paragraph provide otherwise, a person who becomes a generator of a waste after the effective date of regulations established under Rule ~~1200-01-11-.02~~ 0400-12-01-.02 which identify that waste as a hazardous waste subject to the requirements of this paragraph, must notify the Department within 90 days after the date of initial generation. Such notification must be submitted on generator notification forms provided by the Department. The form must be completed according to the instructions accompanying it.

(d) Changes in Generator Data

The generator shall be responsible for maintaining an up-to-date notification file by notifying the Department in writing of significant changes in the information submitted within 30 days after such changes. (The Department shall, upon request, grant up to 60 days additional time in cases where retesting of the waste is deemed necessary.) Such changes shall include, but not be limited to, changes in ownership or operation of the generating facility or operation, or other reported administrative data.

(e) Special Cases

Except as subparagraph (a) of this paragraph provides otherwise:

1. Persons who generate hazardous wastes at more than one location in Tennessee shall file notification for each such generating location.

2. A group of generating installations located at a single site under the ownership or operation of one person may file a single notification.

3. Generators who operate on a job-shop basis shall file notification on their current operations, indicating on the form that they are a job-shop type of operation and generally describing their capabilities and operations and the types of wastes they characteristically produce.

(3) The Manifest [40 CFR 262 Subpart B]

(a) General Requirements [40 CFR 262.20]

1. (i) A generator who transports, or offers for transport, a hazardous waste for offsite treatment, storage or disposal or a treatment, storage, and disposal facility who offers for transport a rejected hazardous waste load, must prepare a Manifest (OMB Control Number 2050-0039) on EPA Form 8700-22, and, if necessary, EPA Form 8700-22A, according to the instructions included in Appendix I in ~~Rule 0400-12-01-.03(9)(a)~~ subparagraph (13)(a) of this rule.

(ii) The revised Manifest form and procedures in subparagraph (2)(a) of Rule 0400-12-01-.01, subparagraph (1)(g) of Rule ~~1200-01-11-.02~~ 0400-12-01-.02, subparagraphs (3)(a), (3)(b), (3)(h), (4)(c), (4)(e), (6)(e), and (7)(a) and Appendix I of subparagraph ~~(9)(a) of Rule 0400-12-01-.03~~ (13)(a) of this rule, shall become effective September 5, 2006.

2. A generator must designate on the Manifest one facility which is permitted to handle the waste described on the Manifest.

3. A generator may also designate on the Manifest one alternate facility which is permitted to handle his waste in the event an emergency prevents delivery of the waste to the primary designated facility.

4. If the transporter is unable to deliver the hazardous waste to the designated facility or the alternate facility, the generator must either designate another facility or instruct the transporter to return the waste.

5. The requirements of this paragraph do not apply to hazardous waste produced by generators of greater than 100 kg but less than 1000 kg in a calendar month where:

(i) The waste is reclaimed under a contractual agreement pursuant to which:

(I) The type of waste and frequency of shipments are specified in the agreement;

(II) The vehicle used to transport the waste to the recycling facility and to deliver regenerated material back to the generator is owned and operated by the reclaimer of the waste; and

(ii) The generator maintains a copy of the reclamation agreement in his files for a period of at least three years after termination or expiration of the agreement.

6. The requirements of this paragraph and part (4)(c)2 of this rule do not apply to the transport of hazardous wastes on a public or private right-of-way within or along the border of contiguous property under the control of the same person, even if such contiguous property is divided by a public or private right-of-way. Notwithstanding Rule ~~1200-01-11-.04~~ 0400-12-01-.04(1)(a)1, the generator or transporter must comply with the requirements for transporters set forth in Rule ~~1200-01-11-.04~~ 0400-12-01-.04(4)(a) and (b) in the event of a discharge of hazardous waste on a public or private right-of-way.

(b) Manifest Tracking Numbers, Manifest Printing, and Obtaining Manifests [40 CFR 262.21]

1. The Manifest to be used must be issued by EPA or approved by the EPA Director of the Office of Solid Waste as set forth in 40 CFR 262.21.

(Note: 40 CFR 262.21 provides that:

(a) (1) A registrant may not print, or have printed, the manifest for use or distribution unless it has received approval from the EPA Director of the Office of Solid Waste to do so under paragraphs (c) and (e) of this section.

(2) The approved registrant is responsible for ensuring that the organizations identified in its application are in compliance with the procedures of its approved application and the requirements of this section. The registrant is responsible for assigning manifest tracking numbers to its manifests.

(b) A registrant must submit an initial application to the EPA Director of the Office of

Solid Waste that contains the following information:

(1) Name and mailing address of registrant;

(2) Name, telephone number and email address of contact person;

(3) Brief description of registrant's government or business activity;

(4) EPA identification number of the registrant, if applicable;

(5) Description of the scope of the operations that the registrant plans to undertake in printing, distributing, and using its manifests, including:

(i) A description of the printing operation. The description should include an explanation of whether the registrant intends to print its manifests in-house (i.e., using its own printing establishments) or through a separate (i.e., unaffiliated) printing company. If the registrant intends to use a separate printing company to print the manifest on its behalf, the application must identify this printing company and discuss how the registrant will oversee the company. If this includes the use of intermediaries (e.g., prime and subcontractor relationships), the role of each must be discussed. The application must provide the name and mailing address of each company. It also must provide the name and telephone number of the contact person at each company.

(ii) A description of how the registrant will ensure that its organization and unaffiliated companies, if any, comply with the requirements of this section. The application must discuss how the registrant will ensure that a unique manifest tracking number will be pre-printed on each manifest. The application must describe the internal control procedures to be followed by the registrant and unaffiliated companies to ensure that numbers are tightly controlled and remain unique. In particular, the application must describe how the registrant will assign manifest tracking numbers to its manifests. If computer systems or other infrastructure will be used to maintain, track, or assign numbers, these should be indicated. The application must also indicate how the printer will pre-print a unique number on each form (e.g., crash or press numbering). The application also must explain the other quality procedures to be followed by each establishment and printing company to ensure that all required print specifications are consistently achieved and that printing violations are identified and corrected at the earliest practicable time.

(iii) An indication of whether the registrant intends to use the manifests for its own business operations or to distribute the manifests to a separate company or to the general public (e.g., for purchase).

(6) A brief description of the qualifications of the company that will print the manifest. The registrant may use readily available information to do so (e.g., corporate brochures, product samples, customer references, documentation of ISO certification), so long as such information pertains to the establishments or company being proposed to print the manifest.

(7) Proposed unique three-letter manifest tracking number suffix. If the registrant is approved to print the manifest, the registrant must use this

suffix to pre-print a unique manifest tracking number on each manifest.

(8) A signed certification by a duly authorized employee of the registrant that the organizations and companies in its application will comply with the procedures of its approved application and the requirements of this Section and that it will notify the EPA Director of the Office of Solid Waste of any duplicated manifest tracking numbers on manifests that have been used or distributed to other parties as soon as this becomes known.

(c) EPA will review the application submitted under paragraph (b) of this section and either approve it or request additional information or modification before approving it.

(d) (1) Upon EPA approval of the application under paragraph (c) of this section, EPA will provide the registrant an electronic file of the manifest, continuation sheet, and manifest instructions and ask the registrant to submit three fully assembled manifests and continuation sheet samples, except as noted in paragraph (d)(3) of this section. The registrant's samples must meet all of the specifications in paragraph (f) of this section and be printed by the company that will print the manifest as identified in the application approved under paragraph (c) of this section.

(2) The registrant must submit a description of the manifest samples as follows:

(i) Paper type (i.e., manufacturer and grade of the manifest paper);

(ii) Paper weight of each copy;

(iii) Ink color of the manifest's instructions. If screening of the ink was used, the registrant must indicate the extent of the screening; and

(iv) Method of binding the copies.

(3) The registrant need not submit samples of the continuation sheet if it will print its continuation sheet using the same paper type, paper weight of each copy, ink color of the instructions, and binding method as its manifest form samples.

(e) EPA will evaluate the forms and either approve the registrant to print them as proposed or request additional information or modification to them before approval. EPA will notify the registrant of its decision by mail. The registrant cannot use or distribute its forms until EPA approves them. An approved registrant must print the manifest and continuation sheet according to its application approved under paragraph (c) of this section and the manifest specifications in paragraph (f) of this section. It also must print the forms according to the paper type, paper weight, ink color of the manifest instructions and binding method of its approved forms.

(f) Paper manifests and continuation sheets must be printed according to the following specifications:

(1) The manifest and continuation sheet must be printed with the exact format and appearance as EPA Forms 8700–22 and 8700–22A, respectively. However, information required to complete the manifest may be pre-printed on the manifest form.

(2) A unique manifest tracking number assigned in accordance with a numbering system approved by EPA must be pre-printed in Item 4 of the manifest. The tracking number must consist of a unique three-letter suffix following nine digits.

(3) The manifest and continuation sheet must be printed on 8 1/2 x 11-inch white paper, excluding common stubs (e.g., top- or side-bound stubs). The paper must be durable enough to withstand normal use.

(4) The manifest and continuation sheet must be printed in black ink that can be legibly photocopied, scanned, and faxed, except that the marginal words indicating copy distribution must be in red ink.

(5) The manifest and continuation sheet must be printed as six-copy forms. Copy-to-copy registration must be exact within 1/32nd of an inch. Handwritten and typed impressions on the form must be legible on all six copies. Copies must be bound together by one or more common stubs that reasonably ensure that they will not become detached inadvertently during normal use.

(6) Each copy of the manifest and continuation sheet must indicate how the copy must be distributed, as follows:

(i) Page 1 (top copy): "Designated facility to destination State (if required)".

(ii) Page 2: "Designated facility to generator State (if required)".

(iii) Page 3: "Designated facility to generator".

(iv) Page 4: "Designated facility's copy".

(v) Page 5: "Transporter's copy".

(vi) Page 6 (bottom copy): "Generator's initial copy".

(7) The instructions in the appendix to 40 CFR part 262 must appear legibly on the back of the copies of the manifest and continuation sheet as provided in this paragraph (f). The instructions must not be visible through the front of the copies when photocopied or faxed.

(i) Manifest Form 8700–22.

(A) The "Instructions for Generators" on Copy 6;

(B) The "Instructions for International Shipment Block" and "Instructions for Transporters" on Copy 5; and

(C) The "Instructions for Treatment, Storage, and Disposal Facilities" on Copy 4.

(ii) Manifest Form 8700–22A.

(A) The "Instructions for Generators" on Copy 6;

(B) The "Instructions for Transporters" on Copy 5; and

(C) The "Instructions for Treatment, Storage, and Disposal Facilities" on Copy 4.

(g) (1) A generator may use manifests printed by any source so long as the source of the printed form has received approval from EPA to print the manifest under paragraphs (c) and (e) of this section. A registered source may be a:

(i) State agency;

(ii) Commercial printer;

(iii) Hazardous waste generator, transporter or TSDF; or

(iv) Hazardous waste broker or other preparer who prepares or arranges shipments of hazardous waste for transportation.

(2) A generator must determine whether the generator state or the consignment state for a shipment regulates any additional wastes (beyond those regulated Federally) as hazardous wastes under these states' authorized programs. Generators also must determine whether the consignment state or generator state requires the generator to submit any copies of the manifest to these states. In cases where the generator must supply copies to either the generator's state or the consignment state, the generator is responsible for supplying legible photocopies of the manifest to these states.

(h) (1) If an approved registrant would like to update any of the information provided in its application approved under paragraph (c) of this section (e.g., to update a company phone number or name of contact person), the registrant must revise the application and submit it to the EPA Director of the Office of Solid Waste, along with an indication or explanation of the update, as soon as practicable after the change occurs. The Agency either will approve or deny the revision. If the Agency denies the revision, it will explain the reasons for the denial, and it will contact the registrant and request further modification before approval.

(2) If the registrant would like a new tracking number suffix, the registrant must submit a proposed suffix to the EPA Director of the Office of Solid Waste, along with the reason for requesting it. The Agency will either approve the suffix or deny the suffix and provide an explanation why it is not acceptable.

(3) If a registrant would like to change the paper type, paper weight, ink color of the manifest instructions, or binding method of its manifest or continuation sheet subsequent to approval under paragraph (e) of this section, then the registrant must submit three samples of the revised form for EPA review and approval. If the approved registrant would like to use a new printer, the registrant must submit three manifest samples printed by the new printer, along with a brief description of the printer's qualifications to print the manifest. EPA will evaluate the manifests and either approve the registrant to print the forms as proposed or request additional information or modification to them before approval. EPA will notify the registrant of its decision by mail. The registrant cannot use or distribute its revised forms until EPA approves them.

(i) If, subsequent to its approval under paragraph (e) of this section, a registrant typesets its manifest or continuation sheet instead of using the electronic file of the forms provided by EPA, it must submit three samples of the manifest or continuation sheet to the registry for approval. EPA will evaluate the manifests or

continuation sheets and either approve the registrant to print them as proposed or request additional information or modification to them before approval. EPA will notify the registrant of its decision by mail. The registrant cannot use or distribute its typeset forms until EPA approves them.

(j) EPA may exempt a registrant from the requirement to submit form samples under paragraph (d) or (h)(3) of this section if the Agency is persuaded that a separate review of the registrant's forms would serve little purpose in informing an approval decision (e.g., a registrant certifies that it will print the manifest using the same paper type, paper weight, ink color of the instructions and binding method of the form samples approved for some other registrant). A registrant may request an exemption from EPA by indicating why an exemption is warranted.

(k) An approved registrant must notify EPA by phone or email as soon as it becomes aware that it has duplicated tracking numbers on any manifests that have been used or distributed to other parties.

(l) If, subsequent to approval of a registrant under paragraph (e) of this section, EPA becomes aware that the approved paper type, paper weight, ink color of the instructions, or binding method of the registrant's form is unsatisfactory, EPA will contact the registrant and require modifications to the form.

(m) (1) EPA may suspend and, if necessary, revoke printing privileges if we find that the registrant:

(i) Has used or distributed forms that deviate from its approved form samples in regard to paper weight, paper type, ink color of the instructions, or binding method; or

(ii) Exhibits a continuing pattern of behavior in using or distributing manifests that contain duplicate Manifest Tracking Numbers.

(2) EPA will send a warning letter to the registrant that specifies the date by which it must come into compliance with the requirements. If the registrant does not come in compliance by the specified date, EPA will send a second letter notifying the registrant that EPA has suspended or revoked its printing privileges. An approved registrant must provide information on its printing activities to EPA if requested.)

(c) Number of Copies [40 CFR 262.22]

The manifest consists of at least the number of copies which will provide the generator, each transporter, and the owner or operator of the designated facility with one copy each for their records and another copy to be returned to the generator.

(d) Use of the Manifest [40 CFR 262.23]

1. The generator shall:

(i) Ensure, before signing the manifest that, in accordance with ~~Rule 0400-12-01-.03(9)(a)~~ subparagraph (13)(a) of this rule, under the title Appendix I "Generators", the Transporter Company name (item 6) and the U.S. EPA Identification Number are the same as the transporter company name and the U.S. EPA Identification Number on the Tennessee Hazardous Waste Transporter Permit (copies are permitted) accompanying the motor vehicle transporter; and

(ii) Sign the manifest certification by hand; and

(iii) Obtain the handwritten signature of the initial transporter (Transporter 1) and date of acceptance on the manifest; and

(iv) Retain one copy, in accordance with part (5)(a)1 of this rule.

2. The generator must give the transporter the remaining copies of the manifest.

3. For shipments of hazardous waste within the United States solely by water (bulk shipments only), the generator must send three copies of the manifest dated and signed in accordance with this subparagraph to the owner or operator of the designated facility or the last water (bulk shipment) transporter to handle the waste in the United States if exported by water. Copies of the manifest are not required for each transporter.

4. For rail shipments of hazardous waste within the United States which originate at the site of generation, the generator must send at least three copies of the manifest dated and signed in accordance with this subparagraph to:

(i) The next non-rail transporter, if any; or

(ii) The designated facility if transported solely by rail; or

(iii) The last rail transporter to handle the waste in the United States if exported by rail.

5. For shipments of hazardous waste to a designated facility in an authorized State which has not yet obtained authorization to regulate that particular waste as hazardous, the generator must assure that the designated facility agrees to sign and return the manifest to the generator, and that any out-of-state transporter signs and forwards the manifest to the designated facility.

6. For rejected shipments of hazardous waste or container residues contained in non-empty containers that are returned to the generator by the designated facility (following the procedures of Rule 0400-12-01-.05(5)(c)6 or Rule 0400-12-01-.06(5)(c)6), the generator must:

(i) Sign either:

(I) Item 20 of the new manifest if a new manifest is used for the returned shipment; or

(II) Item 18c of the original manifest if the original manifest is used for the returned shipment;

(ii) Provide the transporter a copy of the manifest;

(iii) Within thirty (30) days of delivery of the rejected shipment or container residues contained in non-empty containers, send a copy of the manifest to the designated facility that returned the shipment to the generator; and

(iv) Retain at the generator's site a copy of each manifest for at least five (5) years from the date of delivery.

(Note: See Rule ~~1200-01-11-.04~~ 0400-12-01-.04(3)(a)5 and 6 for special provisions for rail or water (bulk shipment) transporters.)

(e) (RESERVED) [40 CFR 262.24]

(f) (RESERVED) [40 CFR 262.25]

(g) (RESERVED) [40 CFR 262.26]

(h) Waste Minimization Certification [40 CFR 262.27]

A generator who initiates a shipment of hazardous waste must certify to one of the following statements in Item 15 of the Uniform Hazardous Waste Manifest:

1. "I am a large quantity generator. I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment;" or

2. "I am a small quantity generator. I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford."

(4) Pre-transport Requirements [40 CFR 262 Subpart C]

(a) Packaging [40 CFR 262.30]

Before transporting hazardous waste or offering hazardous waste for transportation off-site, a generator must package the waste in accordance with the applicable DOT regulations on packaging under 49 CFR Parts 173, 178, and 179.

(b) Labeling [40 CFR 262.31]

Before transporting or offering hazardous waste for transportation off-site, a generator must label each package in accordance with the applicable DOT regulations on hazardous materials under 49 CFR Part 172.

(c) Marking

1. Before transporting or offering hazardous waste for transportation off-site, a generator must mark each package of hazardous waste in accordance with the applicable DOT regulations on hazardous materials under 49 CFR Part 172.

2. Before transporting hazardous waste or offering hazardous waste for transportation off-site, a generator must mark each container of 119 gallons or less used in such transportation with the following words and information in accordance with the requirements of 49 CFR 172.304:

HAZARDOUS WASTE—Federal Law Prohibits Improper Disposal. If found, contact the nearest police or public safety authority or the U. S. Environmental Protection Agency.

Generator's Name and Address _____

Generator's EPA Identification Number _____

Manifest Tracking Number _____

The generator shall add as indicated his name and address and the number assigned to the manifest accompanying this container. The marking required in this subparagraph must be (1) durable, in English, and printed on or affixed to the surface of a package or on a label, tag, or sign; (2) displayed on a background of sharply contrasting color; (3) unobscured by labels or attachments; and (4) located away from any other marking (such as advertising) that could substantially reduce its effectiveness.

(d) Placarding [40 CFR 262.33]

Before transporting hazardous waste or offering hazardous waste for transportation off-site, a generator must placard or offer the initial transporter the appropriate placards according to Department of Transportation regulations for hazardous materials under 49 CFR 172 Subpart F.

(e) Accumulation Time [40 CFR 262.34]

1. For purposes of this subparagraph, except as used in part 5, the term "accumulate" shall refer to both the storage and treatment of hazardous wastes generated on-site. For purposes of part 5 of this subparagraph, the term "accumulate" shall refer only to collecting or gathering together.

2. Except as provided in parts 6, 7 and 8 of this subparagraph, a generator may accumulate hazardous waste on-site for 90 days or less without a permit or without having interim status, provided that:

(i) The waste is placed:

(I) In containers and the generator complies with the applicable requirements of Rules ~~1200-01-11-.05~~ 0400-12-01-.05(9), (27), (28), and (29), and/or

(II) In tanks and the generator complies with the applicable requirements of Rules ~~1200-01-11-.05~~ 0400-12-01-.05(10), (27), (28), and (29), except ~~Rules 1200-.05~~ part (10)(h)3 and subparagraph ~~.05~~ (10)(k) of Rule 0400-12-01-.05; and/or

(III) On drip pads and the generator complies with Rule ~~1200-01-11-.05~~ 0400-12-01-.05(23) and maintains the following records at the facility:

I. A description of procedures that will be followed to ensure that all wastes are removed from the drip pad and associated collection system at least once every 90 days; and

II. Documentation of each waste removal, including the quantity of waste removed from the drip pad and the sump or collection system and the date and time of removal; and/or

(IV) In containment buildings and the generator complies with Rule ~~1200-01-11-.05~~ 0400-12-01-.05(30), has placed its professional engineer certification that the building complies with the design standards specified in Rule ~~1200-01-11-.05~~ 0400-12-01-.05(30)(b) in the facility's operating record no later than 60 days after the date of initial operation of the unit. After February 18, 1993, PE certification will be required prior to operation of the unit. The owner or operator shall maintain the following records at the facility:

I. A written description of procedures to ensure that each waste volume remains in the unit for no more than 90 days, a written description of the waste generation and management practices for the facility showing that they are consistent with respecting the 90 day limit, and documentation that the procedures are complied with; or

II. Documentation that the unit is emptied at least once every 90 days.

In addition, such a generator is exempt from all the requirements in paragraphs (7) and (8) of Rule ~~1200-01-11-.05~~ 0400-12-01-.05, except for subparagraphs (b)

and (e) of paragraph (7).

(ii) The date upon which each period of accumulation begins is clearly marked and visible for inspection on each container;

(iii) While being accumulated on-site, each container and tank is labeled or marked clearly with the words, "Hazardous Waste";

(iv) The generator complies with the requirements for owners or operators in parts (2)(f)1, 3, and 4, subparagraph (2)(g) and paragraphs (3) and (4) of Rule ~~1200-01-11-.05~~ 0400-12-01-.05 and with ~~subpart (1)(g)1(v) of~~ all applicable requirements under Rule ~~1200-01-11-.10~~ 0400-12-01-.10; and

(v) Where tanks are used, the generator maintains adequate records to verify that accumulation time is less than 90 days.

3. A generator of 1000 kilograms or greater of hazardous waste in a calendar month, or greater than 1 kilogram of acute hazardous waste listed in subparagraph (4)(b) or part (4)(d)5 of Rule 0400-12-01-.02 in a calendar month, who accumulates hazardous waste or acute hazardous waste for more than 90 days is an operator of a storage facility and is subject to the requirements of Rule ~~1200-01-11-.05~~ 0400-12-01-.05 and ~~1200-01-11-.06~~ 0400-12-01-.06 and the permit requirements of Rule ~~1200-01-11-.07~~ 0400-12-01-.07 unless he has been granted an extension to the 90-day period. Such extension may be granted by the Department if hazardous wastes must remain on-site for more than 90 days due to unforeseen, temporary, and uncontrollable circumstances. An extension of up to 30 days may be granted at the discretion of the Commissioner on a case-by-case basis.

4. A generator who removes hazardous waste from a product or new material storage tank, a product or raw material transport vehicle or vessel, a manufacturing process unit or an associated non-waste-treatment manufacturing unit directly into or onto a transport vehicle for immediate transportation to a treatment, storage, or disposal facility shall (for such process) not be considered to be "accumulating" such waste for purposes of this subparagraph.

5. (i) A generator may accumulate as much as 55 gallons of hazardous waste or one quart of acute hazardous waste listed in Rule ~~1200-01-11-.02~~ 0400-12-01-.02(4)(b) ~~(c)~~ or (4)(d)5, in containers at or near any point of generation where wastes initially accumulate, which is under the control of the operator of the process generating the waste, without a permit or interim status and without complying with part 2 of this subparagraph provided he:

(I) Complies with Rule ~~1200-01-11-.05~~ 0400-12-01-.05(9)(b), (c), and (d)1; and

(II) Marks his containers either with the words "Hazardous Waste" or with other words that identify the contents of the containers.

(ii) A generator who accumulates either hazardous waste or acute hazardous waste listed in Rule ~~1200-01-11-.02~~ 0400-12-01-.02(4)(b) ~~(c),~~ or (4)(d)5 in excess of the amount established in subpart (i) of this part at or near any point of generation must, with respect to that amount of excess waste, comply within three days with part 2 of this subparagraph or other applicable provisions of this ~~Rule~~ Chapter. During the three day period the generator must continue to comply with items (i)(I) and (II) of this part. The generator must mark the container holding the excess accumulation of hazardous waste with the date the excess amount began accumulating.

6. A small quantity generator who generates greater than 100 kilograms but less than 1000

kilograms of hazardous waste in a calendar month may accumulate hazardous waste on-site for 180 days or less without a permit or without having interim status provided that:

(i) The quantity of hazardous waste accumulated on-site never exceeds 6000 kilograms;

(ii) The generator complies with the requirements of Rule ~~1200-01-11-.05~~ 0400-12-01-.05(9), except for Rules ~~1200-01-11-.05~~ 0400-12-01-.05(9)(g) and .05(9)(i);

(iii) The generator complies with the requirements of Rule ~~1200-01-11-.05~~ 0400-12-01-.05(10)(l);

(iv) (I) Where containers are used, the date upon which each period of accumulation begins is clearly marked and visible for inspection on each container; or

(II) Where tanks are used, the generator maintains adequate records to verify that accumulation time is less than the allowed period;

(v) While being accumulated on-site, each container and tank is labeled or marked clearly with the words "Hazardous Waste";

(vi) The generator complies with the requirements for owners or operators in parts (2)(f)1, 3, and 4, and paragraph (3) of Rule ~~1200-01-11-.05~~ 0400-12-01-.05, and with ~~subpart (1)(g)1(v) of~~ all applicable requirements under Rule ~~1200-01-11-.10~~ 0400-12-01-.10; and

(vii) The generator complies with the following requirements:

(I) At all times there must be at least one employee either on the premises or on call (i.e., available to respond to an emergency by reaching the facility within a short period of time) with the responsibility for coordinating all emergency response measures specified in item (IV) of this subpart. This employee is the emergency coordinator.

(II) The generator must post the following information next to the telephone:

I. The name and telephone number of the emergency coordinator;

II. The location of fire extinguishers and spill control material, and, if present, the fire alarm; and

III. The telephone number of the fire department, unless the facility has a direct alarm.

(III) The generator must ensure that all employees are thoroughly familiar with proper waste handling and emergency procedures, relevant to their responsibilities during normal facility operations and emergencies.

(IV) The emergency coordinator or his designee must respond to any emergencies that arise. The applicable responses are as follows:

I. In the event of a fire, call the fire department or attempt to extinguish it using a fire extinguisher;

II. In the event of a spill, contain the flow of hazardous waste to the extent possible, and as soon as is practicable, clean up the hazardous waste and any contaminated materials or soil; and

III. In the event of a fire, explosion, or other release which could threaten human health outside the facility, or when the generator has knowledge that a spill has reached surface water, the generator must immediately notify the Tennessee Emergency Management Agency (using their 24-hour toll-free number 800/262-3300) and/or the National Response Center (using their 24-hour toll-free number 800/424-8802). The report must include the following information:

A. Name, address, and installation identification number of the generator;

B. Date, time, and type of incident (e.g., spill or fire);

C. Quantity and type of hazardous waste involved in the incident;

D. Extent of injuries, if any; and

E. Estimated quantity and disposition of recovered materials, if any.

7. A generator who generates greater than 100 kilograms but less than 1000 kilograms of hazardous waste in a calendar month and who must transport his waste, or offer his waste for transportation, over a distance of 200 miles or more for off-site treatment, storage, or disposal may accumulate hazardous waste on-site for 270 days or less without a permit or without having interim status provided that he complies with the requirements of part 6 of this subparagraph.

8. A small quantity generator who generates greater than 100 kilograms but less than 1000 kilograms of hazardous waste in a calendar month and who accumulates hazardous waste in quantities exceeding 6000 kg or accumulates hazardous waste for more than 180 days (or for more than 270 days if he must transport his waste, or offer his waste for transportation, over a distance of 200 miles or more) is an operator of a storage facility and is subject to the requirements of Rule ~~1200-01-11-.05~~ 0400-12-01-.05, ~~1200-01-11-.06~~ 0400-12-01-.06, and ~~1200-01-11-.07~~ 0400-12-01-.07 unless he has been granted an extension to the 180-day (or 270-day if applicable) period. Such extension may be granted by the Department if hazardous waste must remain on-site for longer than 180 days (or 270 days if applicable) due to unforeseen, temporary, and uncontrollable circumstances. An extension of up to 30 days may be granted at the discretion of the Commissioner on a case-by-case basis.

9. A generator who generates 1,000 kilograms or greater of hazardous waste per calendar month, who also generates wastewater treatment sludges from electroplating operations that meet the listing description for the Hazardous Waste Code F006, may accumulate F006 waste on-site for more than 90 days, but not more than 180 days, without a permit or without having interim status provided that:

(i) The generator has implemented pollution practices that reduce the amount of any hazardous substances, pollutants or contaminants entering F006 or otherwise released to the environment prior to its recycling;

(ii) The F006 waste is legitimately recycled through metals recovery;

(iii) No more than 20,000 kilograms of F006 waste is accumulated on-site at any one time; and

(iv) The F006 waste is managed in accordance with the following:

(I) The F006 waste is placed:

I. In containers and the generator complies with the applicable Requirements of paragraphs (9), (27), (28), and (29) of Rule ~~1200-01-11-.05~~ 0400-12-01-.05; and/or

II. In tanks and the generator complies with the applicable requirements of paragraphs (10), (27), (28), and (29) of Rule ~~1200-01-11-.05~~ 0400-12-01-.05, except part (10)(h)3 and subparagraph (10)(k) of Rule ~~1200-01-11-.05~~ 0400-12-01-.05; and/or

III. In containment buildings and the generator complies with paragraph (30) of Rule ~~1200-01-11-.05~~ 0400-12-01-.05, and has placed its professional engineer certification that the building complies with the design standards specified in subparagraph (30)(b) of Rule ~~1200-01-11-.05~~ 0400-12-01-.05 in the facility's operating record prior to operation of the unit. The owner or operator must maintain the following records at the facility:

A. A written description of procedures to ensure that the F006 waste remains in the unit for no more than 180 days, a written description of the waste generation and management practices for the facility showing than they are consistent with the 180-day limit, and documentation that the generator is complying with the procedures; or

B. Documentation that the unit is emptied at least once every 180 days.

(II) In addition, such a generator is exempt from all the requirements in paragraphs (7) and (8) of Rule ~~1200-01-11-.05~~ 0400-12-01-.05, except for subparagraphs (7)(b) and (7)(e) of Rule ~~1200-01-11-.05~~ 0400-12-01-.05.

(III) The date upon which each period of accumulation begins is clearly marked and visible for inspection of each container.

(IV) While being accumulated on-site, each container and tank is labeled or marked clearly with the words, "Hazardous Waste."

(V) The generator complies with the requirements for owners or operators in paragraphs (3) and (4) of Rule ~~1200-01-11-.05~~ 0400-12-01-.05, with subparagraph (2)(g) of Rule ~~1200-01-11-.05~~ 0400-12-01-.05, and with subpart (1)(g)1(v) of Rule ~~1200-01-11-.10~~ 0400-12-01-.10.

10. A generator who generates 1,000 kilograms or greater of hazardous waste per calendar month who also generates wastewater treatment sludges from electroplating operations that meet the listing description for the Hazardous Waste Code F006, and who must transport this waste, or offer this waste for transportation, over a distance of 200 miles or more for off-site metals recovery, may accumulate F006 waste on-site for more than 90 days, but not more than 270 days, without a permit or without having interim status if the generator complies with the requirements of subparts (i) through (iv) of part 9 of this subparagraph.

11. A generator accumulating F006 in accordance with parts 9 and 10 of this subparagraph who accumulates F006 waste on-site for more than 180 days (or more than 270 days if the generator must transport this waste, or offer this waste for transportation, over a distance of 200 miles or more), or who accumulates more than 20,000 kilograms of F006

waste on-site is an operator of a storage facility and is subject to the requirements of Rules ~~1200-01-11-.05~~ 0400-12-01-.05 and ~~1200-01-11-.06~~ 0400-12-01-.06 and the permit requirements of Rule ~~1200-01-11-.07~~ 0400-12-01-.07 unless the generator has been granted an extension to the 180-day (or 270-day if applicable) period or an exception to the 20,000 kilogram accumulation limit. Such extension and exceptions may be granted by the Division if F006 waste must remain on-site for longer than 180 days (or 270 days if applicable) or if more than 20,000 kilograms of F006 waste must remain on-site due to unforeseen, temporary, and uncontrollable circumstances. An extension of up to 30 days or an exception to the accumulation limit may be granted at the discretion of the Director of the Division of Solid Waste Management on a case-by-case basis.

12. Notwithstanding the provisions of parts 1, 4, 5, and 6 of this subparagraph, if a generator accumulates wastes in a unit that is otherwise fully subject to applicable requirements of Rules ~~1200-01-11-.05~~ 0400-12-01-.05 and/or ~~1200-01-11-.06~~ 0400-12-01-.06, then he must manage such accumulated wastes fully in accordance with those applicable requirements of Rules ~~1200-01-11-.05~~ 0400-12-01-.05 and/or ~~1200-01-11-.06~~ 0400-12-01-.06.

13. Reserved

14. Reserved

15. Reserved

16. A generator who sends a shipment of hazardous waste to a designated facility with the understanding that the designated facility can accept and manage the waste and later receives that shipment back as a rejected load or residue in accordance with the manifest discrepancy provisions of Rule ~~1200-01-11-.06~~ 0400-12-01-.06(5)(c) or Rule ~~1200-01-11-.05~~ 0400-12-01-.05(5)(c) may accumulate the returned waste on-site in accordance with parts 2 and 3 or 6, 7, and 8 of this subparagraph, depending on the amount of hazardous waste on-site in that calendar month. Upon receipt of the returned shipment, the generator must:

(i) Sign Item 18c of the manifest, if the transporter returned the shipment using the original manifest; or

(ii) Sign Item 20 of the manifest, if the transporter returned the shipment using a new manifest.

(5) Recordkeeping and Reporting

(a) Recordkeeping [40 CFR 262.40]

1. A generator must keep a copy of each manifest signed in accordance with part (3)(d)1 of this rule for three years or until he receives a signed copy from the designated facility which received the waste. This signed copy must be retained as a record for at least three years from the date the waste was accepted by the initial transporter.

2. A generator must keep a copy of each Annual Report and Exception Report for a period of at least three years from the due date of the report (March 1).

3. A generator must keep records as necessary to demonstrate compliance with subparagraph (1)(b) of this rule - to include any test results, waste analyses, or other determinations made in accordance with that subparagraph - for at least three years from the date that the waste was last sent to on-site or off-site hazardous or nonhazardous waste treatment, storage, or disposal facilities. Such records must document the basis for the hazardous waste determination, including those determinations based on the generator's knowledge of materials and processes utilized rather than on laboratory analyses. Pursuant to Rule ~~1200-01-11-.03~~ 0400-12-01-.03(2)(a)2, this requirement

does not apply to individual wastewater streams in cases where the hazardous waste determination is made on the conglomerate waste stream.

4. The periods of retention referred to in this subparagraph are extended automatically during the course of any unresolved enforcement action regarding the regulated activity or as requested by the Commissioner or Board.

(b) Annual Reporting [40 CFR 262.41]

1. A generator must submit an Annual Report to the Department by March 1 for the preceding calendar year. Such report must be submitted on forms provided by the Department, and the form must be completed according to the instructions accompanying it. The report must include, but shall not necessarily be limited to, the following information:

(i) The year covered by the report.

(ii) The name, address, telephone number, and Department-assigned installation identification number of the generator.

(iii) For each hazardous waste stream (i.e., each separate waste but not necessarily each batch or shipment of such waste) generated by the generator during the reporting year, except for those wastes identified in part 4 of this subparagraph, the following information:

(I) A descriptive name of the waste and the appropriate waste code(s) from Rule ~~1200-01-11-.02~~ 0400-12-01-.02;

(II) The methods by which the waste was managed on-site by the generator during the reporting year and the total quantities managed by each method; and

(III) For those wastes managed off-site during the reporting year:

I. The Installation Identification Number of each treatment, storage, or disposal facility, or the name and address of other places, to which the waste was sent;

II. The total quantity of the waste sent to each place and the method(s) by which it was to be managed; and

III. The Installation Identification Number(s) of those transporters whose services were used during the reporting year.

(iv) A summary of the efforts undertaken during the year to reduce volume and toxicity as required on the Tennessee annual report forms.

(v) A summary of the changes in volume and toxicity of waste actually achieved during the year as required on the Tennessee annual report forms.

(vi) The certification signed by the generator or authorized representative.

2. A generator must also submit the annual report established in part 1 of this subparagraph prior to those events, such as change of ownership or cessation of business, which would make him no longer subject to the annual reporting requirement. In such case, the report would cover the period of time that has elapsed since December 31 of the preceding calendar year.

3. Any generator who treats, stores, or disposes of hazardous waste on-site must submit an

Annual Report covering those wastes in accordance with the provisions of Rules ~~1200-01-11-.05~~ 0400-12-01-.05, .06, .07 and .09. Reporting for exports of hazardous waste is not required on the Annual Report form. A separate annual report requirement is set forth at subparagraph (6)(g) of this rule.

4. A generator shall not be required to annually report on those hazardous wastes generated by analytical laboratory operations which are properly (i.e., in accordance with safe disposal practices and local sewer use ordinances) discharged to the collection sewer system of a publicly-owned treatment works.

(Comment: This exclusion from annual reporting requirements is not intended to encourage the discharge of hazardous waste to a sewer nor does it exclude the laboratory from having to comply with federal, state, or local pretreatment or sewer use requirements.)

(c) Exception Reporting [40 CFR 262.42]

1. (i) A generator of ~~greater than~~ 1000 kilograms or greater of hazardous waste in a calendar month, or greater than 1 kg of acute hazardous waste listed in Rule 0400-12-01-.02(4)(b) or Rule 0400-12-01-.02(4)(d)5 in a calendar month, who does not receive a copy of the manifest with the handwritten signature of the owner or operator of the designated facility within 35 days of the date the waste was accepted by the initial transporter must contact the transporter and/or the owner or operator of the designated facility to determine the status of the hazardous waste.

(ii) A generator of ~~greater than~~ 1000 kilograms or greater of hazardous waste in a calendar month, or greater than 1 kg of acute hazardous waste listed in Rule 0400-12-01-.02(4)(b) or Rule 0400-12-01-.02(4)(d)5 of this rule in a calendar month, must submit an Exception Report to the EPA Regional Administrator for the Region in which the generator is located if he has not received a copy of the manifest with the handwritten signature of the owner or operator of the designed facility within 45 days of the date the waste was accepted by the initial transporter. The Exception Report must include:

(I) A legible copy of the manifest for which the generator does not have confirmation of delivery.

(II) A cover letter signed by the generator or his authorized representative explaining the efforts taken to locate the hazardous waste and the results of those efforts.

(iii) The Exception Report required by subpart (ii) of this part must be submitted to the Commissioner within 5 days after the 45-day period expires.

2. A generator of greater than 100 kilograms but less than 1000 kilograms of hazardous waste in a calendar month who does not receive a copy of the manifest with the handwritten signature of the owner or operator of the designated facility within 60 days of the date the waste was accepted by the initial transporter must submit a legible copy of the manifest, with some indication that the generator has not received confirmation of delivery, to the Commissioner.

3. For rejected shipments of hazardous waste or container residues contained in non-empty containers that are forwarded to an alternate facility by a designated facility using a new manifest (following the procedure of Rule 0400-12-01-.05(5)(c)5(i) through (vi) or Rule 0400-12-01-.06(5)(c)5(i) through (vi), the generator must comply with the requirements of Part 1 or 2 of this subparagraph, as applicable, for the shipment forwarding the material from the designated facility to the alternate facility instead of for the shipment from the generator to the designated facility. For purposes of Part 1 or 2 of this subparagraph for

a shipment forwarding such waste to an alternate facility by a designated facility:

(i) The copy of the manifest received by the generator must have the handwritten signature of the owner or operator of the alternate facility in place of the signature of the owner or operator of the designated facility; and

(ii) The 35/45/60-day time frames begin the date the waste was accepted by the initial transporter forwarding the hazardous waste shipment from the designated facility to the alternate facility.

(Note: The submission need only be a handwritten or typed note on the manifest itself, or on an attached sheet of paper, stating that the return copy was not received.)

(d) Special Requirements for Generators of Between 100 and 1000 kg/month [40 CFR 262.44]

A generator of greater than 100 kilograms but less than 1000 kilograms of hazardous waste in a calendar month is exempt from the requirement under part (a)2 of this paragraph to maintain copies of Exception Reports and the requirements of part (c)1 of this paragraph.

(e) Additional Reporting [40 CFR 262.43]

The Commissioner, as he deems necessary under T.C.A. §68-212-107 of the Hazardous Waste Management Act, may require generators to furnish additional reports concerning the quantities and disposition of wastes identified or listed in Rule ~~1200-01-11-.02~~ 0400-12-01-.02.

(6) Hazardous Waste Reduction Plan

(a) Applicability

1. All generators of hazardous waste, except those generators who are conditionally exempt small quantity generators, as determined by subparagraph (1)(e) of Rule ~~1200-01-11-.02~~ 0400-12-01-.02, for all twelve months of the calendar year, shall complete a hazardous waste reduction plan in accordance with the requirements of subparagraph (b) of this paragraph. After completion of a plan, the generator shall maintain a current copy of the plan at the generating facility. The plan and the annual progress reports under subparagraph (c) of this paragraph shall be made available, upon request, to a representative of the department at any reasonable time. The department may make use of the information as it deems necessary to carry out its duties under this rule.

2. For the purposes of this paragraph, a generator shall permit the commissioner to inspect the hazardous waste reduction plan. The generator shall permit any officer, employee or representative of the department at all reasonable times to have access to the plan. The generator shall furnish a copy of the plan upon request to the commissioner.

3. Large and small quantity generators shall have three years from the date they first became a large or small quantity generator, to complete their waste reduction plan. Only large and small quantity hazardous waste generators are required to have a hazardous waste reduction plan.

4. Hazardous waste streams resulting from one-time generation events, such as accidental spills, equipment modification, plant closure, etc., are not subject to the requirements of this paragraph.

(b) Contents of Plan

1. A hazardous waste reduction plan shall include, at a minimum, the following:

(i) A dated and signed written policy articulating management support for the generator's hazardous waste reduction plan;

(ii) The scope and objectives of the plan, including the evaluation of technologies, procedures and personnel training programs to ensure that unnecessary waste is not generated and to encourage hazardous waste reduction. Specific goals shall be set for hazardous waste reduction, as described in subparagraphs (b) through (d) of the paragraph;

(iii) A description of technically and economically practical hazardous waste reduction options to be implemented and planned schedule for implementation. These options shall be based on an internal analysis of hazardous waste streams conducted to review individual processes or facilities and other activities where waste may be generated and identify opportunities to reduce or eliminate waste generation. Such analyses shall evaluate data on the types, amount and hazardous constituents of waste generated, where and why that waste was generated within the production process or other operations, and potential hazardous waste reduction and recycling techniques applicable to those wastes;

(iv) A description of the hazardous waste accounting systems that identify waste management costs and factor in liability, compliance and oversight costs to the extent feasible;

(v) A description of the employee awareness and training programs designed to involve employees to the maximum extent feasible in hazardous waste reduction planning and implementation; and

(vi) A description of how the plan has been or will be incorporated into management practices and procedures so as to ensure an ongoing effort.

2. As part of each plan developed under this subparagraph, a generator shall establish specific performance goals for the source reduction of each hazardous waste stream.

3. The specific performance goals established under this subparagraph shall be quantitative goals, expressed in numeric terms. Whenever possible, the units of measurement should be in pounds (or tons) of waste generated per standard unit of production, as defined by the generator. If the establishment of numeric performance goals is not practical, the performance goals shall include a clearly stated list of actions designed to lead to the establishment of numeric goals as soon as practical.

4. As part of each plan developed under this subparagraph, each generator shall explain the rationale for each performance goal. Acts of God or other unforeseeable events beyond the control of the generator do not have to be considered in setting goals. The rationale for a particular performance goal shall address any impediments to hazardous waste reduction, including, but not limited to, the following:

(i) The availability of technically practical hazardous waste reduction methods, including any anticipated changes in the future;

(ii) Previously implemented reductions of hazardous waste;

(iii) The economic practicability of available hazardous waste reduction methods, including any anticipated changes in the future. Examples of situations where hazardous waste reduction may not be economically practical include, but are not limited to:

(I) For valid reasons of prioritization, a particular company has chosen first to address other more serious hazardous waste reduction concerns;

(II) Necessary steps to reduce hazardous waste are likely to have significant adverse impacts on product quality; or

(III) Legal or contractual obligations interfere with the necessary steps that would lead to hazardous waste reduction.

5. A generator required to complete a hazardous waste reduction plan under subparagraph (a) of this paragraph may include as a preface to its initial plan:

(i) An explanation and documentation regarding hazardous waste reduction efforts completed or in progress before the first reporting date; and

(ii) An explanation and documentation regarding impediments to hazardous waste reduction specific to the individual facility.

(c) Annual Progress Report

1. All generators shall annually review their waste reduction plan and complete a hazardous waste reduction progress report which shall:

(i) Analyze and quantify progress made, if any, in hazardous waste reduction, relative to each performance goal established under subparagraph (b) of this paragraph.

(ii) Set forth amendments, if needed, to the hazardous waste reduction plan and explain the need for the amendments.

2. Except for the information reported to the department under paragraph (5)(b) of this rule, Annual Reporting, the annual progress report shall be retained at the facility and shall not be considered a public record. However, the generator shall permit any officer, employee or representative of the department at all reasonable times to have access to the annual progress report.

(d) Review of Plan

1. The Commissioner may review a plan or an annual progress report to determine whether the plan or progress report reasonably contains the elements specified under subparagraph (b) of this paragraph. If a generator fails to complete a plan containing these elements or an annual progress report reasonably containing the elements required, the department shall notify the generator of the specific deficiencies. The department also may specify a reasonable time frame, of not more than one hundred and twenty (120) days, within which the generator shall modify the plan or progress report correcting the specified deficiencies.

2. If the Commissioner determines that a plan or progress report has not been modified to address the deficiencies identified, the Commissioner may issue an order for correction to the responsible person, and this order shall be complied with within the time limit specified in the order. Such order shall be served by personal service or shall be sent by certified mail, return receipt requested. Investigations made in accordance with this paragraph may be made on the initiative of the commissioner or board. Prior to the issuance of any order or the execution of any other enforcement action, the commissioner or director may request the presence of the alleged violator of this paragraph at a meeting to show cause why enforcement action ought not to be taken by the department.

(e) Confidentiality

A plan or annual progress report developed pursuant to this paragraph and maintained at the generating facility shall not be considered a public record. Information supplied to the department, as provided by this rule and defined as proprietary by regulation, shall not be revealed to any person without the consent of the person supplying such information. However,

the summary information on waste reduction activities submitted to the department may be utilized by the commissioner, the board, the department, the United States Environmental Protection Agency, or any authorized representative of the commissioner or the board in connection with the responsibilities of the department or board pursuant to this paragraph or as necessary to comply with federal law. Copies of the any Form R's provided to the State and Environmental Protection Agency (EPA), can be requested from the Tennessee Emergency Management Agency (TEMA).

(7) Exports of Hazardous Waste [40 CFR 262 Subpart E]

(a) Applicability [40 CFR 262.50]

This paragraph establishes requirements applicable to exports of hazardous waste. Except to the extent subparagraph (i) of this paragraph provides otherwise, a primary exporter of hazardous waste must comply with the special requirements of this paragraph and a transporter transporting hazardous waste for export must comply with applicable requirements of Rule ~~1200-01-11-.04~~ 0400-12-01-.04. Subparagraph (i) of this paragraph sets forth the requirements of international agreements between the United States and receiving countries which establish different notice, export, and enforcement procedures for the transportation, treatment, storage and disposal of hazardous waste for shipments between the United States and those countries.

(b) Definitions [40 CFR 262.51]

In addition to the definitions set forth at Rule ~~1200-01-11-.01~~ 0400-12-01-.01(2)(a), the following definitions apply to this paragraph:

"Consignee" means the ultimate treatment, storage or disposal facility in a receiving country to which the hazardous waste will be sent.

"EPA Acknowledgement of Consent" means the cable sent to EPA from the U.S. Embassy in a receiving country that acknowledges the written consent of the receiving country to accept the hazardous waste and describes the terms and conditions of the receiving country's consent to the shipment.

"Primary Exporter" means any person who is required to originate the manifest for a shipment of hazardous waste in accordance with paragraph (3) of this rule, which specifies a treatment, storage, or disposal facility in a receiving country as the facility to which the hazardous waste will be sent and any intermediary arranging for the export.

"Receiving country" means a foreign country to which a hazardous waste is sent for the purpose of treatment, storage or disposal (except short-term storage incidental to transportation).

"Transit country" means any foreign country, other than a receiving country, through which a hazardous waste is transported.

(c) General Requirements [40 CFR 262.52]

Exports of hazardous waste are prohibited except in compliance with the applicable requirements of this paragraph and Rule ~~1200-01-11-.04~~ 0400-12-01-.04. Exports of hazardous waste are prohibited unless:

1. Notification in accordance with subparagraph (d) of this paragraph has been provided;

2. The receiving country has consented to accept the hazardous waste;

3. A copy of the EPA Acknowledgment of Consent to the shipment accompanies the hazardous waste shipment and, unless exported by rail, is attached to the manifest (or shipping paper for exports by water (bulk shipment)).

4. The hazardous waste shipment conforms to the terms of the receiving country's written consent as reflected in the EPA Acknowledgment of Consent.

(d) Notification of Intent to Export [40 CFR 262.53]

1. A primary exporter of hazardous waste must notify EPA of an intended export before such waste is scheduled to leave the United States. A complete notification should be submitted sixty (60) days before the initial shipment is intended to be shipped off site. This notification may cover export activities extending over a twelve (12) month or lesser period. The notification must be in writing, signed by the primary exporter, and include the following information:

   (i) Name, mailing address, telephone number and EPA ID number of the primary exporter;

   (ii) By consignee, for each hazardous waste type:

      (I) A description of the hazardous waste and the hazardous waste code (from paragraphs (3) and (4) of Rule ~~1200-01-11-.02~~ 0400-12-01-.02), U.S. DOT proper shipping name, hazard class and ID number (UN/NA) for each hazardous waste as identified in 49 CFR parts 171 through 177;

      (II) The estimated frequency or rate at which such waste is to be exported and the period of time over which such waste is to be exported.

      (III) The estimated total quantity of the hazardous waste in units as specified in the instructions to the Uniform Hazardous Waste Manifest Form (8700-22);

      (IV) All points of entry to and departure from each foreign country through which the hazardous waste will pass;

      (V) A description of the means by which each shipment of the hazardous waste will be transported (e.g., mode of transportation vehicle (air, highway, rail, water, etc.), type(s) of container (drums, boxes, tanks, etc.));

      (VI) A description of the manner in which the hazardous waste will be treated, stored or disposed of in the receiving country (e.g., land or ocean incineration, other land disposal, ocean dumping, recycling);

      (VII) The name and site address of the consignee and any alternate consignee; and

      (VIII) The name of any transit countries through which the hazardous waste will be sent and a description of the approximate length of time the hazardous waste will remain in such country and the nature of its handling while there.

2. Notifications submitted by mail should be sent to the following mailing address: Office of Enforcement and Compliance Assurance, Office of Federal Activities, International Compliance Assurance Division (2254A), Environmental Protection Agency, 1200 Pennsylvania Ave., NW., Washington, DC 20460. Hand-delivered notifications should be sent to: Office of Enforcement and Compliance Assurance, Office of Federal Activities, International Compliance Assurance Division, Environmental Protection Agency, Ariel Rios Bldg., Room 6144, 12th St. and Pennsylvania Ave., NW., Washington, DC 20004. In both cases, the following shall be prominently displayed on the front of the envelope: "Attention: Notification of Intent to Export."

3. Except for changes to the telephone number in subpart 1(i) of this subparagraph, changes to item 1(ii)(V) of this subparagraph and decreases in the quantity indicated pursuant to item 1(ii)(III) of this subparagraph when the conditions specified on the original notification change (including any exceedance of the estimate of the quantity of hazardous waste specified in the original notification), the primary exporter must provide EPA with a written renotification of the change. The shipment cannot take place until consent of the receiving country to the changes (except for changes to item 1(ii)(VIII) of this subparagraph and in the ports of entry to and departure from transit countries pursuant to item 1(ii)(IV) of this subparagraph) has been obtained and the primary exporter receives an EPA Acknowledgment of Consent reflecting the receiving country's consent to the changes.

4. Upon request by EPA, a primary exporter shall furnish to EPA any additional information which a receiving country requests in order to respond to a notification.

5. In conjunction with the Department of State, EPA will provide a complete notification to the receiving country and any transit countries. A notification is complete when EPA receives a notification which EPA determines satisfies the requirements of part 1 of this subparagraph. Where a claim of confidentiality is asserted with respect to any notification information required by part 1 of this subparagraph, EPA may find the notification not complete until any such claim is resolved in accordance with Rule ~~1200-01-11-.01~~ 0400-12-01-.01(7).

6. Where the receiving country consents to the receipt of the hazardous waste, EPA will forward an EPA Acknowledgment of Consent to the primary exporter for purposes of part (e)8 of this paragraph. Where the receiving country objects to receipt of the hazardous waste or withdraws a prior consent, EPA will notify the primary exporter in writing. EPA will also notify the primary exporter of any responses from transit countries.

(e) Special Manifest Requirements [40 CFR 262.54]

A primary exporter must comply with the manifest requirements of paragraph (3) of this rule except that:

1. In lieu of the name, site address and EPA ID number of the designated permitted facility, the primary exporter must enter the name and site address of the consignee.

2. In lieu of the name, site address and EPA ID number of a permitted alternate facility, the primary exporter may enter the name and site address of any alternate consignee.

3. In the International Shipments block, the primary exporter must check the export box and enter the point of exit (city and state) from the United States.

4. The following statement must be added to the end of the first sentence of the certification set forth in Item 16 of the Uniform Hazardous Waste Manifest Form: ``and conforms to the terms of the attached EPA Acknowledgment of Consent''.

5. The primary exporter may obtain the manifest from any source that is registered with the U. S. EPA as a supplier of manifests (e.g., states, waste handlers, and/or commercial forms printers).

6. The primary exporter must require the consignee to confirm in writing the delivery of the hazardous waste to that facility and to describe any significant discrepancies (as defined in Rule ~~1200-01-11-.06~~ 0400-12-01-.06(5)(c)1) between the manifest and the shipment. A copy of the manifest signed by such facility may be used to confirm delivery of the hazardous waste.

7. In lieu of the requirements of part (a)4 of paragraph (3) of this rule, where a shipment cannot be delivered for any reason to the designated or alternate consignee, the primary

exporter must:

(i) Renotify EPA of a change in the conditions of the original notification to allow shipment to a new consignee in accordance with part (d)3 of this paragraph and obtain an EPA Acknowledgment of Consent prior to delivery; or

(ii) Instruct the transporter to return the waste to the primary exporter in the United States or designate another facility within the United States; and

(iii) Instruct the transporter to revise the manifest in accordance with the primary exporter's instructions.

8. The primary exporter must attach a copy of the EPA Acknowledgment of Consent to the shipment to the manifest which must accompany the hazardous waste shipment. For exports by rail or water (bulk shipment), the primary exporter must provide the transporter with an EPA Acknowledgment of Consent which must accompany the hazardous waste but which need not be attached to the manifest except that for exports by water (bulk shipment) the primary exporter must attach the copy of the EPA Acknowledgment of Consent to the shipping paper.

9. The primary exporter shall provide the transporter with an additional copy of the manifest for delivery to the U.S. Customs official at the point the hazardous waste leaves the United States in accordance with Rule ~~1200-01-11-.04~~ 0400-12-01-.04(3)(a)7(iv).

(f) Exception Reports [40 CFR 262.55]

In lieu of the requirements of subparagraph (5)(c) of this rule, a primary exporter must file an exception report with the ~~Administrator~~ Office of Enforcement and Compliance Assurance, Office of Federal Activities, International Compliance Assurance Division (2254A), Environmental Protection Agency, 1200 Pennsylvania Avenue, NW., Washington, DC, 20460, if any of the following occurs:

1. He has not received a copy of the manifest signed by the transporter stating the date and place of departure from the United States within forty-five (45) days from the date it was accepted by the initial transporter;

2. Within ninety (90) days from the date the waste was accepted by the initial transporter, the primary exporter has not received written confirmation from the consignee that the hazardous waste was received;

3. The waste is returned to the United States.

(g) Annual Reports [40 CFR 262.56]

1. Primary exporters of hazardous waste shall file with the Administrator no later than March 1 of each year, a report summarizing the types, quantities, frequency, and ultimate destination of all hazardous waste exported during the previous calendar year. Such reports shall include the following:

(i) The EPA ID number, name, and mailing and site address of the exporter;

(ii) The calendar year covered by the report;

(iii) The name and site address of each consignee;

(iv) By consignee, for each hazardous waste exported, a description of the hazardous waste, the hazardous waste code (from paragraph (3) or (4) of Rule ~~1200-01-11-.02~~ 0400-12-01-.02), DOT hazard class, the name and US EPA ID Number (where applicable) for each transporter used, the total amount of waste

shipped and number of shipments pursuant to each notification;

(v) Except for hazardous waste produced by exporters of greater than 100 kg but less than 1000 kg in a calendar month, unless provided pursuant to subparagraph (5)(b) of this rule, in even numbered years:

(I) A description of the efforts undertaken during the year to reduce the volume and toxicity of waste generated; and

(II) A description of the changes in volume and toxicity of waste actually achieved during the year in comparison to previous years to the extent such information is available for years prior to 1984.

(vi) A certification signed by the primary exporter which states:

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment.

2. Annual reports submitted by mail should be sent to the following mailing address: Office of Enforcement and Compliance Assurance, Office of Federal Activities, International Compliance Assurance Division (2254A), Environmental Protection Agency, 1200 Pennsylvania Ave., NW., Washington, DC 20460. Hand-delivered reports should be sent to: Office of Enforcement and Compliance Assurance, Office of Federal Activities, International Compliance Assurance Division, Environmental Protection Agency, Ariel Rios Bldg., Room 6144, 12th St. and Pennsylvania Ave., NW., Washington, DC 20004.

(h) Recordkeeping [40 CFR 262.57]

1. For all exports a primary exporter must:

(i) Keep a copy of each notification of intent to export for a period of at least three years from the date the hazardous waste was accepted by the initial transporter;

(ii) Keep a copy of each EPA Acknowledgment of Consent for a period of at least three years from the date the hazardous waste was accepted by the initial transporter;

(iii) Keep a copy of each confirmation of delivery of the hazardous waste from the consignee for at least three years from the date the hazardous waste was accepted by the initial transporter; and

(iv) Keep a copy of each annual report for a period of at least three years from the due date of the report.

2. The periods of retention referred to in part 1 of this subparagraph are extended automatically during the course of any unresolved enforcement action regarding the regulated activity or as requested by the Commissioner.

(i) ~~(Reserved)~~ International Agreements [40 CFR 262.58]

1. Any person who exports or imports wastes that are considered hazardous under U.S. national procedures to or from designated Member countries of the Organization for Economic Cooperation and Development (OECD) as defined in subpart (i) of the part for purposes of recovery is subject to 40 CFR Part 262, Subpart H. The requirements of this paragraph and paragraph (8) of this rule do not apply to such exports and imports. A

waste is considered hazardous under U.S. national procedures if the waste meets the Federal definition of hazardous waste in 40 CFR 261.3 and is subject to either the Federal RCRA manifesting requirements at 40 CFR Part 262, Subpart B, the universal waste management standards of 40 CFR Part 273 (Rule 0400-12-01-.12), or the export requirements in the spent lead-acid battery management standards of 40 CFR Part 266, Subpart G (part (7)(a)1 of Rule 0400-12-01-.09).

(i) For the purpose of 40 CFR Part 262, Subpart H, the designated OECD Member countries consist of Australia, Austria, Belgium, the Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Japan, Luxembourg, the Netherlands, New Zealand, Norway, Poland Portugal, the Republic of Korea, the Slovak Republic, Spain, Sweden, Switzerland, Turkey, the United Kingdom, and the United States.

(ii) For the purpose of 40 CFR 262, Subpart H, Canada and Mexico are considered OECD Member countries only for the purpose of transit.

2. Any person who exports hazardous waste to or imports hazardous waste from: A designated OECD Member country for purposes other than recovery (e.g., incineration, disposal), Mexico (for any purpose), or Canada (for any purpose) remains subject to the requirements of this paragraph and paragraph (8) of this rule, and is not subject to the requirements of 40 CFR Part 262, Subpart H.

(8) Imports of Hazardous Waste [40 CFR 262 Subpart F]

(a) Imports of Hazardous Waste [40 CFR 262.60]

1. Any person who imports hazardous waste from a foreign country into the United States must comply with the requirements of this part and the special requirements of this subpart.

2. When importing hazardous waste, a person must meet all the requirements of ~~part~~ subparagraph (3)(a)~~1~~ of this rule for the manifest except that:

(i) In place of the generator's name, address and EPA Identification number, the name and address of the foreign generator and the importer's name, address and EPA Identification Number must be used.

(ii) In place of the generator's signature on the certification statement, the U.S. importer or his agent must sign and date the certification and obtain the signature of the initial transporter.

3. A person who imports hazardous waste may obtain the manifest form from any source that is registered with the U. S. EPA as a supplier of manifests (e. g., states, waste handlers, and/or commercial forms printers).

4. In the International Shipments block, the importer must check the import box and enter the point of entry (city and state) into the United States.

5. The importer must provide the transporter with an additional copy of the manifest to be submitted by the receiving facility to U. S. EPA in accordance with Rules ~~1200-01-11-.05~~ 0400-12-01-.05(5)(b)1(iii) and ~~1200-01-11-.06~~ 0400-12-01-.06(5)(b)1(iii).

(9) (Reserved) ~~Transfrontier Shipments~~ Transboundary Movements of Hazardous Waste for Recovery within the OECD [40 CFR 262 Subpart H]

(Note: 40 CFR Part 262, Subpart H is administered by EPA.)

(10) (RESERVED)

(11) (RESERVED)

(12) Alternative Requirements for Hazardous Waste Determination and Accumulation of Unwanted Material for Laboratories Owned by Eligible Academic Entities [40 CFR 262, Subpart K]

(a) Definitions for this paragraph [40 CFR 262.200]

The following definitions apply to this paragraph:

1. "Central accumulation area" means an on-site hazardous waste accumulation area subject to either parts (4)(e)2 and 3 of this rule (large quantity generators), or parts (4)(e)6, 7 and 8 of this rule (small quantity generators). A central accumulation area at an eligible academic entity that chooses to be subject to this paragraph must also comply with subparagraph (l) of this paragraph when accumulating unwanted material and/or hazardous waste.

2. "College/University" means a private or public, post-secondary, degree-granting, academic institution, that is accredited by an accrediting agency listed annually by the U.S. Department of Education.

3. "Eligible academic entity" means a college or university, or a non-profit research institute that is owned by or has a formal written affiliation agreement with a college or university, or a teaching hospital that is owned by or has a formal written affiliation agreement with a college or university.

4. "Formal written affiliation agreement for a non-profit research institute" means a written document that establishes a relationship between institutions for the purposes of research and/or education and is signed by authorized representatives, as defined by Rule 0400-12-01-.01(2)(a), from each institution. A relationship on a project-by-project or grant-by-grant basis is not considered a formal written affiliation agreement. A formal written affiliation agreement for a teaching hospital means a master affiliation agreement and program letter of agreement, as defined by the Accreditation Council for Graduate Medical Education, with an accredited medical program or medical school.

5. "Laboratory" means an area owned by an eligible academic entity where relatively small quantities of chemicals and other substances are used on a non-production basis for teaching or research (or diagnostic purposes at a teaching hospital) and are stored and used in containers that are easily manipulated by one person. Photo laboratories, art studios, and field laboratories are considered laboratories. Areas such as chemical stockrooms and preparatory laboratories that provide a support function to teaching or research laboratories (or diagnostic laboratories at teaching hospitals) are also considered laboratories.

6. Laboratory clean-out means an evaluation of the inventory of chemicals and other materials in a laboratory that are no longer needed or that have expired and the subsequent removal of those chemicals or other unwanted materials from the laboratory. A clean-out may occur for several reasons. It may be on a routine basis (e.g., at the end of a semester or academic year) or as a result of a renovation, relocation, or change in laboratory supervisor/occupant. A regularly scheduled removal of unwanted material as required by subparagraph (i) of this paragraph does not qualify as a laboratory clean-out.

7. "Laboratory worker" means a person who handles chemicals and/or unwanted material in a laboratory and may include, but is not limited to, faculty, staff, post-doctoral fellows, interns, researchers, technicians, supervisors/managers, and principal investigators. A person does not need to be paid or otherwise compensated for his/her work in the laboratory to be considered a laboratory worker. Undergraduate and graduate students in a supervised classroom setting are not laboratory workers.

8. "Non-profit research institute" means an organization that conducts research as its primary function and files as a non-profit organization under the tax code of 26 U.S.C. 501(c)(3).

9. "Reactive acutely hazardous unwanted material" means an unwanted material that is one of the acutely hazardous commercial chemical products listed in part (4)(d)5 of Rule 0400-12-01-.02 for reactivity.

10. "Teaching hospital" means a hospital that trains students to become physicians, nurses or other health or laboratory personnel.

11. "Trained professional" means a person who has completed the applicable training requirements of subparagraph (2)(g) of Rule 0400-12-01-.05 as required by subpart (4)(e)2(iv) of this rule for large quantity generators, or is knowledgeable about normal operations and emergencies in accordance with subpart (4)(e)6(vii) of this rule for small quantity generators and conditionally exempt small quantity generators. A trained professional may be an employee of the eligible academic entity or may be a contractor or vendor who meets the requisite training requirements.

12. "Unwanted material" means any chemical, mixtures of chemicals, products of experiments or other material from a laboratory that is no longer needed, wanted or usable in the laboratory and that is destined for hazardous waste determination by a trained professional. Unwanted materials include reactive acutely hazardous unwanted materials and materials that may eventually be determined not to be solid waste pursuant to subparagraph (1)(b) of Rule 0400-12-01-.02, or a hazardous waste pursuant to subparagraph (1)(c) of Rule 0400-12-01-.02. If an eligible academic entity elects to use another equally effective term in lieu of "unwanted material," as allowed by item (g)1(i)(I) of this paragraph, the equally effective term has the same meaning and is subject to the same requirements as "unwanted material" under this paragraph.

13. "Working container" means a small container (i.e., two gallons or less) that is in use at a laboratory bench, hood, or other work station, to collect unwanted material from a laboratory experiment or procedure.

(b) Applicability of this paragraph. [40 CFR 262.201]

1. Large quantity generators and small quantity generators.

This paragraph provides alternative requirements to the requirements in subparagraph (1)(b) of this rule and part (4)(e)5 of this rule for the hazardous waste determination and accumulation of hazardous waste in laboratories owned by eligible academic entities that choose to be subject to this paragraph, provided that they complete the notification requirements of subparagraph (d) of this paragraph.

2. Conditionally exempt small quantity generators.

This paragraph provides alternative requirements to the conditional exemption in part (1)(e)2 of Rule 0400-12-01-.02 for the accumulation of hazardous waste in laboratories owned by eligible academic entities that choose to be subject to this paragraph, provided that they complete the notification requirements subparagraph (d) of this paragraph.

(c) This subparagraph is optional. [40 CFR 262.202]

1. Large quantity generators and small quantity generators:

Eligible academic entities have the option of complying with this paragraph with respect to its laboratories, as an alternative to complying with the requirements of subparagraph (1)(b) of this rule and part (4)(e)5 of this rule.

2. Conditionally exempt small quantity generators.

Eligible academic entities have the option of complying with this paragraph with respect to its laboratories, as an alternative to complying with the conditional exemption of part (1)(e)2 of Rule 0400-12-01-.02.

(d) How an eligible academic entity indicates it will be subject to the requirements of this paragraph. [40 CFR 262.203]

1. An eligible academic entity must notify the Department in writing that it is electing to be subject to the requirements of this paragraph for all the laboratories owned by the eligible academic entity under the same Installation Identification Number. An eligible academic entity that is a conditionally exempt small quantity generator and does not have an Installation Identification Number must notify that it is electing to be subject to the requirements of this paragraph for all the laboratories owned by the eligible academic entity that are on-site, as defined in paragraph (2) of Rule 0400-12-01-.01. An eligible academic entity must submit a separate notification (Hazardous Waste Registration and Notification form) for each Installation Identification Number (or site, for conditionally exempt small quantity generators) that is electing to be subject to the requirements of this paragraph, and must submit the Hazardous Waste Registration and Notification Form before it begins operating under this paragraph.

2. Such notification must be submitted on Hazardous Waste Registration and Notification forms provided by the Department. The form must be completed according to the instructions accompanying it.

3. An eligible academic entity must keep a copy of the notification on file at the eligible academic entity for as long as its laboratories are subject to this paragraph.

4. A teaching hospital that is not owned by a college or university must keep a copy of its formal written affiliation agreement with a college or university on file at the teaching hospital for as long as its laboratories are subject to this paragraph.

5. A non-profit research institute that is not owned by a college or university must keep a copy of its formal written affiliation agreement with a college or university on file at the non-profit research institute for as long as its laboratories are subject to this paragraph.

(e) How an eligible academic entity indicates it will withdraw from the requirements of this paragraph. [40 CFR 262.204]

1. An eligible academic entity must notify the Department in writing that it is electing to no longer be subject to the requirements of this paragraph for all the laboratories owned by the eligible academic entity under the same Installation Identification Number and that it will comply with the requirements of subparagraph (1)(b) of this rule and part (4)(e)5 of this rule for small quantity generators and large quantity generators. An eligible academic entity that is a conditionally exempt small quantity generator and does not have an Installation Identification Number must notify that it is withdrawing from the requirements of this paragraph for all the laboratories owned by the eligible academic entity that are on-site and that it will comply with the conditional exemption of part (1)(e)2 of Rule 0400-12-01-.02. An eligible academic entity must submit a separate notification (Hazardous Waste Registration and Notification form) for each Installation Identification Number (or site, for conditionally exempt small quantity generators) that is withdrawing from the requirements of this paragraph and must submit the Hazardous Waste Registration and Notification form before it begins operating under the requirements of subparagraph (1)(b) of this rule and part (4)(e)5 of this rule for small quantity generators and large quantity generators, or part (1)(e)2 of Rule 0400-12-01-.02 for conditionally exempt small quantity generators.

2. Such notification must be submitted on Hazardous Waste Registration and Notification forms provided by the Department. The form must be completed according to the instructions accompanying it.

3. An eligible academic entity must keep a copy of the withdrawal notice on file at the eligible academic entity for five (5) years from the date of the notification.

(f) Summary of the requirements of this paragraph. [40 CFR 262.205]

An eligible academic entity that chooses to be subject to this paragraph is not required to have interim status or a hazardous waste management permit for the accumulation of unwanted material and hazardous waste in its laboratories, provided the laboratories comply with the provisions of this paragraph and the eligible academic entity has a Laboratory Management Plan (LMP) in accordance with subparagraph (o) of this paragraph that describes how the laboratories owned by the eligible academic entity will comply with the requirements of this paragraph.

(g) Labeling and management standards for containers of unwanted material in the laboratory. [40 CFR 262.206]

An eligible academic entity must manage containers of unwanted material while in the laboratory in accordance with the requirements in this subparagraph.

1. Labeling: Label unwanted material as follows:

(i) The following information must be affixed or attached to the container:

(I) The words "unwanted material" or another equally effective term that is to be used consistently by the eligible academic entity and that is identified in Part I of the Laboratory Management Plan; and

(II) Sufficient information to alert emergency responders to the contents of the container. Examples of information that would be sufficient to alert emergency responders to the contents of the container include, but are not limited to:

I. The name of the chemical(s); and

II. The type or class of chemical, such as organic solvents or halogenated organic solvents.

(ii) The following information may be affixed or attached to the container, but must at a minimum be associated with the container:

(I) The date that the unwanted material first began accumulating in the container; and

(II) Information sufficient to allow a trained professional to properly identify whether an unwanted material is a solid and hazardous waste and to assign the proper hazardous waste code(s), pursuant to subparagraph (1)(b) of this rule. Examples of information that would allow a trained professional to properly identify whether an unwanted material is a solid or hazardous waste include, but are not limited to:

I. The name and/or description of the chemical contents or composition of the unwanted material, or, if known, the product of the chemical reaction;

II. Whether the unwanted material has been used or is unused; and

III. A description of the manner in which the chemical was produced or processed, if applicable.

2. Management of Containers in the Laboratory:

An eligible academic entity must properly manage containers of unwanted material in the laboratory to assure safe storage of the unwanted material, to prevent leaks, spills, emissions to the air, adverse chemical reactions, and dangerous situations that may result in harm to human health or the environment. Proper container management must include the following:

(i) Containers are maintained and kept in good condition and damaged containers are replaced, overpacked, or repaired; and

(ii) Containers are compatible with their contents to avoid reactions between the contents and the container; and are made of, or lined with, material that is compatible with the unwanted material so that the container's integrity is not impaired; and

(iii) Containers must be kept closed at all times, except:

(I) When adding, removing or bulking unwanted material; or

(II) A working container may be open until the end of the procedure or work shift, or until it is full, whichever comes first, at which time the working container must either be closed or the contents emptied into a separate container that is then closed; or

(III) When venting of a container is necessary.

I. For the proper operation of laboratory equipment, such as with in-line collection of unwanted materials from high performance liquid chromatographs; or

II. To prevent dangerous situations, such as build-up of extreme pressure.

(h) Training. [40 CFR 262.207]

An eligible academic entity must provide training to all individuals working in a laboratory at the eligible academic entity, as follows:

1. Training for laboratory workers and students must be commensurate with their duties so they understand the requirements in this paragraph and can implement them.

2. An eligible academic entity can provide training for laboratory workers and students in a variety of ways, including, but not limited to:

(i) Instruction by the professor or laboratory manager before or during an experiment; or

(ii) Formal classroom training; or

(iii) Electronic/written training; or

(iv) On-the-job training; or

(v) Written or oral exams.

3. An eligible academic entity that is a large quantity generator must maintain documentation for the durations specified in part (2)(g)5 of Rule 0400-12-01-.05 as required by subpart (4)(e)2(iv) of this rule demonstrating training for all laboratory workers that is sufficient to determine whether laboratory workers have been trained. Examples of documentation demonstrating training can include, but are not limited to, the following:

(i) Sign-in/attendance sheet(s) for training session(s); or

(ii) Syllabus for training session; or

(iii) Certificate of training completion; or

(iv) Test results.

4. A trained professional must:

(i) Accompany the transfer of unwanted material and hazardous waste when the unwanted material and hazardous waste is removed from the laboratory; and

(ii) Make the hazardous waste determination, pursuant to subparagraph (1)(b) of this rule, for unwanted material.

(i) Removing containers of unwanted material from the laboratory. [40 CFR 262.208]

1. Removing containers of unwanted material on a regular schedule. An eligible academic entity must either:

(i) Remove all containers of unwanted material from each laboratory on a regular interval, not to exceed six (6) months; or

(ii) Remove containers of unwanted material from each laboratory within six (6) months of each container's accumulation start date.

2. The eligible academic entity must specify in Part I of its Laboratory Management Plan whether it will comply with subpart 1(i) or (ii) of this subparagraph for the regular removal of unwanted material from its laboratories.

3. The eligible academic entity must specify in Part II of its Laboratory Management Plan how it will comply with subpart 1(i) or (ii) of this subparagraph and develop a schedule for regular removals of unwanted material from its laboratories.

4. Removing containers of unwanted material when volumes are exceeded.

(i) If a laboratory accumulates a total volume of unwanted material (including reactive acutely hazardous unwanted material) in excess of 55 gallons before the regularly scheduled removal, the eligible academic entity must ensure that all containers of unwanted material in the laboratory (including reactive acutely hazardous unwanted material):

(I) Are marked on the label that is associated with the container (or on the label that is affixed or attached to the container, if that is preferred) with the date that 55 gallons is exceeded; and

(II) Are removed from the laboratory within ten (10) calendar days of the date that 55 gallons was exceeded, or at the next regularly scheduled removal, whichever comes first.

(ii) If a laboratory accumulates more than 1 quart of reactive acutely hazardous unwanted material before the regularly scheduled removal, then the eligible

academic entity must ensure that all containers of reactive acutely hazardous unwanted material:

(I) Are marked on the label that is associated with the container (or on the label that is affixed or attached to the container, if that is preferred) with the date that 1 quart is exceeded; and

(II) Are removed from the laboratory within ten (10) calendar days of the date that 1 quart was exceeded, or at the next regularly scheduled removal, whichever comes first.

(j) Where and when to make the hazardous waste determination and where to send containers of unwanted material upon removal from the laboratory. [40 CFR 262.209]

1. Large quantity generators and small quantity generators—an eligible academic entity must ensure that a trained professional makes a hazardous waste determination, pursuant to subparagraph (1)(b) of this rule, for unwanted material in any of the following areas:

(i) In the laboratory before the unwanted material is removed from the laboratory, in accordance with subparagraph (k) of this paragraph;

(ii) Within four (4) calendar days of arriving at an on-site central accumulation area, in accordance with subparagraph (l) of this paragraph; and

(iii) Within four (4) calendar days of arriving at an on-site interim status or permitted treatment, storage or disposal facility, in accordance with subparagraph (m) of this paragraph.

2. Conditionally exempt small quantity generators--an eligible academic entity must ensure that a trained professional makes a hazardous waste determination, pursuant to subparagraph (1)(b) of this rule, for unwanted material in the laboratory before the unwanted material is removed from the laboratory, in accordance with subparagraph (k) of this paragraph.

(k) Making the hazardous waste determination in the laboratory before the unwanted material is removed from the laboratory. [40 CFR 262.210]

If an eligible academic entity makes the hazardous waste determination, pursuant to subparagraph (1)(b) of this rule, for unwanted material in the laboratory, it must comply with the following:

1. A trained professional must make the hazardous waste determination, pursuant to subparagraph (1)(b) of this rule, before the unwanted material is removed from the laboratory.

2. If an unwanted material is a hazardous waste, the eligible academic entity must:

(i) Write the words "hazardous waste" on the container label that is affixed or attached to the container, before the hazardous waste may be removed from the laboratory; and

(ii) Write the appropriate hazardous waste code(s) on the label that is associated with the container (or on the label that is affixed or attached to the container, if that is preferred) before the hazardous waste is transported off-site; and

(iii) Count the hazardous waste toward the eligible academic entity's generator status, pursuant to parts (1)(e)3 and 4 of Rule 0400-12-01-.02, in the calendar month that the hazardous waste determination was made.

3. A trained professional must accompany all hazardous waste that is transferred from the laboratory(ies) to an on-site central accumulation area or on-site interim status or permitted treatment, storage or disposal facility.

4. When hazardous waste is removed from the laboratory:

(i) Large quantity generators and small quantity generators must ensure it is taken directly from the laboratory(ies) to an on-site central accumulation area, or on-site interim status or permitted treatment, storage or disposal facility, or transported off-site.

(ii) Conditionally exempt small quantity generators must ensure it is taken directly from the laboratory(ies) to any of the types of facilities listed in subpart (1)(e)6(iii) of Rule 0400-12-01-.02 for acute hazardous waste, or subpart (1)(e)7(iii) of Rule 0400-12-01-.02 for hazardous waste.

5. An unwanted material that is a hazardous waste is subject to all applicable hazardous waste regulations when it is removed from the laboratory.

(l) Making the hazardous waste determination at an on-site central accumulation area. [40 CFR 262.211]

If an eligible academic entity makes the hazardous waste determination, pursuant to subparagraph (1)(b) of this rule, for unwanted material at an on-site central accumulation area, it must comply with the following:

1. A trained professional must accompany all unwanted material that is transferred from the laboratory(ies) to an on-site central accumulation area; and

2. All unwanted material removed from the laboratory(ies) must be taken directly from the laboratory(ies) to the on-site central accumulation area; and

3. The unwanted material becomes subject to the generator accumulation regulations of parts (4)(e)2 and 3 of this rule for large quantity generators or parts (4)(e)6, 7 and 8 of this rule for small quantity generators as soon as it arrives in the central accumulation area, except for the "hazardous waste" labeling requirements of subpart (4)(e)2(iii) of this rule; and

4. A trained professional must determine, pursuant to subparagraph (1)(b) of this rule, if the unwanted material is a hazardous waste within four (4) calendar days of the unwanted materials' arrival at the on-site central accumulation area; and

5. If the unwanted material is a hazardous waste, the eligible academic entity must:

(i) Write the words "hazardous waste" on the container label that is affixed or attached to the container, within four (4) calendar days of arriving at the on-site interim status or permitted treatment, storage or disposal facility and before the hazardous waste may be removed from the on-site interim status or permitted treatment, storage or disposal facility; and

(ii) Write the appropriate hazardous waste code(s) on the container label that is associated with the container (or on the label that is affixed or attached to the container, if that is preferred) before the hazardous waste may be treated or disposed of on-site or transported off-site; and

(iii) Count the hazardous waste toward the eligible academic entity's generator status, pursuant to parts (1)(e)3 and 4 of Rule 0400-12-01-.02 in the calendar month that the hazardous waste determination was made; and

(iv) Manage the hazardous waste according to all applicable hazardous waste regulations.

(m) Making the hazardous waste determination at an on-site interim status or permitted treatment, storage or disposal facility. [40 CFR 262.212]

If an eligible academic entity makes the hazardous waste determination, pursuant to subparagraph (1)(b) of this rule, for unwanted material at an on-site interim status or permitted treatment, storage or disposal facility, it must comply with the following:

1. A trained professional must accompany all unwanted material that is transferred from the laboratory(ies) to an on-site interim status or permitted treatment, storage or disposal facility; and

2. All unwanted material removed from the laboratory(ies) must be taken directly from the laboratory(ies) to the on-site interim status or permitted treatment, storage or disposal facility; and

3. The unwanted material becomes subject to the terms of the eligible academic entity's hazardous waste permit or interim status as soon as it arrives in the on-site treatment, storage or disposal facility; and

4. A trained professional must determine, pursuant to subparagraph (1)(b) of this rule, if the unwanted material is a hazardous waste within four (4) calendar days of the unwanted materials' arrival at an on-site interim status or permitted treatment, storage or disposal facility; and

5. If the unwanted material is a hazardous waste, the eligible academic entity must:

(i) Write the words "hazardous waste" on the container label that is affixed or attached to the container (or on the label that is affixed or attached to the container, if that is preferred) within four (4) calendar days of arriving at the on-site interim status or permitted treatment, storage or disposal facility and before the hazardous waste may be removed from the on-site interim status or permitted treatment, storage or disposal facility; and

(ii) Write the appropriate hazardous waste code(s) on the container label that is associated with the container (or on the label that is affixed or attached to the container, if that is preferred) before the hazardous waste may be treated or disposed on-site or transported off-site; and

(iii) Count the hazardous waste toward the eligible academic entity's generator status, pursuant to parts (1)(e)3 and 4 of Rule 0400-12-01-.02 in the calendar month that the hazardous waste determination was made; and

(iv) Manage the hazardous waste according to all applicable hazardous waste regulations.

(n) Laboratory clean-outs. [40 CFR 262.213]

1. One time per twelve (12) month period for each laboratory, an eligible academic entity may opt to conduct a laboratory clean-out that is subject to all the applicable requirements of this paragraph, except that:

(i) If the volume of unwanted material in the laboratory exceeds 55 gallons (or 1 quart of reactive acutely hazardous unwanted material), the eligible academic entity is not required to remove all unwanted materials from the laboratory within ten (10) calendar days of exceeding 55 gallons (or 1 quart of reactive acutely

hazardous unwanted material), as required by subparagraph (i) of this paragraph. Instead, the eligible academic entity must remove all unwanted materials from the laboratory within thirty (30) calendar days from the start of the laboratory clean-out; and

(ii) For the purposes of on-site accumulation, an eligible academic entity is not required to count a hazardous waste that is an unused commercial chemical product (listed in paragraph (4) of Rule 0400-12-01-.02 or exhibiting one or more characteristics in paragraph (3) of Rule 0400-12-01-.02) generated solely during the laboratory clean-out toward its hazardous waste generator status, pursuant to parts (1)(e)3 and 4 of Rule 0400-12-01-.02. An unwanted material that is generated prior to the beginning of the laboratory clean-out and is still in the laboratory at the time the laboratory clean-out commences must be counted toward hazardous waste generator status, pursuant to parts (1)(e)3 and 4 of Rule 0400-12-01-.02, if it is determined to be hazardous waste; and

(iii) For the purposes of off-site management, an eligible academic entity must count all its hazardous waste, regardless of whether the hazardous waste was counted toward generator status under subpart (ii) of this part, and if it generates more than 1 kg/month of acute hazardous waste or more than 100 kg/month of hazardous waste (i.e., the conditionally exempt small quantity generator limits of subparagraph (1)(e) of Rule 0400-12-01-.02), the hazardous waste is subject to all applicable hazardous waste regulations when it is transported off-site; and

(iv) An eligible academic entity must document the activities of the laboratory clean-out. The documentation must, at a minimum, identify the laboratory being cleaned out, the date the laboratory clean-out begins and ends, and the volume of hazardous waste generated during the laboratory clean-out. The eligible academic entity must maintain the records for a period of five (5) years from the date the clean-out ends; and

2. For all other laboratory clean-outs conducted during the same twelve (12) month period, an eligible academic entity is subject to all the applicable requirements of this paragraph, including, but not limited to:

(i) The requirement to remove all unwanted materials from the laboratory within ten (10) calendar days of exceeding 55 gallons (or 1 quart of reactive acutely hazardous unwanted material), as required by subparagraph (i) of this paragraph; and

(ii) The requirement to count all hazardous waste, including unused hazardous waste, generated during the laboratory clean-out toward its hazardous waste generator status, pursuant to parts (1)(e)3 and 4 of Rule 0400-12-01-.02.

(o) Laboratory management plan. [40 CFR 262.214]

An eligible academic entity must develop and retain a written Laboratory Management Plan, or revise an existing written plan. The Laboratory Management Plan is a site-specific document that describes how the eligible academic entity will manage unwanted materials in compliance with this paragraph. An eligible academic entity may write one Laboratory Management Plan for all the laboratories owned by the eligible academic entity that have opted into this paragraph, even if the laboratories are located at sites with different Installation Identification Numbers. The Laboratory Management Plan must contain two parts with a total of nine elements identified in parts 1 and 2 of this subparagraph. In Part I of its Laboratory Management Plan, an eligible academic entity must describe its procedures for each of the elements listed in part 1 of this subparagraph. An eligible academic entity must implement and comply with the specific provisions that it develops to address the elements in Part I of the Laboratory Management Plan. In Part II of its Laboratory Management Plan, an eligible academic entity must describe its best management practices for each of the elements listed in part 2 of this subparagraph. The specific

actions taken by an eligible academic entity to implement each element in Part II of its Laboratory Management Plan may vary from the procedures described in the eligible academic entity's Laboratory Management Plan, without constituting a violation of this paragraph. An eligible academic entity may include additional elements and best management practices in Part II of its Laboratory Management Plan if it chooses.

1. The eligible academic entity must implement and comply with the specific provisions of Part I of its Laboratory Management Plan. In Part I of its Laboratory Management Plan, an eligible academic entity must:

(i) Describe procedures for container labeling in accordance with part (g)1 of this paragraph, as follows:

(I) Identifying whether the eligible academic entity will use the term "unwanted material" on the containers in the laboratory (If not, identify an equally effective term that will be used in lieu of "unwanted material" and consistently by the eligible academic entity. The equally effective term, if used, has the same meaning and is subject to the same requirements as "unwanted material."); and

(II) Identifying the manner in which information that is "associated with the container" will be imparted.

(ii) Identify whether the eligible academic entity will comply with subpart (i)1(i) or (i)1(ii) of this paragraph for regularly scheduled removals of unwanted material from the laboratory.

2. In Part II of its Laboratory Management Plan, an eligible academic entity must:

(i) Describe its intended best practices for container labeling and management, (see the required standards at subparagraph (g) of this paragraph); and

(ii) Describe its intended best practices for providing training for laboratory workers and students commensurate with their duties (see the required standards at part (h)1 of this paragraph); and

(iii) Describe its intended best practices for providing training to ensure safe on-site transfers of unwanted material and hazardous waste by trained professionals (see the required standards at subpart (h)4(i) of this paragraph); and

(iv) Describe its intended best practices for removing unwanted material from the laboratory, including:

(I) For regularly scheduled removals—Develop a regular schedule for identifying and removing unwanted materials from its laboratories (see the required standards at subparts (i)1(i) and (i)1(ii) of this paragraph); and

(II) For removals when maximum volumes are exceeded:

I. Describe its intended best practices for removing unwanted materials from the laboratory within ten (10) calendar days when unwanted materials have exceeded their maximum volumes (see the required standards at part (i)4 of this paragraph); and

II. Describe its intended best practices for communicating that unwanted materials have exceeded their maximum volumes; and

(v) Describe its intended best practices for making hazardous waste determinations, including specifying the duties of the individuals involved in the process (see the required standards at subparagraph (1)(b) of this rule and subparagraphs (j) through (m) of this paragraph); and

(vi) Describe its intended best practices for laboratory clean-outs, if the eligible academic entity plans to use the incentives for laboratory clean-outs provided in subparagraph (n) of this paragraph, including:

(I) Procedures for conducting laboratory clean-outs (see the required standards at subparts (n)1(i) through (iii) of this paragraph); and

(II) Procedures for documenting laboratory clean-outs (see the required standards at subpart (n)1(iv) of this paragraph); and

(vii) Describe its intended best practices for emergency prevention, including:

(I) Procedures for emergency prevention, notification, and response, appropriate to the hazards in the laboratory; and

(II) A list of chemicals that the eligible academic entity has, or is likely to have, that become more dangerous when they exceed their expiration date and/or as they degrade; and

(III) Procedures to safely dispose of chemicals that become more dangerous when they exceed their expiration date and/or as they degrade; and

(IV) Procedures for the timely characterization of unknown chemicals.

3. An eligible academic entity must make its Laboratory Management Plan available to laboratory workers, students, or any others at the eligible academic entity who request it.

4. An eligible academic entity must review and revise its Laboratory Management Plan, as needed.

(p) Unwanted material that is not solid or hazardous waste. [40 CFR 262.215]

1. If an unwanted material does not meet the definition of solid waste in subparagraph (1)(b) of Rule 0400-12-01-.02, it is no longer subject to this paragraph or to the hazardous waste regulations.

2. If an unwanted material does not meet the definition of hazardous waste in subparagraph (1)(c) of Rule 0400-12-01-.02, it is no longer subject to this paragraph or to the hazardous waste regulations, but must be managed in compliance with any other applicable regulations and/or conditions.

(q) Non-laboratory hazardous waste generated at an eligible academic entity. [40 CFR 262.216]

An eligible academic entity that generates hazardous waste outside of a laboratory is not eligible to manage that hazardous waste under this paragraph; and

1. Remains subject to the generator requirements of subparagraph (1)(b) of this rule and part (4)(e)5 of this rule for large quantity generators and small quantity generators (if the hazardous waste is managed in a satellite accumulation area), and all other applicable generator requirements of Rule 0400-12-01-.03, with respect to that hazardous waste; or

2. Remains subject to the conditional exemption of part (1)(e)2 of Rule 0400-12-01-.02 for conditionally exempt small quantity generators, with respect to that hazardous waste.

~~(10)~~(13) Appendix

(a) Appendix I [Appendix to 40 CFR 262] -- Uniform Hazardous Waste Manifest and Instructions (EPA Forms 8700-22 and 8700-22A and Their Instructions)

U.S. EPA Form 8700-22

Read all instructions before completing this form.

1. This form has been designed for use on a 12-pitch (elite) typewriter which is also compatible with standard computer printers; a firm point pen may also be used—press down hard.

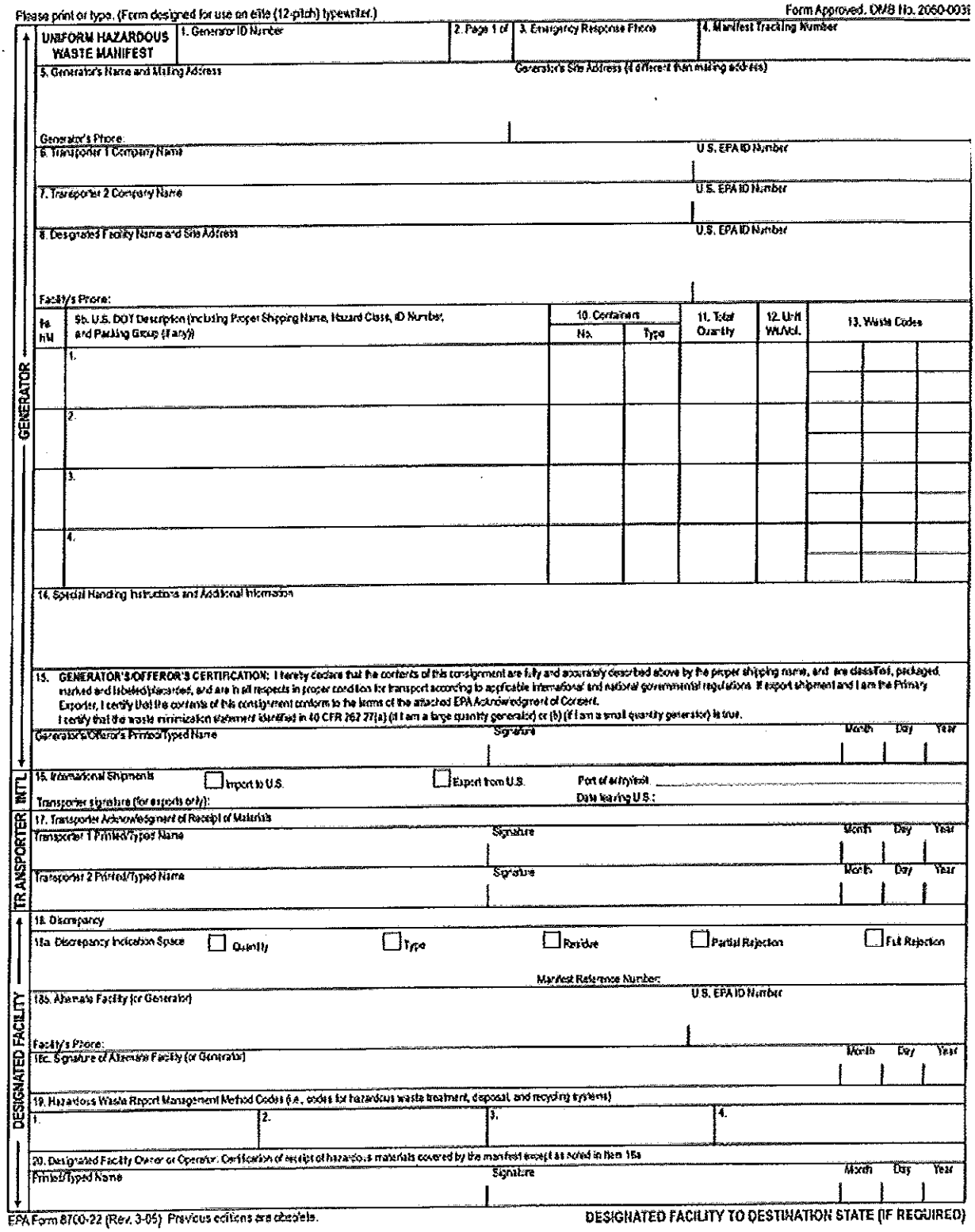
2. Federal regulations require generators and transporters of hazardous waste and owners or operators of hazardous waste treatment, storage, and disposal facilities to complete this form (FORM 8700–22) and, if necessary, the continuation sheet (FORM 8700–22A) for both inter- and intrastate transportation of hazardous waste.

* * * * *

Manifest 8700-22

The following statement must be included with each Uniform Hazardous Waste Manifest, either on the form, in the instructions to the form, or accompanying the form:

Public reporting burden for this collection of information is estimated to average: 30 minutes for generators, 10 minutes for transporters, and 25 minutes for owners or operators of treatment, storage, and disposal facilities. This includes time for reviewing instructions, gathering data, completing, reviewing and transmitting the form. Any correspondence regarding the PRA burden statement for the manifest must be sent to the Director of the Collection Strategies Division in EPA's Office of Information Collection at the following address: U.S. Environmental Protection Agency (2822T), 1200 Pennsylvania Ave., NW., Washington, DC 20460. Do not send the completed form to this address.


Please print or type. (Form designed for use on elite (12-pitch) typewriter.) Form Approved. OMB No. 2060-0039

UNIFORM HAZARDOUS WASTE MANIFEST | 1. Generator ID Number | 2. Page 1 of | 3. Emergency Response Phone | 4. Manifest Tracking Number

GENERATOR

5. Generator's Name and Mailing Address | Generator's Site Address (if different than mailing address)

Generator's Phone:

6. Transporter 1 Company Name | U.S. EPA ID Number

7. Transporter 2 Company Name | U.S. EPA ID Number

8. Designated Facility Name and Site Address | U.S. EPA ID Number

Facility's Phone:

No.	9a. HM	9b. U.S. DOT Description (Including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes		
		1.							
		2.							
		3.							
		4.							

14. Special Handling Instructions and Additional Information

15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name | Signature | Month | Day | Year

INTL

16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

TRANSPORTER

17. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name | Signature | Month | Day | Year

Transporter 2 Printed/Typed Name | Signature | Month | Day | Year

DESIGNATED FACILITY

18. Discrepancy

18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

Manifest Reference Number:

18b. Alternate Facility (or Generator) | U.S. EPA ID Number

Facility's Phone:

18c. Signature of Alternate Facility (or Generator) | Month | Day | Year

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)

1. | 2. | 3. | 4.

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a

Printed/Typed Name | Signature | Month | Day | Year

EPA Form 8700-22 (Rev. 3-05) Previous editions are obsolete. DESIGNATED FACILITY TO DESTINATION STATE (IF REQUIRED)

I. Instructions for Generators

Item 1. Generator's U.S. EPA Identification Number

Enter the generator's U.S. EPA twelve digit identification number, or the State generator identification number if the generator site does not have an EPA identification number.

Item 2. Page 1 of –

Enter the total number of pages used to complete this Manifest (i.e., the first page (EPA Form 8700-22) plus the number of Continuation Sheets (EPA Form 8700-22A), if any).

Item 3. Emergency Response Phone Number

Enter a phone number for which emergency response information can be obtained in the event of an incident during transportation. The emergency response phone number must:

1. Be the number of the generator or the number of an agency or organization who is capable of and accepts responsibility for providing detailed information about the shipment;

2. Reach a phone that is monitored 24 hours a day at all times the waste is in transportation (including transportation related storage); and

3. Reach someone who is either knowledgeable of the hazardous waste being shipped and has comprehensive emergency response and spill cleanup/incident mitigation information for the material being shipped or has immediate access to a person who has that knowledge and information about the shipment.

(Note: Emergency Response phone number information should only be entered in Item 3 when there is one phone number that applies to all the waste materials described in Item 9b. If a situation (e.g., consolidated shipments) arises where more than one Emergency Response phone number applies to the various wastes listed on the manifest, the phone numbers associated with each specific material should be entered after its description in Item 9b.)

Item 4. Manifest Tracking Number

This unique tracking number must be pre-printed on the manifest by the forms printer.

Item 5. Generator's Mailing Address, Phone Number and Site Address

Enter the name of the generator, the mailing address to which the completed manifest signed by the designated facility should be mailed, and the generator's telephone number. Note, the telephone number (including area code) should be the normal business number for the generator, or the number where the generator or his authorized agent may be reached to provide instructions in the event the designated and/or alternate (if any) facility rejects some or all of the shipment. Also enter the physical site address from which the shipment originates only if this address is different than the mailing address.

Item 6. Transporter 1 Company Name, and U.S. EPA ID Number

Enter the company name and U.S. EPA ID number of the first transporter who will transport the waste. Vehicle or driver information may not be entered here.

Item 7. Transporter 2 Company Name and U.S. EPA ID Number

If applicable, enter the company name and U.S. EPA ID number of the second transporter who will transport the waste. Vehicle or driver information may not be entered here. If more than two transporters are needed, use a Continuation Sheet(s) (EPA Form 8700-22A).

Item 8. Designated Facility Name, Site Address, and U.S. EPA ID Number

Enter the company name and site address of the facility designated to receive the waste listed on this manifest. Also enter the facility's phone number and the U.S. EPA twelve digit identification number of the facility.

Item 9. U.S. DOT Description (Including Proper Shipping Name, Hazard Class or Division, Identification Number, and Packing Group)

Item 9a. If the wastes identified in Item 9b consist of both hazardous and nonhazardous materials, then identify the hazardous materials by entering an ``X'' in this Item next to the corresponding hazardous material identified in Item 9b.

Item 9b. Enter the U.S. DOT Proper Shipping Name, Hazard Class or Division, Identification Number (UN/NA) and Packing Group for each waste as identified in 49 CFR 172. Include technical name(s) and reportable quantity references, if applicable.

(Note: If additional space is needed for waste descriptions, enter these additional descriptions in Item 27 on the Continuation Sheet (EPA Form 8700-22A). Also, if more than one Emergency Response phone number applies to the various wastes described in either Item 9b or Item 27, enter applicable Emergency Response phone numbers immediately following the shipping descriptions for those Items.)

Item 10. Containers (Number and Type)

Enter the number of containers for each waste and the appropriate abbreviation from Table I (below) for the type of container.

Table I.--Types of Containers

BA = Burlap, cloth, paper, or plastic bags.
CF = Fiber or plastic boxes, cartons, cases.
CM = Metal boxes, cartons, cases (including roll-offs).
CW = Wooden boxes, cartons, cases.
CY = Cylinders.
DF = Fiberboard or plastic drums, barrels, kegs.
DM = Metal drums, barrels, kegs.
DT = Dump truck.
DW = Wooden drums, barrels, kegs.
HG = Hopper or gondola cars.
TC = Tank cars.
TP = Portable tanks.
TT = Cargo tanks (tank trucks).

Item 11. Total Quantity

Enter, in designated boxes, the total quantity of waste. Round partial units to the nearest whole unit, and do not enter decimals or fractions. To the extent practical, report quantities using appropriate units of measure that will allow you to report quantities with precision. Waste quantities entered should be based on actual measurements or reasonably accurate estimates of actual quantities shipped. Container capacities are not acceptable as estimates.

Item 12. Units of Measure (Weight/Volume)

Enter, in designated boxes, the appropriate abbreviation from Table II (below) for the unit of measure.

Table II.--Units of Measure

G = Gallons (liquids only).
K = Kilograms.
L = Liters (liquids only).
M = Metric Tons (1000 kilograms).
N = Cubic Meters.
P = Pounds.
T = Tons (2000 pounds).

Y = Cubic Yards.

(Note: Tons, Metric Tons, Cubic Meters, and Cubic Yards should only be reported in connection with very large bulk shipments, such as rail cars, tank trucks, or barges.)

Item 13. Waste Codes

Enter up to six federal and state waste codes to describe each waste stream identified in Item 9b. State waste codes that are not redundant with federal codes must be entered here, in addition to the federal waste codes which are most representative of the properties of the waste.

Item 14. Special Handling Instructions and Additional Information.

1. Generators may enter any special handling or shipment-specific information necessary for the proper management or tracking of the materials under the generator's or other handler's business processes, such as waste profile numbers, container codes, bar codes, or response guide numbers. Generators also may use this space to enter additional descriptive information about their shipped materials, such as chemical names, constituent percentages, physical state, or specific gravity of wastes identified with volume units in Item 12.

2. This space may be used to record limited types of federally required information for which there is no specific space provided on the manifest, including any alternate facility designations; the Manifest Tracking Number of the original manifest for rejected wastes and residues that are re-shipped under a second manifest; and the specification of PCB waste descriptions and PCB out-of-service dates required under 40 CFR 761.207. Generators, however, cannot be required to enter information in this space to meet state regulatory requirements.

Item 15. Generator's/Offeror's Certifications

1. The generator must read, sign, and date the waste minimization certification statement. In signing the waste minimization certification statement, those generators who have not been exempted by statute or regulation from the duty to make a waste minimization certification under section 3002(b) of RCRA are also certifying that they have complied with the waste minimization requirements. The Generator's Certification also contains the required attestation that the shipment has been properly prepared and is in proper condition for transportation (the shipper's certification). The content of the shipper's certification statement is as follows: "I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name and are classified, packaged, marked, and labeled/placarded, and are in all respects in proper condition for transport by highway according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent." When a party other than the generator prepares the shipment for transportation, this party may also sign the shipper's certification statement as the offeror of the shipment.

2. Generator or Offeror personnel may preprint the words, "On behalf of" in the signature block or may hand write this statement in the signature block prior to signing the generator/offeror certification, to indicate that the individual signs as the employee or agent of the named principal.

(Note: All of the above information except the handwritten signature required in Item 15 may be pre-printed.)

II. Instructions for International Shipment Block

Item 16. International Shipments

For export shipments, the primary exporter must check the export box, and enter the point of exit (city and state) from the United States. For import shipments, the importer must check the import box and enter the point of entry

(city and state) into the United States. For exports, the transporter must sign and date the manifest to indicate the day the shipment left the United States. Transporters of hazardous waste shipments must deliver a copy of the manifest to the U.S. Customs when exporting the waste across U.S. borders.

III. Instructions for Transporters

Item 17. Transporters' Acknowledgments of Receipt

Enter the name of the person accepting the waste on behalf of the first transporter. That person must acknowledge acceptance of the waste described on the manifest by signing and entering the date of receipt. Only one signature per transportation company is required. Signatures are not required to track the movement of wastes in and out of transfer facilities, unless there is a change of custody between transporters. If applicable, enter the name of the person accepting the waste on behalf of the second transporter. That person must acknowledge acceptance of the waste described on the manifest by signing and entering the date of receipt.

(Note: Transporters carrying imports, who are acting as importers, may have responsibilities to enter information in the International Shipments Block. Transporters carrying exports may also have responsibilities to enter information in the International Shipments Block. See above instructions for Item 16.)

IV. Instructions for Owners and Operators of Treatment, Storage, and Disposal Facilities

Item 18. Discrepancy

Item 18a. Discrepancy Indication Space

1. The authorized representative of the designated (or alternate) facility's owner or operator must note in this space any discrepancies between the waste described on the Manifest and the waste actually received at the facility. Manifest discrepancies are: significant differences (as defined by §§264.72(b) and 265.72(b)) between the quantity or type of hazardous waste designated on the manifest or shipping paper, and the quantity and type of hazardous waste a facility actually receives, rejected wastes, which may be a full or partial shipment of hazardous waste that the TSDF cannot accept, or container residues, which are residues that exceed the quantity limits for "empty" containers set forth in 40 CFR 261.7(b).

2. For rejected loads and residues (40 CFR 264.72(d), (e), and (f), or 40 CFR 265.72(d), (e), or (f)), check the appropriate box if the shipment is a rejected load (i.e., rejected by the designated and/or alternate facility and is sent to an alternate facility or returned to the generator) or a regulated residue that cannot be removed from a container. Enter the reason for the rejection or the inability to remove the residue and a description of the waste. Also, reference the Manifest Tracking Number for any additional manifests being used to track the rejected waste or residue shipment on the original manifest. Indicate the original Manifest Tracking Number in Item 14, the Special Handling Block and Additional Information Block of the additional manifests.

3. Owners or operators of facilities located in unauthorized States (i.e., states in which the U.S. EPA administers the hazardous waste management program) who cannot resolve significant differences in quantity or type within 15 days of receiving the waste must submit to their Regional Administrator a letter with a copy of the Manifest at issue describing the discrepancy and attempts to reconcile it (40 CFR 264.72(c) and 265.72(c)).

4. Owners or operators of facilities located in authorized States (i.e., those States that have received authorization from the U.S. EPA to administer the hazardous waste management program) should contact their State agency for information on where to report discrepancies involving "significant differences" to state officials.

Item 18b. Alternate Facility (or Generator) for Receipt of Full Load Rejections

Enter the name, address, phone number, and EPA Identification Number of the Alternate Facility which the rejecting TSDF has designated, after consulting with the generator, to receive a fully rejected waste shipment. In the event that a fully rejected shipment is being returned to the generator, the rejecting TSDF may enter the

generator's site information in this space. This field is not to be used to forward partially rejected loads or residue waste shipments.

Item 18c. Alternate Facility (or Generator) Signature

The authorized representative of the alternate facility (or the generator in the event of a returned shipment) must sign and date this field of the form to acknowledge receipt of the fully rejected wastes or residues identified by the initial TSDF.

Item 19. Hazardous Waste Report Management Method Codes

Enter the most appropriate Hazardous Waste Report Management Method code for each waste listed in Item 9. The Hazardous Waste Report Management Method code is to be entered by the first treatment, storage, or disposal facility (TSDF) that receives the waste and is the code that best describes the way in which the waste is to be managed when received by the TSDF.

Item 20. Designated Facility Owner or Operator Certification of Receipt (Except As Noted in Item 18a)

Enter the name of the person receiving the waste on behalf of the owner or operator of the facility. That person must acknowledge receipt or rejection of the waste described on the Manifest by signing and entering the date of receipt or rejection where indicated. Since the Facility Certification acknowledges receipt of the waste except as noted in the Discrepancy Space in Item 18a, the certification should be signed for both waste receipt and waste rejection, with the rejection being noted and described in the space provided in Item 18a. Fully rejected wastes may be forwarded or returned using Item 18b after consultation with the generator. Enter the name of the person accepting the waste on behalf of the owner or operator of the alternate facility or the original generator. That person must acknowledge receipt or rejection of the waste described on the Manifest by signing and entering the date they received or rejected the waste in Item 18c. Partially rejected wastes and residues must be re-shipped under a new manifest, to be initiated and signed by the rejecting TSDF as offeror of the shipment.

Manifest Continuation Sheet Instructions – Continuation Sheet, U. S. EPA Form 8700-22A

Read all instructions before completing this form. This form has been designed for use on a 12-pitch (elite) typewriter; a firm point pen may also be used--press down hard.

This form must be used as a continuation sheet to U.S. EPA Form 8700-22 if:

- More than two transporters are to be used to transport the waste; or
- More space is required for the U.S. DOT descriptions and related information in Item 9 of U.S. EPA Form 8700-22.

Federal regulations require generators and transporters of hazardous waste and owners or operators of hazardous waste treatment, storage, or disposal facilities to use the Uniform Hazardous Waste Manifest (EPA Form 8700-22) and, if necessary, this continuation sheet (EPA Form 8700-22A) for both interstate and intrastate transportation.

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST (Continuation Sheet)

21. Generator ID Number | 22. Page | 23. Manifest Tracking Number

24. Generator's Name

25. Transporter _____ Company Name | U.S. EPA ID Number

26. Transporter _____ Company Name | U.S. EPA ID Number

GENERATOR

27a. HM	27b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	28. Containers No.	28. Containers Type	29. Total Quantity	30. Unit Wt./Vol.	31. Waste Codes		

32. Special Handling Instructions and Additional Information

TRANSPORTER

33. Transporter _____ Acknowledgment of Receipt of Materials
Printed/Typed Name | Signature | Month | Day | Year

34. Transporter _____ Acknowledgment of Receipt of Materials
Printed/Typed Name | Signature | Month | Day | Year

DESIGNATED FACILITY

35. Discrepancy

36. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)

EPA Form 8700-22A (Rev. 3-05) Previous editions are obsolete.

DESIGNATED FACILITY TO DESTINATION STATE (IF REQUIRED)

Item 21. Generator's ID Number

Enter the generator's U.S. EPA twelve digit identification number or, the State generator identification number if the generator site does not have an EPA identification number.

Item 22. Page ----

Enter the page number of this Continuation Sheet.

Item 23. Manifest Tracking Number

Enter the Manifest Tracking Number from Item 4 of the Manifest form to which this continuation sheet is attached.

Item 24. Generator's Name--

Enter the generator's name as it appears in Item 5 on the first page of the Manifest.

Item 25. Transporter--Company Name

If additional transporters are used to transport the waste described on this Manifest, enter the company name of each additional transporter in the order in which they will transport the waste. Enter after the word "Transporter" the order of the transporter. For example, Transporter 3 Company Name. Also enter the U.S. EPA twelve digit identification number of the transporter described in Item 25.

Item 26. Transporter--Company Name

If additional transporters are used to transport the waste described on this Manifest, enter the company name of each additional transporter in the order in which they will transport the waste. Enter after the word "Transporter" the order of the transporter. For example, Transporter 4 Company Name. Each Continuation Sheet can record the names of two additional transporters. Also enter the U.S. EPA twelve digit identification number of the transporter named in Item 26.

Item 27. U.S. D.O.T. Description Including Proper Shipping Name, Hazardous Class, and ID Number (UN/NA)

For each row enter a sequential number under Item 27b that corresponds to the order of waste codes from one continuation sheet to the next, to reflect the total number of wastes being shipped. Refer to instructions for Item 9 of the manifest for the information to be entered.

Item 28. Containers (No. And Type)

Refer to the instructions for Item 10 of the manifest for information to be entered.

Item 29. Total Quantity

Refer to the instructions for Item 11 of the manifest form.

Item 30. Units of Measure (Weight/Volume)

Refer to the instructions for Item 12 of the manifest form.

Item 31. Waste Codes

Refer to the instructions for Item 13 of the manifest form.

Item 32. Special Handling Instructions and Additional Information

Refer to the instructions for Item 14 of the manifest form.

Item 33. Transporter--Acknowledgment of Receipt of Materials

Enter the same number of the Transporter as identified in Item 25. Enter also the name of the person accepting the waste on behalf of the Transporter (Company Name) identified in Item 25. That person must acknowledge acceptance of the waste described on the Manifest by signing and entering the date of receipt.

Item 34. Transporter--Acknowledgment of Receipt of Materials

Enter the same number of the Transporter as identified in Item 26. Enter also the name of the person accepting the waste on behalf of the Transporter (Company Name) identified in Item 26. That person must acknowledge acceptance of the waste described on the Manifest by signing and entering the date of receipt.

Owner and Operators of Treatment, Storage, or Disposal Facilities

Item 35. Discrepancy Indication Space

Refer to Item 18. This space may be used to more fully describe information on discrepancies identified in Item 18a of the manifest form.

Item 36. Hazardous Waste Report Management Method Codes

For each field here, enter the sequential number that corresponds to the waste materials described under Item 27, and enter the appropriate process code that describes how the materials will be processed when received. If additional continuation sheets are attached, continue numbering the waste materials and process code fields sequentially, and enter on each sheet the process codes corresponding to the waste materials identified on that sheet.

* * * * *

Authority: T.C.A. §§ 68-212-101 et seq. and 4-5-201 et seq.

~~1200-01-11-.04~~ 0400-12-01-.04 Requirements Applicable to Transfer Facilities and Permit Requirements and Standards Applicable to Transporters of Hazardous Waste.

(1) General [40 CFR 263 Subpart A]

(a) Scope [40 CFR 263.10]

1. These regulations establish standards which apply to persons transporting hazardous waste within Tennessee if the transportation requires a manifest under Rule ~~1200-01-11-.03~~ 0400-12-01-.03.

2. Nothing in this rule shall exempt a transporter from his responsibilities under the rules and regulations of the U.S. Department of Transportation, the U.S. Department of Homeland Security, or the Tennessee Regulatory Commission.

3. These regulations do not apply to on-site transportation of hazardous waste by generators or by owners or operators of permitted hazardous waste management facilities.

4. A transporter of hazardous waste must also comply with Rule ~~1200-01-11-.03~~ 0400-12-01-.03 if he:

(i) Transports hazardous waste into the state from a foreign country (except for the notification requirements of Rule ~~1200-01-11-.03~~ 0400-12-01-.03(2)); or

(ii) Mixes hazardous wastes of different DOT shipping descriptions by placing them into a single container.

5. ~~(Reserved) [40 CFR 263.10(d)).~~ A transporter of hazardous waste subject to the Federal manifesting requirements of 40 CFR Part 262, or subject to the waste management standards of 40 CFR Part 273 or Rule 0400-12-01-.12 that are being imported from or exported to any of the countries listed in subpart (7)(i)1(i) of Rule 0400-12-01-.03 for the purposes of recovery is subject to this paragraph and to all relevant requirements of 40 CFR Part 262, Subpart H, including, but not limited to, 40 CFR 262.84 for movement documents.

6. The regulations in this part do not apply to transportation during an explosives or munitions emergency response, conducted in accordance with Rule ~~1200-01-11-.05~~ 0400-12-01-.05(1)(b)2(vii)(I)IV or (IV) or Rule ~~1200-01-11-.06~~ 0400-12-01-.06(1)(b)2(vii)(I)IV or (IV) and Rule ~~1200-01-11-.07~~ 0400-12-01-.07(1)(b)5(i)(IV) or (iii).

7. Rule ~~1200-01-11-.09~~ 0400-12-01-.09(13)(d) identifies how the requirements of this rule apply to military munitions classified as solid waste under Rule ~~1200-01-11-.09~~ 0400-12-01-.09(13)(c).

(b) Installation Identification Number and Transporter Permit [40 CFR 263.11]

1. A transporter must not transport hazardous waste which originates or terminates in Tennessee without having received an installation identification number and a transporter permit from the Department. Out-of-State transporters must obtain their installation identification numbers from their respective state agency or EPA, if appropriate.

2. A hazardous waste transfer facility shall not operate without having received an installation identification number from the Department by December 31 following September 6, 2004.

(c) Transfer Facility Requirements [40 CFR 263.12]

1. A hazardous waste transfer facility shall not operate without having received an installation identification number from the Department.

2. The operator of a hazardous waste transfer facility shall maintain a log of all shipments of hazardous waste entering and leaving the facility and other information specified by the Commissioner. Required information shall be tracked on forms provided by the Commissioner on the Division website or an equivalent tracking system. The log shall be retained for a period of five (5) years and made available for review by the Commissioner's representative.

3. The operator of a hazardous waste transfer facility shall insure that the transfer facility's operations comply with the provisions of:

   (i) Rule ~~1200-01-11-.05~~ 0400-12-01-.05(2)(g), Personnel Training;

   (ii) Rule ~~1200-01-11-.05~~ 0400-12-01-.05(9), Use and Management of Containers, except subparagraphs (e) and (i); and

   (iii) Rule ~~1200-01-11-.05~~ 0400-12-01-.05(2)(e), Security.

4. Except for the requirements of part 3 of this subparagraph, a transporter who stores manifested shipments of hazardous waste in containers meeting applicable DOT and Tennessee Regulatory Commission regulations and Rule 0400-12-01-.03(4) ~~for packaging~~ at a transfer facility for a period of ten days or less is not subject to regulation under Rules ~~1200-01-11-.05~~ 0400-12-01-.05, ~~1200-01-11-.06~~ 0400-12-01-.06, ~~1200-01-11-.07~~ 0400-12-01-.07, or ~~1200-01-11-.10~~ 0400-12-01-.10 with respect to the storage of those wastes.

(2) Permitting

(a) Applicability - Each person who transports in Tennessee a hazardous waste that originates or terminates in Tennessee must have a valid hazardous waste transporter permit obtained from the Department in accordance with subparagraph (b) of this paragraph, and is subject to the requirements of subparagraphs (c) and (d) of this paragraph. This permit is not required if the hazardous waste shipment is passing through the State.

(b) Obtaining a Permit

1. Any person who wishes to transport hazardous waste to or from locations within Tennessee must apply for and receive a hazardous waste transporter permit from the Department before beginning such transport operations. The transporter must submit the permit renewal form to the Department by December 31.

2. Application for or renewal of a permit shall consist of a written notification to the Department on forms provided by the Department. Such forms must be completed according to the instructions accompanying them. Information on the forms shall include, but not be limited to, the name, installation identification number, if previously issued, business address, telephone number of the transporter, and all applicable permit fees required under Rule ~~1200-01-11-.08~~ 0400-12-01-.08(2)(a).

3. (i) The Commissioner shall issue the permit within 15 days following his receipt of a new permit application (not a renewal), unless such application is by a person that (1) had previously held a permit that was terminated by the Commissioner for violation of the requirements of these rules, or (2) had been operating as a transporter in violation of the permit requirement of this paragraph. Such persons shall not be issued a permit unless and until they demonstrate, to the satisfaction of the Commissioner, their willingness and capability to comply with the Act and these rules.

(ii) The Commissioner shall issue the permit for a renewal by January 31 following his receipt of the permit renewal application, unless such application is by a person that (1) had previously held a permit that was terminated by the Commissioner for violation of the requirements of these rules, or (2) had been operating as a transporter in violation of the permit requirement of this paragraph. Such persons shall not be issued a permit unless and until they demonstrate, to the satisfaction of the Commissioner, their willingness and capability to comply with the Act and these rules.

4. Transporter permits shall not be transferable.

(c) Permit Duration/Renewal/Termination

1. Unless terminated as set forth in part 3 of this subparagraph, transporter permits shall remain in effect until January 31 of the following calendar year.

2. Unless he has initiated termination proceedings as set forth in part 3 of this subparagraph, the Commissioner shall automatically renew each transporter permit for another year upon his timely receipt of the annual maintenance fee required under Rule ~~1200-01-11-.08~~ 0400-12-01-.08(3)(a).

3. (i) The Commissioner shall terminate a transporter permit within 10 days of receiving a request from the transporter to do so.

(ii) The Commissioner, after notifying the transporter and providing him with the opportunity to be heard on the matter, may by order terminate the permit of any transporter upon his violation of one or more of the applicable requirements of this ~~Rule~~ Chapter or ~~Rule~~ Chapter 1200-01-13.

(d) General Requirements

1. The permit shall be issued with an installation identification number as required under subparagraph (1)(b) of this rule. This number must be included on all manifests and other official documents and on correspondence between the transporter and the Department.

2. Transporters shall maintain a copy of their permit application on file, and shall notify the Department in writing within 30 days of any changes in the information submitted or of cessation of hazardous waste transportation services in this state.

3. A motor vehicle transporter shall have a copy of his permit with him and available for inspection whenever he picks up, transports, or delivers a shipment of hazardous waste in Tennessee; and shall provide the generator/shipper/transfer facility operator with the opportunity to inspect that permit if so requested.

(3) Compliance With the Manifest System and Recordkeeping [40 CFR 263 Subpart B]

(a) The Manifest System [40 CFR 263.20]

1. Manifest Requirements

A transporter may not accept hazardous waste from a generator unless the transporter is also provided with a manifest signed in accordance with the requirements of subparagraph (3)(d) of Rule ~~1200-01-11-.03~~ 0400-12-01-.03.

2. Exports

In the case of exports other than those subject to Subpart H of 40 CFR 262, a transporter may not accept such waste from a primary exporter or other person if he knows the

shipment does not conform to the EPA Acknowledgement of Consent; and unless, in addition to a manifest signed by the generator as provided in this paragraph, the transporter shall also be provided with an EPA Acknowledgement of Consent which, except for shipments by rail, is attached to the manifest (or shipping paper for exports by water (bulk shipment)). For exports of hazardous waste subject to the requirements of Subpart H of 40 CFR 262, a transporter may not accept hazardous waste without a tracking document that includes all information required by 40 CFR 262.84.

3. Compliance Date for Form Revisions

The revised Manifest form and procedures in subparagraph (2)(a) of Rule ~~1200-01-11-.01~~ 0400-12-01-.01, subparagraph (1)(g) of Rule ~~1200-01-11-.02~~ 0400-12-01-.02, and subparagraphs (3)(a) and (3)(b) of Rule ~~1200-01-11-.04~~ 0400-12-01-.04 shall not apply until September 5, 2006.

4. A transporter who delivers a hazardous waste to another transporter or to the designated facility must:

(i) Obtain the date of delivery and the handwritten signature of that transporter or of the owner or operator of the designated facility on the manifest; and

(ii) Retain one copy of the manifest in accordance with subparagraph (c) of this paragraph; and

(iii) Give the remaining copies of the manifest to the accepting transporter or designated facility.

5. The requirements of parts 3, 4, and 6 of this subparagraph do not apply to water (bulk shipment) transporters if:

(i) The hazardous waste is delivered by water (bulk shipment) to the designated facility; and

(ii) A shipping paper containing all the information required on the manifest (excluding the Installation Identification Numbers, generator certification, and signatures) and, for exports, an EPA Acknowledgment of Consent accompanies the hazardous waste; and

(iii) The delivering transporter obtains the date of delivery and handwritten signature of the owner or operator of the designated facility on either the manifest or the shipping paper; and

(iv) The person delivering the hazardous waste to the initial water (bulk shipment) transporter obtains the date of delivery and signature of the water (bulk shipment) transporter on the manifest and forwards it to the designated facility; and

(v) A copy of the shipping paper or manifest is retained by each water (bulk shipment) transporter in accordance with subparagraph (c) of this paragraph.

6. For shipments involving rail transportation, the requirements of parts 3, 4, and 5 do not apply and the following requirements do apply:

(i) When accepting hazardous waste from a non-rail transporter, the initial rail transporter must:

(I) Sign and date the manifest acknowledging acceptance of the hazardous waste;

(II) Return a signed copy of the manifest to the non-rail transporter;

(III) Forward at least three copies of the manifest to:

I. The next non-rail transporter, if any; or

II. The designated facility, if the shipment is delivered to that facility by rail; or

III. The last rail transporter designated to handle the waste in the United States;

(IV) Retain one copy of the manifest and rail shipping paper in accordance with subparagraph (c) of this paragraph.

(ii) Rail transporters must ensure that a shipping paper containing all the information required on the manifest (excluding the Installation Identification Numbers, generator certification, and signatures) and, for exports an EPA Acknowledgment of Consent accompanies the hazardous waste at all times.

(Note: Intermediate rail transporters are not required to sign either the manifest or shipping paper.)

(iii) When delivering hazardous waste to the designated facility, a rail transporter must:

(I) Obtain the date of delivery and handwritten signature of the owner or operator of the designated facility on the manifest or the shipping paper (if the manifest has not been received by the facility); and

(II) Retain a copy of the manifest or signed shipping paper in accordance with subparagraph (c) of this paragraph.

(iv) When delivering hazardous waste to a non-rail transporter a rail transporter must:

(I) Obtain the date of delivery and the handwritten signature of the next non-rail transporter on the manifest; and

(II) Retain a copy of the manifest in accordance with subparagraph (c) of this paragraph.

(v) Before accepting hazardous waste from a rail transporter, a non-rail transporter must sign and date the manifest and provide a copy to the rail transporter.

7. Transporters who transport hazardous waste out of the United States must:

(i) Sign and date the manifest in the International Shipments block to indicate the date that the shipment left the United States; and

(ii) Retain one copy in accordance with part (c)4 of this subparagraph; and

(iii) Return a signed copy of the manifest to the generator; and

(iv) Give a copy of the manifest to a U.S. Customs official at the point of departure from the United States.

8. A transporter transporting hazardous waste from a generator who generates greater than 100 kilograms but less than 1000 kilograms of hazardous waste in a calendar month

need not comply with the requirements of this subparagraph or those of subparagraph (c) of this paragraph provided that:

(i) The waste is being transported pursuant to a reclamation agreement as provided for in Rule ~~1200-01-11-.03~~ 0400-12-01-.03(3)(a)5;

(ii) The transporter records, on a log or shipping paper, the following information for each shipment:

(I) The name, address, and U.S. Installation Identification Number of the generator of the waste;

(II) The quantity of waste accepted;

(III) All DOT-required shipping information;

(IV) The date the waste is accepted; and

(iii) The transporter carries this record when transporting waste to the reclamation facility; and

(iv) The transporter retains these records for a period of at least three years after termination or expiration of the agreement.

(b) Compliance with the Manifest [40 CFR 263.21]

1. The transporter must deliver the entire quantity of hazardous waste which he has accepted from a generator or a transporter to:

(i) The designated facility listed on the manifest; or

(ii) The alternate designated facility, if the hazardous waste cannot be delivered to the designated facility because an emergency prevents delivery; or

(iii) The next designated transporter; or

(iv) The place outside the United States designated by the generator.

2. (i) If the hazardous waste cannot be delivered in accordance with part 1 of this subparagraph because of an emergency condition other than rejection of the waste by the designated facility, then the transporter must contact the generator for further directions and must revise the manifest according to the generator's instructions.

(ii) If hazardous waste is rejected by the designated facility while the transporter is on the facility's premises, then the transporter must obtain the following:

(I) For a partial load rejection or for regulated quantities of container residues, a copy of the original manifest that includes the facility's date and signature and the Manifest Tracking Number of the new manifest that will accompany the shipment, and a description of the partial rejection or container residue in the discrepancy block of the original manifest. The transporter must retain a copy of this manifest in accordance with subparagraph (3)(e) of this rule, and give the remaining copies of the original manifest to the rejecting designated facility. If the transporter is forwarding the rejected part of the shipment or a regulated container residue to an alternate facility or returning it to the generator, the transporter must obtain a new manifest to accompany the shipment, and the new manifest must include all of the information required in Rule

~~1200-01-11-.06~~ 0400-12-01-.06(5)(c)5(i) though (vi) or 6(i) through (vi) or Rule ~~1200-01-11-.05~~ 0400-12-01-.05(5)(c)5(i) though (vi) or 6(i) through (vi).

(II) For a full load rejection that will be taken back by the transporter, a copy of the original manifest that includes the rejecting facility's signature and date attesting to the rejection, the description of the rejection in the discrepancy block of the manifest, and the name, address, phone number, and Identification Number for the alternate facility or generator to whom the shipment must be delivered. The transporter must retain a copy of the manifest in accordance with subparagraph (3)(c) of this rule, and give a copy of the manifest containing this information to the rejecting designated facility. If the original manifest is not used, then the transporter must obtain a new manifest for the shipment and comply with Rule ~~1200-01-11-.06~~ 0400-12-01-.06(5)(c)5(i) through (vi) or Rule ~~1200-01-11-.05~~ 0400-12-01-.05(5)(c)5(i) through (vi).

(c) Recordkeeping [40 CFR 263.22]

1. A transporter of hazardous waste must keep a copy of the manifest signed by the generator, himself, and the next designated transporter or the owner or operator of the designated facility for a period of three years from the date the hazardous waste was accepted by the initial transporter.

2. For shipments delivered to the designated facility by water (bulk shipment), each water (bulk shipment) transporter must retain a copy of the shipping paper containing all the information required in subpart (a)5(ii) of this paragraph for a period of three years from the date the hazardous waste was accepted by the initial transporter.

3. For shipments of hazardous waste by rail within the United States:

   (i) The initial rail transporter must keep a copy of the manifest and shipping paper with all the information required in subpart (a)6(ii) of this paragraph for a period of three years from the date the hazardous waste was accepted by the initial transporter; and

   (ii) The final rail transporter must keep a copy of the signed manifest (or the shipping paper if signed by the designated facility in lieu of the manifest) for a period of three years from the date the hazardous waste was accepted by the initial transporter.

   (Note: Intermediate rail transporters are not required to keep records pursuant to these regulations.)

4. A transporter who transports hazardous waste out of the United States must keep a copy of the manifest indicating that the hazardous waste left the United States for a period of three years from the date the hazardous waste was accepted by the initial transporter.

5. The periods of retention referred to in this subparagraph are extended automatically during the course of any unresolved enforcement action regarding the regulated activity or as requested by the Administrator/Commissioner.

6. Any person who holds or has held a transporter permit in Tennessee pursuant to paragraph (2) of this rule must furnish upon request, and make available at all reasonable times for inspection, by any officer, employee, or representative of the Department who is duly designated by the Commissioner, all records required under this subparagraph.

7. A transfer facility must maintain an operating record or log to demonstrate its compliance with the 10-day storage limit for hazardous waste as set forth in subparagraph (1)(c) of this rule.

(4) Hazardous Waste Discharges [40 CFR 263 Subpart C]

(a) Immediate Action [40 CFR 263.30]

1. In the event of a discharge of hazardous waste during transportation, the transporter must take appropriate immediate action to protect public health and the environment (e.g., notify local authorities, dike the discharge area).

2. If a discharge of hazardous waste occurs during transportation and an official (State or local government or a Federal Agency) acting within the scope of his official responsibilities determines that immediate removal of the waste is necessary to protect public health or the environment, that official may authorize the removal of the waste by transporters who do not have installation identification numbers and without the preparation of a manifest.

3. A transporter who has discharged hazardous waste in Tennessee must immediately telephone the 24-hour toll-free number of the Tennessee Emergency Management Agency, which is 800-262-3300 for in-state callers or 800-258-3300 for out-of-state callers, and furnish the following information:

(i) Name of person reporting the spill;

(ii) Name and address of transporter involved;

(iii) Name and address of generator;

(iv) Telephone number where reporter can be contacted;

(v) Date, time, and location of incident (indicate pollution of land, water, air, or public water supply, if known);

(vi) Type of incident (e.g., fire, spillage);

(vii) Description (including hazard class) and quantity of hazardous waste involved, to the extent available;

(viii) Type of transport vehicle and mode; and

(ix) The extent of injuries, if any.

(Note: Under DOT regulations (49 CFR 171.15 and 171.16), the transporter may also be required to give notice to the National Response Center at 800-424-8802 or 202-426-2675 and report in writing to DOT.)

4. An air, rail, highway, or water transporter who has discharged hazardous waste must report in writing as required by 49 CFR 171.16 to the Director, Office of Hazardous Materials Regulations, Materials Transportation Bureau, Department of Transportation, Washington, DC 20590.

(Note: A copy of the U.S. Department of Transportation (DOT) form F5800.1 shall suffice for this report provided that it is properly completed and supplemented as necessary to include all information required by this paragraph.)

5. A water (bulk shipment) transporter who has discharged hazardous waste must give the same notice as required by 33 CFR 153.203 (as that Federal regulation exists on the effective date of these rules) for oil and hazardous substances.

(b) Discharge Clean Up [40 CFR 263.31]

1. A transporter must clean up any hazardous waste discharge that occurs during transportation or take such action as may be required or approved by Federal, State, or local officials so that the hazardous waste discharge no longer presents a hazard to public health or the environment.

Authority: T.C.A. §§ 68-212-101 et seq. and 4-5-201 et seq.

~~1200-01-11-.05~~ 0400-12-01-.05 Interim Status Standards for Owners and Operators of Existing Hazardous Waste Treatment, Storage, and Disposal Facilities.

(1) General [40 CFR 265 Subpart A]

(a) Purpose [40 CFR 265.1]

1. The purpose of this rule is to establish minimum standards that define the acceptable management of hazardous waste during the period of interim status and until certification of final closure or, if the facility is subject to post-closure requirements, until post-closure responsibilities are fulfilled.

(b) Applicability [40 CFR 265.1]

1. Except as provided in part (29)(a)2 of this rule, the standards of this rule and of Rule ~~1200-01-11-.06~~ 0400-12-01-.06(22)(c), (d), and (e) apply to owners and operators of facilities that treat, store, or dispose of hazardous waste who have fully complied with the requirements for interim status under Rules ~~1200-01-11-.07~~ 0400-12-01-.07(2) and (3) until either a permit is issued under Rule ~~1200-01-11-.07~~ 0400-12-01-.07(7) or until applicable closure and post-closure responsibilities under this rule are fulfilled, and to those owners and operators of facilities in existence on November 19, 1980 who have failed to file Part A of the permit application as required by Rule ~~1200-01-11-.07~~ 0400-12-01-.07(2)(b) and (d). These standards apply to all treatment, storage, and disposal of hazardous waste at these facilities after the effective date of this ~~Rule~~ Chapter, except as specifically provided otherwise in this rule or Rule ~~1200-01-11-.02~~ 0400-12-01-.02. The requirements of this rule apply to owners or operators of all facilities which treat, store or dispose of hazardous waste referred to in Rule ~~1200-01-11-.10~~ 0400-12-01-.10, and the standards of Rule ~~1200-01-11-.10~~ 0400-12-01-.10 are considered material conditions or requirements of this Rule ~~0400-12-01-.05 interim status~~.

(Note: ~~Rule~~ Chapter ~~1200-01-11~~ 0400-12-01 became effective as rulemaking hearing rules on March 2, 1981.)

2. The requirements of this rule do not apply to:

(i) The owner or operator of a facility permitted or registered by the Commissioner or Board, as appropriate, pursuant to the "Tennessee Solid Waste Disposal Act" (T.C.A. §§68-211-101 through 68-211-115 and 68-211-301), to manage municipal or industrial waste, if the only hazardous waste the facility treats, stores, or disposes of is excluded from regulation under this rule by Rule ~~1200-01-11-.02~~ 0400-12-01-.02(1)(e) as a "small quantity";

(ii) The addition of absorbent material to waste in a container (as defined in Rule ~~1200-01-11-.01~~ 0400-12-01-.01(2)) or the addition of waste to the absorbent material in a container, provided that these actions occur at the time waste is first placed in the container; and part (2)(h)2, subparagraph (9)(b), and subparagraph (9)(c) of this rule are complied with;

(iii) The owner and operator of a facility managing recyclable materials described in Rule ~~1200-01-11-.02~~ 0400-12-01-.02(1)(f)1(ii), (iii), and (iv) (except to the extent they are referred to in Rule ~~1200-01-11-.11~~ 0400-12-01-.11 or in paragraph (3), (6), (7), or (8) of Rule ~~1200-01-11-.09~~ 0400-12-01-.09);

(iv) A generator accumulating waste on-site in compliance with Rule ~~1200-01-11-.03~~ 0400-12-01-.03(4)(e) (except to the extent such requirements are included in Rule ~~1200-01-11-.03~~ 0400-12-01-.03(4)(e)), unless the generator is accumulating the waste in a facility otherwise subject to this rule;

(v) The owner or operator of a totally enclosed treatment facility, as defined in Rule

~~1200-01-11-.01~~ 0400-12-01-.01(2);

(vi) The owner or operator of one of the following units, as defined in Rule ~~1200-01-11-.01~~ 0400-12-01-.01(2)(a), provided that if the owner or operator is diluting hazardous ignitable (D001) wastes (other than the D001 High TOC Subcategory defined in Rule ~~1200-01-11-.10~~ 0400-12-01-.10(3)(a), Table Treatment Standards for Hazardous Wastes), or reactive (D003) waste, to remove the characteristic before land disposal, the owner/operator must comply with the requirements set out in part (2)(h)2 of this rule:

(I) an elementary neutralization unit;

(II) an on-site wastewater treatment unit; or

(III) an off-site wastewater treatment unit located at a facility otherwise required to have a permit issued pursuant to Rule ~~1200-01-11-.07~~ 0400-12-01-.07(7).

(vii) (I) Except as provided in item (II) of this subpart, a person engaged in treatment or containment activities during immediate response to any of the following situations:

I. A discharge of a hazardous waste;

II. An imminent and substantial threat of a discharge of hazardous waste;

III. A discharge of a material which, when discharged, becomes a hazardous waste.

IV. An immediate threat to human health, public safety, property, or the environment, from the known or suspected presence of military munitions, other explosive material, or an explosive device, as determined by an explosive or munitions emergency response specialist as defined in Rule ~~1200-01-11-.01~~ 0400-12-01-.01(2)(a).

(II) An owner or operator of a facility otherwise regulated by this rule must comply with all applicable requirements of paragraphs (3) and (4) of this rule.

(III) Any person who is covered by item (I) of this subpart and who continues or initiates hazardous waste treatment or containment activities after the immediate response is over is subject to all applicable requirements of this rule and Rules ~~1200-01-11-.06~~ 0400-12-01-.06 and ~~1200-01-11-.07~~ 0400-12-01-.07 for those activities.

(IV) In the case of an explosives or munitions emergency response, if a Federal, State, Tribal or local official acting within the scope of his or her official responsibilities, or an explosives or munitions emergency response specialist, determines that immediate removal of the material or waste is necessary to protect human health or the environment, that official or specialist may authorize the removal of the material or waste by transporters who do not have Installation Identification Numbers and without the preparation of a manifest. In the case of emergencies involving military munitions, the responding military emergency response specialist's organizational unit must retain records for three years identifying the dates of the response, the responsible persons responding, the type and description of material addressed, and its

disposition.

(viii) A transporter storing manifested shipments of hazardous waste in containers meeting applicable DOT and Tennessee Regulatory Commission regulations for packaging at a transfer facility for a period of ten days or less;

(ix) A person disposing of hazardous waste by means of underground injection subject to permits issued under Chapter 1200-04-06 of the rules of the State of Tennessee and under Part C of the Federal Safe Drinking Water Act (42 U.S.C. 3001 et seq.);

(Comment: This rule does apply to the aboveground treatment or storage of hazardous waste before it is injected underground.)

(x) The owner or operator of a POTW which treats, stores, or disposes of hazardous waste;

(xi) A farmer disposing of waste pesticides from his own use in compliance with Rule ~~1200-01-11-.02~~ 0400-12-01-.02(1)(d)1(ii)(II).

(xii) Universal waste handlers and universal waste transporters (as defined in Rule ~~1200-01-11-.01~~ 0400-12-01-.01(2)(a)) handling the wastes listed in Rule ~~1200-01-11-.12~~ 0400-12-01-.12(1)(a). These handlers are subject to regulation under Rule ~~1200-01-11-.12~~ 0400-12-01-.12, when handling the universal wastes listed in Rule ~~1200-01-11-.12~~ 0400-12-01-.12(1)(a).

(Comment: The owner or operator of a facility under subparts (ix) and (x) of this part is subject to the requirements of Rule ~~1200-01-11-.06~~ 0400-12-01-.06 to the extent those requirements are included in a permit-by-rule granted to such a person under Rule ~~1200-01-11-.07~~ 0400-12-01-.07(1)(c).)

(c) Prohibitions [40 CFR 265.1(d)]

1. The following hazardous wastes must not be managed at facilities subject to regulation under this rule:

(i) Wastes included under hazardous waste listings F020, F021, F022, F023, F026, or F027, unless:

(I) The waste is a wastewater treatment sludge generated in a surface impoundment as part of the plant's wastewater treatment system; or

(II) The waste is stored in tanks or containers; or

(III) The waste is stored or treated in waste piles that meet the requirements of Rule ~~1200-01-11-.06~~ 0400-12-01-.06(12)(a)3 as well as all other applicable requirements of paragraph (12) of this rule.

(d) Rule ~~1200-01-11-.09~~ 0400-12-01-.09(13)(f) identifies when the requirements of this rule apply to the storage of military munitions classified as solid waste under Rule ~~1200-01-11-.09~~ 0400-12-01-.09(13)(c). The treatment and disposal of hazardous waste military munitions are subject to the applicable permitting, procedural, and technical standards in Rules ~~1200-01-11-.01~~ 0400-12-01-.01 through .10.

(2) General Facility Standards [40 CFR 265 Subpart B]

(a) Applicability [40 CFR 265.10]

The regulations in this subpart apply to owners and operators of all hazardous waste facilities,

except as subparagraph (1)(b) of this rule provides otherwise.

(b) Identification Number [40 CFR 265.11]

Every facility owner or operator must apply to the Department for an Installation Identification Number in accordance with the permit application procedures of Rule ~~1200-01-11-.07~~ 0400-12-01-.07(2).

(c) Required Notices [40 CFR 265.12]

1. (i) The owner or operator of a facility that has arranged to receive hazardous waste from a foreign source must notify the Commissioner in writing at least four weeks in advance of the date the waste is expected to arrive at the facility. Notice of subsequent shipments of the same waste from the same foreign source is not required.

(ii) ~~(Reserved) [40 CFR 265.12(a)(2)]~~ The owner or operator of a recovery facility that has arranged to receive hazardous waste subject to 40 CFR Part 262, Subpart H must provide a copy of the movement document bearing all required signatures to the foreign exporter, to the Office of Enforcement and Compliance Assurance, Office of Federal Activities, International Compliance Assurance Division (2254A) , Environmental Protection Agency, 1200 Pennsylvania Avenue, NW., Washington, DC 20460; and to the competent authorities of all other countries concerned within three (3) working days of receipt of the shipment. The original of the signed movement document must be maintained at the facility for at least three (3) years. In addition, such owner or operator shall, as soon as possible, but no later than thirty (30) days after the completion of recovery and no later than one (1) calendar year following the receipt of the hazardous waste, send a certificate of recovery to the foreign exporter and to the competent authority of the country of export and to EPA's Office of Enforcement and Compliance Assurance at the above address by mail, e-mail without a digital signature followed by mail, or fax followed by mail.

2. Before transferring ownership or operation of a facility during its operating life, or of a disposal facility during the post-closure care period, the owner or operator must notify the new owner or operator in writing of the requirements of this rule, Rule ~~1200-01-11-.07~~ 0400-12-01-.07, and Rule ~~1200-01-11-.08~~ 0400-12-01-.08. (Also see Rule ~~1200-01-11-.07~~ 0400-12-01-.07(3).)

(Comment: An owner's or operator's failure to notify the new owner or operator of the requirements of this rule in no way relieves the new owner or operator of his obligation to comply with all applicable requirements.)

(d) General Waste Analysis [40 CFR 265.13]

1. (i) Before an owner or operator treats, stores, or disposes of any hazardous wastes, or nonhazardous wastes if applicable under part (7)(d)4 of this rule, he must obtain a detailed chemical and physical analysis of a representative sample of the wastes. At a minimum, the analysis must contain all the information which must be known to treat, store, or dispose of the waste in accordance with this rule and Rule ~~1200-01-11-.10~~ 0400-12-01-.10.

(ii) The analysis may include data developed under Rule ~~1200-01-11-.02~~ 0400-12-01-.02, and existing published or documented data on the hazardous waste or on waste generated from similar processes.

(Comment: For example, the facility's records of analyses performed on the waste before the effective date of these regulations, or studies conducted on hazardous waste generated from processes similar to that which generated the

waste to be managed at the facility, may be included in the data base required to comply with subpart 4 (i) of this ~~subparagraph~~ part. The owner or operator of an off-site facility may arrange for the generator of the hazardous waste to supply part of the information required by subpart 4 (i) of this ~~subparagraph~~ part, except as otherwise specified in Rule ~~1200-01-11-.10~~ 0400-12-01-.10(1)(g)2 and 3. If the generator does not supply the information, and the owner or operator chooses to accept a hazardous waste, the owner or operator is responsible for obtaining the information required to comply with this subparagraph.)

(iii) The analysis must be repeated as necessary to ensure that it is accurate and up to date. At a minimum, the analysis must be repeated:

(I) When the owner or operator is notified, or has reason to believe, that the process or operation generating the hazardous wastes or non-hazardous wastes, if applicable, under part (7)(d)4 of this rule has changed; and

(II) For off-site facilities, when the results of the inspection required in subpart 1(iv) of this subparagraph indicate that the hazardous waste received at the facility does not match the waste designated on the accompanying manifest or shipping paper.

(iv) The owner or operator of an off-site facility must inspect and, if necessary, analyze each hazardous waste movement received at the facility to determine whether it matches the identity of the waste specified on the accompanying manifest or shipping paper.

2. The owner or operator must develop and follow a written waste analysis plan which describes the procedures which he will carry out to comply with part 1 of this subparagraph. He must keep this plan at the facility. At a minimum, the plan must specify:

(i) The parameters for which each hazardous waste, or non-hazardous waste if applicable under part (7)(d)4 of this rule, will be analyzed and the rationale for the selection of these parameters (i.e., how analysis for these parameters will provide sufficient information on the waste's properties to comply with subpart 1(iv) of this subparagraph);

(ii) The test methods which will be used to test for these parameters;

(iii) The sampling method which will be used to obtain a representative sample of the waste to be analyzed. A representative sample may be obtained using either:

(I) One of the sampling methods described in Appendix I of Rule ~~1200-01-11-.02~~ 0400-12-01-.02; or

(II) An equivalent sampling method.

(Comment: See Rule ~~1200-01-11-.01~~ 0400-12-01-.01(3)(b) for related discussion.)

(iv) The frequency with which the initial analysis of the waste will be reviewed or repeated to ensure that the analysis is accurate and up to date;

(v) For off-site facilities, the waste analyses that hazardous waste generators have agreed to supply; and

(vi) Where applicable, the methods that will be used to meet the additional waste analysis requirements for specific waste management methods as specified in subparagraphs (10)(k), (11)(g), (12)(c), (13)(d), (14)(o), (15)(b), (16)(f), and

(17)(c), parts (27)(e)4, and (28)(n)4, and (29)(e) of this rule and in Rule ~~1200-01-11-.10~~ 0400-12-01-.10(1)(g).

(vii) For surface impoundments exempted from land disposal restrictions under Rule ~~1200-01-11-.10~~ 0400-12-01-.10(1)(d)1, the procedures and schedule for:

(I) The sampling of impoundment contents;

(II) The analysis of test data; and,

(III) The annual removal of residues which are not delisted under Rule ~~1200-01-11-.01~~ 0400-12-01-.01(3)(c) or which exhibit a characteristic of hazardous waste and either:

I. Do not meet applicable treatment standards of Rule ~~1200-01-11-.10~~ 0400-12-01-.10(3); or

II. Where no treatment standards have been established,

A. Such residues are prohibited from land disposal under Rule ~~1200-01-11-.10~~ 0400-12-01-.10(2)(c); or

B. (Reserved)

(viii) For owners and operators seeking an exemption to the air emission standards of paragraph (29) of this rule in accordance with subparagraph (29)(d) of this rule.

(I) If direct measurement is used for the waste determination, the procedures and schedules for waste sampling and analysis, and the results of the analysis of test data to verify the exemption.

(II) If knowledge of the waste is used for the waste determination, any information prepared by the facility owner or operator or by the generator of the hazardous waste, if the waste is received from off-site, that is used as the basis for knowledge of the waste.

3. For off-site facilities, the waste analysis plan required in part 2 of this subparagraph must also specify the procedures which will be used to inspect and, if necessary, analyze each movement of hazardous waste received at the facility to ensure that it matches the identity of the waste designated on the accompanying manifest or shipping paper. At a minimum, the plan must describe:

(i) The procedures which will be used to determine the identity of each movement of waste managed at the facility; and

(ii) The sampling method which will be used to obtain a representative sample of the waste to be identified, if the identification method includes sampling.

(iii) The procedures that the owner or operator of an off-site landfill receiving containerized hazardous waste will use to determine whether a hazardous waste generator or treater has added a biodegradable sorbent to the waste in the container.

4. As part of the waste stream analysis for each hazardous waste handled at the facility, the facility operator shall determine the appropriate waste codes to be used when recording and reporting shipments of such waste received as per subparagraphs (5)(d) and (5)(f) of this rule. If the waste was generated in this state, the facility operator shall obtain the appropriate waste codes from the generator at the time of initiating management of the waste. If the waste was generated in another state, the facility operator shall obtain and

use the EPA Hazardous Waste Codes (from Rule ~~1200-01-11-.02~~ 0400-12-01-.02) which apply to the waste.

(e) Security [40 CFR 265.14]

1. The owner or operator must prevent the unknowing entry, and minimize the possibility for the unauthorized entry, of persons or livestock onto the active portion of his facility, unless:

   (i) Physical contact with the waste, structures, or equipment with the active portion of the facility will not injure unknowing or unauthorized persons or livestock which may enter the active portion of a facility, and

   (ii) Disturbance of the waste or equipment, by the unknowing or unauthorized entry of persons or livestock onto the active portion of a facility, will not cause a violation of the requirements of this part.

2. Unless exempt under subparts 1(i) and ~~1~~(ii) of this subparagraph, a facility must have:

   (i) A 24-hour surveillance system (e.g., television monitoring or surveillance by guards or facility personnel) which continuously monitors and controls entry onto the active portion of the facility; or

   (ii) (I) An artificial or natural barrier (e.g., a fence in good repair or a fence combined with a cliff), which completely surrounds the active portion of the facility; and

   (II) A means to control entry, at all times, through the gates or other entrances to the active portion of the facility (e.g., an attendant, television monitors, locked entrance, or controlled roadway access to the facility).

   (Comment: The requirements of this part ~~2 of this subparagraph~~ are satisfied if the facility or plant within which the active portion is located itself has a surveillance system, or a barrier and a means to control entry, which complies with the requirements of subparts ~~2~~ (i) and ~~2~~ (ii) of this ~~subparagraph~~ part.)

3. Unless exempt under subparts 1(i) and ~~1~~(ii) of this subparagraph, a sign with the legend, "Danger -- Unauthorized Personnel Keep Out," must be posted at each entrance to the active portion of a facility, and at other locations, in sufficient numbers to be seen from any approach to this active portion. The legend must be written in English and in any other language predominant in the area surrounding the facility (e.g., facilities in counties bordering the Canadian province of Quebec must post signs in French; facilities in counties bordering Mexico must post signs in Spanish), and must be legible from a distance of at least 25 feet. Existing signs with a legend other than "Danger -- Unauthorized Personnel Keep Out" may be used if the legend on the sign indicates that only authorized personnel are allowed to enter the active portion, and that entry onto the active portion can be dangerous.

(Comment: See part (7)(h)2 of this rule for discussion of security requirements at disposal facilities during the post-closure care period.)

(f) General Inspection Requirements [40 CFR 265.15]

1. The owner or operator must inspect his facility for malfunctions and deterioration, operator errors, and discharges which may be causing -- or may lead to:

   (i) Release of hazardous waste constituents to the environment or

   (ii) A threat to human health. The owner or operator must conduct these inspections

often enough to identify problems in time to correct them before they harm human health or the environment.

2. (i) The owner or operator must develop and follow a written schedule for inspecting all monitoring equipment, safety and emergency equipment, security devices, and operating and structural equipment (such as dikes and sump pumps) that are important to preventing, detecting, or responding to environmental or human health hazards.

(ii) He must keep this schedule at the facility.

(iii) The schedule must identify the types of problems (e.g., malfunctions or deterioration) which are to be looked for during the inspection (e.g., inoperative sump pump, leaking fitting, eroding dike, etc.).

(iv) The frequency of inspection may vary for the items on the schedule. However, the frequency should be based on the rate of deterioration of the equipment and the probability of an environmental or human health incident if the deterioration, malfunction, or operator error goes undetected between inspections. Areas subject to spills, such as loading and unloading areas, must be inspected daily when in use ~~except for Performance Track member facilities that must inspect at least once each month, upon approval by the Regional Administrator, as described in subpart 2(v) of this subparagraph.~~ At a minimum, the inspection schedule must include the items and frequencies called for in subparagraphs (9)(e), (10)(d), (10)(f), (11)(h), (12)(k), (13)(i), (14)(e), (15)(h), (16)(h), (17)(d), (23)(e), (27)(d), (28)(c), (28)(d), (28)(i),and (29)(e) through (29)(k) of this rule, where applicable.

(v) (Reserved) ~~Performance Track member facilities that choose to reduce inspection frequencies must:~~

~~(I) Submit an application to the Regional Administrator. The application must identify the facility as a member of the National Environmental Performance Track Program and identify the management units for reduced inspections and the proposed frequency of inspections. Inspections must be conducted at least once each month.~~

~~(II) Within 60 days, the Regional Administrator will notify the Performance Track member facility, in writing, if the application is approved, denied, or if an extension to the 60-day deadline is needed. This notice must be placed in the facility's operating record. The Performance Track member facility should consider the application approved if the Regional Administrator does not:~~

~~I. Deny the application; or~~

~~II. Notify the Performance Track member facility of an extension to the 60-day deadline. In these situations, the Performance Track member facility must adhere to the revised inspection schedule outlined in its application and maintain a copy of the application in the facility's operating record.~~

~~(III) Any Performance Track member facility that discontinues its membership or is terminated from the program must immediately notify the Regional Administrator of its change in status. The facility must place in its operating record a dated copy of this notification and revert back to the non-Performance Track inspection frequencies within seven calendar days.~~

3. The owner or operator must remedy any deterioration or malfunction of equipment or structures which the inspection reveals on a schedule which ensures that the problem does not lead to an environmental or human health hazard. Where a hazard is imminent or has already occurred, remedial action must be taken immediately.

4. The owner or operator must record inspections in an inspection log or summary. He must keep these records for at least three years from the date of inspection. At a minimum, these records must include the date and time of the inspection, the name of the inspector, a notation of the observations made, and the date and nature of any repairs or other remedial actions.

(g) Personnel Training [40 CFR 265.16]

1. (i) Facility personnel must successfully complete a program of classroom instruction or on-the-job training that teaches them to perform their duties in a way that ensures the facility's compliance with the requirements of this rule. The owner or operator must ensure that this program includes all the elements described in the document required under subpart 4(iii) of this subparagraph.

(ii) This program must be directed by a person trained in hazardous waste management procedures, and must include instruction which teaches facility personnel hazardous waste management procedures (including contingency plan implementation) relevant to the positions in which they are employed.

(iii) At a minimum, the training program must be designed to ensure that facility personnel are able to respond effectively to emergencies by familiarizing them with emergency procedures, emergency equipment, and emergency systems, including where applicable:

(I) Procedures for using, inspecting, repairing, and replacing facility emergency and monitoring equipment;

(II) Key parameters for automatic waste feed cut-off systems;

(III) Communications or alarm systems;

(IV) Response to fires or explosions;

(V) Response to ground-water contamination incidents; and

(VI) Shutdown of operations.

(iv) For facility employees that receive emergency response training pursuant to Occupational Safety and ~~Heath~~ Health Administration (OSHA) regulations 29 CFR 1910.120(p)(8) and 1910.120(q), the facility is not required to provide separate emergency response training pursuant to this subparagraph, provided the overall facility training meets all the requirements of this subparagraph.

2. Facility personnel must successfully complete the program required in part 1 of this subparagraph within six months after the effective date of these regulations or six months after the date of their employment or assignment to a facility, or to a new position at a facility, whichever is later. Employees hired after the effective date of these regulations must not work in unsupervised positions until they have completed the training requirements of part 1 of this subparagraph.

3. Facility personnel must take part in an annual review of the initial training required in part 1 of this subparagraph.

4. The owner or operator must maintain the following documents and records at the facility:

(i) The job title for each position at the facility related to hazardous waste management, and the name of the employee filling each job;

(ii) A written job description for each position listed under subpart 4 (i) of this ~~subparagraph~~ part. This description may be consistent in its degree of specificity with descriptions for other similar positions in the same company location or bargaining unit, but must include the requisite skill, education, or other qualifications, and duties of facility personnel assigned to each position;

(iii) A written description of the type and amount of both introductory and continuing training that will be given to each person filling a position listed under subpart 4 (i) of this ~~subparagraph~~ part;

(iv) Records that document that the training or job experience required under parts 1, 2, and 3 of this subparagraph has been given to, and completed by, facility personnel.

5. Training records on current personnel must be kept until closure of the facility. Training records on former employees must be kept for at least three years from the date the employee last worked at the facility. Personnel training records may accompany personnel transferred within the same company.

(h) General Requirements for Ignitable, Reactive, or Incompatible Wastes [40 CFR 265.17]

1. The owner or operator must take precautions to prevent accidental ignition or reaction of ignitable or reactive waste. This waste must be separated and protected from sources of ignition or reaction including but not limited to: Open flames, smoking, cutting and welding, hot surfaces, frictional heat, sparks (static, electrical, or mechanical), spontaneous ignition (e.g., from heat-producing chemical reactions), and radiant heat. While ignitable or reactive waste is being handled, the owner or operator must confine smoking and open flame to specially designated locations. "No Smoking" signs must be conspicuously placed wherever there is a hazard from ignitable or reactive waste.

2. Where specifically required by other subparagraphs of this rule, the treatment, storage, or disposal of ignitable or reactive waste, and the mixture or commingling of incompatible wastes, or incompatible wastes and materials, must be conducted so that it does not:

(i) Generate extreme heat or pressure, fire or explosion, or violent reaction;

(ii) Produce uncontrolled toxic mists, fumes, dusts, or gases in sufficient quantities to threaten human health;

(iii) Produce uncontrolled flammable fumes or gases in sufficient quantities to pose a risk of fire or explosions;

(iv) Damage the structural integrity of the device or facility containing the waste; or

(v) Through other like means threaten human health or the environment.

(i) Location Standards [40 CFR 265.18]

The placement of any hazardous waste in a salt dome, salt bed formation, underground mine or cave is prohibited.

(j) Construction Quality Assurance Program [40 CFR 265.19]

1. CQA Program

(i) A construction quality assurance (CQA) program is required for all surface impoundment, waste pile, and landfill units that are required to comply with part (11)(b)1, subparagraph (12)(e), and part (14)(b)1. The program must ensure that the constructed unit meets or exceeds all design criteria and specifications in the permit. The program must be developed and implemented under the direction of a CQA officer who is a registered professional engineer.

(ii) The CQA program must address the following physical components, where applicable:

(I) Foundations;

(II) Dikes;

(III) Low-permeability soil liners;

(IV) Geomembranes (flexible membrane liners);

(V) Leachate collection and removal systems and leak detection systems; and

(VI) Final cover systems.

2. Written CQA Plan

Before construction begins on a unit subject to the CQA program under part 1 of this subparagraph, the owner or operator must develop a written CQA plan. The plan must identify steps that will be used to monitor and document the quality of materials and the condition and manner of their installation. The CQA plan must include:

(i) Identification of applicable units, and a description of how they will be constructed.

(ii) Identification of key personnel in the development and implementation of the CQA plan, and CQA officer qualifications.

(iii) A description of inspection and sampling activities for all unit components identified in subpart 1(ii) of this subparagraph, including observations and tests that will be used before, during, and after construction to ensure that the construction materials and the installed unit components meet the design specifications. The description must cover: Sampling size and locations; frequency of testing; data evaluation procedures; acceptance and rejection criteria for construction materials; plans for implementing corrective measures; and data or other information to be recorded and retained in the operating record under subparagraph (5)(d) of this rule.

3. Contents of Program

(i) The CQA program must include observations, inspections, tests, and measurements sufficient to ensure:

(I) Structural stability and integrity of all components of the unit identified in subpart 1(ii) of this subparagraph;

(II) Proper construction of all components of the liners, leachate collection and removal system, leak detection system, and final cover system, according to permit specifications and good engineering practices, and proper installation of all components (e.g., pipes) according to design specifications;

(III) Conformity of all materials used with design and other material specifications under subparagraphs (11)(b), (12)(b), and (14)(b) of Rule ~~1200-01-11-.06~~ 0400-12-01-.06.

(ii) The CQA program shall include test fills for compacted soil liners, using the same compaction methods as in the full-scale unit, to ensure that the liners are constructed to meet the hydraulic conductivity requirements of subparts (11)(b)3(i), (12)(b)3(i), and (14)(b)3(i) of Rule ~~1200-01-11-.06~~ 0400-12-01-.06 in the field. Compliance with the hydraulic conductivity requirements must be verified by using in-situ testing on the constructed test fill. The test fill requirement is waived where data are sufficient to show that a constructed soil liner meets the hydraulic conductivity requirements of subparts (11)(b)3(i), (12)(b)3(i), and (14)(b)3(i) of Rule ~~1200-01-11-.06~~ 0400-12-01-.06 in the field.

4. Certification

The owner or operator of units subject to this subparagraph ~~(2)(j) of this Rule~~ must submit to the Commissioner by certified mail or hand delivery, at least 30 days prior to receiving waste, a certification signed by the CQA officer that the CQA plan has been successfully carried out and that the unit meets the requirements of part (11)(b)1, subparagraph (12)(e), or part (14)(b)1 of this rule. The owner or operator may receive waste in the unit after 30 days from the Commissioner's receipt of the CQA certification unless the Commissioner determines in writing that the construction is not acceptable, or extends the review period for a maximum of 30 more days, or seeks additional information from the owner or operator during this period. Documentation supporting the CQA officer's certification must be furnished to the Commissioner upon request.

(k) Co-management of Other Materials

The owner or operator may not treat, store, or dispose of other wastes or other materials along with hazardous wastes in hazardous waste management units subject to the requirements of this rule unless:

1. The other waste or other material is labeled, marked, or otherwise clearly identifiable as to what it is;

2. The owner or operator is able to demonstrate that the other waste or other material is not a hazardous waste; and

3. The other waste or other material is managed in a manner that does not adversely impact compliance with the standards of this rule.

(3) Preparedness and Prevention [40 CFR 265 Subpart C]

(a) Applicability [40 CFR 265.30]

The regulations in this subpart apply to owners and operators of all hazardous waste facilities, except as subparagraph (1)(b) of this rule provides otherwise.

(b) Maintenance and Operation of Facility [40 CFR 265.31]

Facilities must be maintained and operated to minimize the possibility of a fire, explosion, or any unplanned sudden or non-sudden release of hazardous waste or hazardous waste constituents to air, soil, or surface water which could threaten human health or the environment.

(c) Required Equipment [40 CFR 265.32]

All facilities must be equipped with the following, unless none of the hazards posed by waste

handled at the facility could require a particular kind of equipment specified below:

1. An internal communications or alarm system capable of providing immediate emergency instruction (voice or signal) to facility personnel;

2. A device, such as a telephone (immediately available at the scene of operations) or a hand-held two-way radio, capable of summoning emergency assistance from local police departments, fire departments, or State or local emergency response teams;

3. Portable fire extinguishers, fire control equipment (including special extinguishing equipment, such as that using foam, inert gas, or dry chemicals), spill control equipment, and decontamination equipment; and

4. Water at adequate volume and pressure to supply water hose streams, or foam producing equipment, or automatic sprinklers, or water spray systems.

(d) Testing and Maintenance of Equipment [40 CFR 265.33]

All facility communications or alarm systems, fire protection equipment, spill control equipment, and decontamination equipment, where required, must be tested and maintained as necessary to assure its proper operation in time of emergency.

(e) Access to Communications or Alarm System [40 CFR 265.34]

1. Whenever hazardous waste is being poured, mixed, spread, or otherwise handled, all personnel involved in the operation must have immediate access to an internal alarm or emergency communication device, either directly or through visual or voice contact with another employee, unless such a device is not required under subparagraph (c) ~~above~~ of this paragraph.

2. If there is ever just one employee on the premises while the facility is operating, he must have immediate access to a device, such as a telephone (immediately available at the scene of operation) or a hand-held two-way radio, capable of summoning external emergency assistance, unless such a device is not required under subparagraph (c) ~~above~~ of this paragraph.

(f) Required Aisle Space [40 CFR 265.35]

The owner or operator must maintain aisle space to allow the unobstructed movement of personnel, fire protection equipment, spill control equipment, and decontamination equipment to any area of facility operation in an emergency, unless aisle space is not needed for any of these purposes.

(g) (RESERVED) [40 CFR 265.36]

(h) Arrangements with Local Authorities [40 CFR 265.37]

1. The owner or operator must attempt to make the following arrangements, as appropriate for the type of waste handled at his facility and the potential need for the services of these organizations:

   (i) Arrangements to familiarize police, fire departments, and emergency response teams with the layout of the facility, properties of hazardous waste handled at the facility and associated hazards, places where facility personnel would normally be working, entrances to roads inside the facility, and possible evacuation routes;

   (ii) Where more than one police and fire department might respond to an emergency, agreements designating primary emergency authority to a specific police and a specific fire department, and agreements with any others to provide

support to the primary emergency authority;

(iii) Agreements with State emergency response teams, emergency response contractors, and equipment suppliers; and

(iv) Arrangements to familiarize local hospitals with the properties of hazardous waste handled at the facility and the types of injuries or illnesses which could result from fires, explosions, or releases at the facility.

2. Where State or local authorities decline to enter into such arrangements, the owner or operator must document the refusal in the operating record.

(4) Contingency Plan and Emergency Procedures [40 CFR 265 Subpart D]

(a) Applicability [40 CFR 265.50]

The regulations in this subpart apply to owners and operators of all hazardous waste facilities, except as subparagraph (1)(b) of this rule provides otherwise.

(b) Purpose and Implementation of Contingency Plan [40 CFR 265.51]

1. Each owner or operator must have a contingency plan for his facility. The contingency plan must be designed to minimize hazards to human health or the environment from fires, explosions, or any unplanned sudden or non-sudden release of hazardous waste or hazardous waste constituents to air, soil, or surface water.

2. The provisions of the plan must be carried out immediately whenever there is a fire, explosion, or release of hazardous waste or hazardous waste constituents which could threaten human health or the environment.

(c) Content of Contingency Plan [40 CFR 265.52]

1. The contingency plan must describe the actions facility personnel must take to comply with subparagraphs (b) and (g) of this paragraph in response to fires, explosions, or any unplanned sudden or non-sudden release of hazardous waste or hazardous waste constituents to air, soil, or surface water at the facility.

2. If the owner or operator has already prepared a Spill Prevention, Control, and Countermeasures (SPCC) Plan in accordance with 40 CFR 112 ~~or 40 CFR 1510~~, or some other emergency or contingency plan, he need only amend that plan to incorporate hazardous waste management provisions that are sufficient to comply with the requirements of this paragraph. The owner or operator may develop one contingency plan which meets all regulatory requirements. The Department recommends that the plan be based on the National Response Team's Integrated Contingency Plan Guidance ("One Plan"). When modifications are made to non-RCRA provisions in an integrated contingency plan, the changes do not trigger the need for a RCRA permit modification.

3. The plan must describe arrangements agreed to by local police departments, fire departments, hospitals, contractors, and State and local emergency response teams to coordinate emergency services, pursuant to subparagraph (3)(h) of this rule.

4. The plan must list names, addresses, and phone numbers (office and home) of all persons qualified to act as emergency coordinator (see subparagraph (f) of this paragraph), and this list must be kept up to date. Where more than one person is listed, one must be named as primary emergency coordinator and others must be listed in the order in which they will assume responsibility as alternates.

5. The plan must include a list of all emergency equipment at the facility (such as fire extinguishing systems, spill control equipment, communications and alarm systems

(internal and external), and decontamination equipment), where this equipment is required. This list must be kept up to date. In addition, the plan must include the location and a physical description of each item on the list, and a brief outline of its capabilities.

6. The plan must include an evacuation plan for facility personnel where there is a possibility that evacuation could be necessary. This plan must describe signal(s) to be used to begin evacuation, evacuation routes, and alternate evacuation routes (in cases where the primary routes could be blocked by releases of hazardous waste or fires).

(d) Copies of Contingency Plan [40 CFR 265.53]

A copy of the contingency plan and all revisions to the plan must be:

1. Maintained at the facility; and

2. Submitted to all local police departments, fire departments, hospitals, and State and local emergency response teams that may be called upon to provide emergency services.

(e) Amendment of Contingency Plan [40 CFR 265.54]

The contingency plan must be reviewed, and immediately amended, if necessary, whenever:

1. Applicable regulations are revised;

2. The plan fails in an emergency;

3. The facility changes -- in its design, construction, operation, maintenance, or other circumstances -- in a way that materially increases the potential for fires, explosions, or releases of hazardous waste or hazardous waste constituents, or changes the response necessary in an emergency;

4. The list of emergency coordinators changes; or

5. The list of emergency equipment changes.

(f) Emergency Coordinator [40 CFR 265.55]

At all times, there must be at least one employee either on the facility premises or on call (i.e., available to respond to an emergency by reaching the facility within a short period of time) with the responsibility for coordinating all emergency response measures. This emergency coordinator must be thoroughly familiar with all aspects of the facility's contingency plan, all operations and activities at the facility, the location and characteristics of waste handled, the location of all records within the facility, and the facility layout. In addition, this person must have the authority to commit the resources needed to carry out the contingency plan.

(Comment: The emergency coordinator's responsibilities are more fully spelled out in subparagraph (g) ~~below~~ of this paragraph. Applicable responsibilities for the emergency coordinator vary, depending on factors such as type and variety of waste(s) handled by the facility, and type and complexity of the facility.)

(g) Emergency Procedures [40 CFR 265.56]

1. Whenever there is an imminent or actual emergency situation, the emergency coordinator (or his designee when the emergency coordinator is on call) must immediately:

   (i) Activate internal facility alarms or communication systems, where applicable, to notify all facility personnel; and

(ii) Notify appropriate State or local agencies with designated response roles if their help is needed.

2. Whenever there is a release, fire, or explosion, the emergency coordinator must immediately identify the character, exact source, amount, and areal extent of any released materials. He may do this by observation or review of facility records or manifests and, if necessary, by chemical analysis.

3. Concurrently, the emergency coordinator must assess possible hazards to human health or the environment that may result from the release, fire, or explosion. This assessment must consider both direct and indirect effects of the release, fire, or explosion (e.g., the effects of any toxic, irritating, or asphyxiating gases that are generated, or the effects of any hazardous surface water run-offs from water or chemical agents used to control fire and heat-induced explosions).

4. If the emergency coordinator determines that the facility has had a release, fire, or explosion which could threaten human health, or the environment, outside the facility, he must report his findings as follows:

(i) If his assessment indicates that evacuation of local areas may be advisable, he must immediately notify appropriate local authorities. He must be available to help appropriate officials decide whether local areas should be evacuated; and

(ii) He must immediately notify either the Tennessee Emergency Management Agency (using their 24-hour toll-free number 800/262-3300) and/or the National Response Center (using their 24-hour toll free number 800/424-8802). The report must include:

(I) Name and telephone number of reporter;

(II) Name and address of facility;

(III) Time and type of incident (e.g., release, fire);

(IV) Name and quantity of material(s) involved, to the extent known;

(V) The extent of injuries, if any; and

(VI) The possible hazards to human health, or the environment, outside the facility.

5. During an emergency, the emergency coordinator must take all reasonable measures necessary to ensure that fires, explosions, and releases do not occur, recur, or spread to other hazardous waste at the facility. These measures must include, where applicable, stopping processes and operations, collecting and containing released waste, and removing or isolating containers.

6. If the facility stops operations in response to a fire, explosion or release, the emergency coordinator must monitor for leaks, pressure buildup, gas generation, or ruptures in valves, pipes, or other equipment, wherever this is appropriate.

7. Immediately after an emergency, the emergency coordinator must provide for treating, storing, or disposing of recovered waste, contaminated soil or surface water, or any other material that results from a release, fire, or explosion at the facility.

(Comment: Unless the owner or operator can demonstrate, in accordance with Rule ~~1200-01-11-.02~~ 0400-12-01-.02(1)(c)3 or 4, that the recovered material is not a hazardous waste, the owner or operator becomes a generator of hazardous waste and must manage it in accordance with all applicable requirements of Rule ~~1200-01-11-.03~~

0400-12-01-.03, .04, and ~~.05~~ this rule.)

8. The emergency coordinator must ensure that, in the affected area(s) of the facility:

   (i) No waste that may be incompatible with the released material is treated, stored, or disposed of until cleanup procedures are completed; and

   (ii) All emergency equipment listed in the contingency plan is cleaned and fit for its intended use before operations are resumed.

9. The owner or operator must note in the operating record the time, date, and details of any incident that requires implementing the contingency plan. Within 15 days after the incident, he must submit a written report on the incident to the Commissioner. The report must include:

   (i) Name, address, and telephone number of the owner or operator;

   (ii) Name, address, and telephone number of the facility;

   (iii) Date, time, and type of incident (e.g., fire, explosion);

   (iv) Name and quantity of material(s) involved;

   (v) The extent of injuries, if any;

   (vi) An assessment of actual or potential hazards to human health or the environment, where this is applicable; and

   (vii) Estimated quantity and disposition of recovered material that resulted from the incident.

(5) Manifest System, Recordkeeping, and Reporting [40 CFR 265 Subpart E except 265.75]

(a) Applicability [40 CFR 265.70]

1. The regulations in this paragraph apply to owners and operators of both on-site and off-site facilities, except as subparagraph (1)(a) of this rule provides otherwise. Subparagraphs ~~(5)~~ (b), ~~(5)~~ (c), and ~~(5)~~ (g) of this paragraph do not apply to owners and operators of on-site facilities that do not receive any hazardous waste from off-site sources, nor to owners and operators of off-site facilities with respect to waste military munitions exempted from manifest requirements under part (13)(d)1 of Rule 0400-12-01-.09.

2. The revised Manifest form and procedures in subparagraphs (2)(a) of Rule ~~1200-01-11-.01~~ 0400-12-01-.01, (1)(g) of Rule ~~1200-01-11-.02~~ 0400-12-01-.02, and subparagraphs ~~(5)~~ (a), ~~(5)~~ (b), ~~(5)~~ (c) and ~~(5)~~ (g) of this ~~Rule~~ paragraph shall become effective September 5, 2006.

(b) Use of Manifest System [40 CFR 265.71]

1. (i) If a facility receives hazardous waste accompanied by a manifest, the owner, operator or his/her agent must sign and date the manifest as indicated in subpart (ii) of this part to certify that the hazardous waste covered by the manifest was received, that the hazardous waste was received except as noted in the discrepancy space of the manifest, or that the hazardous waste was rejected as noted in the manifest discrepancy space.

   (ii) If a facility receives a hazardous waste shipment accompanied by a manifest, the owner, operator or his/her agent must:

(I) Sign and date, by hand, each copy of the manifest;

(II) Note any discrepancies (as defined in part ~~(5)~~ (c)1 of ~~Rule 0400-12-01-.05~~ this paragraph) on each copy of the manifest;

(Comment: The Department does not intend that the owner or operator of a facility whose procedures under part (2)(d)3 of this rule include waste analysis must perform that analysis before signing the manifest and giving it to the transporter. Part (c)2 of this paragraph, however, requires reporting an unreconciled discrepancy discovered during later analysis.)

(III) Immediately give the transporter at least one copy of the manifest;

(IV) Within 30 days of delivery, send a copy of the manifest to the generator; and

(V) Retain at the facility a copy of each manifest for at least three years from the date of delivery.

(iii) If a facility receives hazardous waste imported from a foreign source, the receiving facility must mail a copy of the manifest and documentation confirming EPA's consent to the import of hazardous waste to the following address within thirty (30) days of delivery: Office of Enforcement and Compliance Assurance, Office of Federal Activities, International Compliance Assurance Division, OFA/OECA (2254A), U.S. Environmental Protection Agency, Ariel Rios Building, 1200 Pennsylvania Avenue, NW., Washington, DC 20460.

2. If a facility receives, from a rail or water (bulk shipment) transporter, hazardous waste which is accompanied by a shipping paper containing all the information required on the manifest (excluding the Installation Identification Numbers, generator's certification, and signatures), the owner or operator, or his agent, must:

(i) Sign and date each copy of the manifest or shipping paper (if the manifest has not been received) to certify that the hazardous waste covered by the manifest or shipping paper was received;

(ii) Note any significant discrepancies (as defined in part (c)1 of this paragraph) in the manifest or shipping paper (if the manifest has not been received) on each copy of the manifest or shipping paper;

(Comment: The Department does not intend that the owner or operator of a facility whose procedures under part (2)(d)3 of this rule include waste analysis must perform that analysis before signing the shipping paper and giving it to the transporter. Part (c)2 of this paragraph, however, requires reporting an unreconciled discrepancy discovered during later analysis.)

(iii) Immediately give the rail or water (bulk shipment) transporter at least one copy of the manifest or shipping paper (if the manifest has not been received);

(iv) Within 30 days after the delivery, send a copy of the signed and dated manifest or a signed and dated copy of the shipping paper (if the manifest has not been received within 30 days after delivery) to the generator; and

(Comment: Rule ~~1200-01-11-.02~~ 0400-12-01-.02(3)(d)3 requires the generator to send three copies of the manifest to the facility when hazardous waste is sent by rail or water (bulk shipment).)

(v) Retain at the facility a copy of the manifest and shipping paper (if signed in lieu of

the manifest at the time of delivery) for at least three years from the date of delivery.

3. Whenever a shipment of hazardous waste is initiated from a facility, the owner or operator of that facility must comply with the requirements of Rule ~~1200-01-11-.03~~ 0400-12-01-.03.

(Comment: The provisions of Rule ~~1200-01-11-.03~~ 0400-12-01-.03(4)(e) are applicable to the on-site accumulation of hazardous wastes by generators. Therefore, the provisions of Rule ~~1200-01-11-.03~~ 0400-12-01-.03(4)(e) only apply to owners or operators who are shipping hazardous waste which they generated at that facility.)

4. ~~(Reserved) [40 CFR 265.71(d)]~~ Within three (3) working days of the receipt of a shipment subject to 40 CFR Part 262, Subpart H, the owner or operator of a facility must provide a copy of the movement document bearing all required signatures to the exporter, to the Office of Enforcement and Compliance Assurance, Office of Federal Activities, International Compliance Assurance Division (2254A), Environmental Protection Agency, 1200 Pennsylvania Avenue, NW., Washington, DC 20460, and to competent authorities of all other countries concerned. The original copy of the movement document must be maintained at the facility for at least three (3) years from the date of signature.

5. A facility must determine whether the consignment state for a shipment regulates any additional wastes (beyond those regulated federally) as hazardous wastes under its state hazardous waste program. Facilities must also determine whether the consignment state or generator state requires the facility to submit any copies of the manifest to these states.

(c) Manifest Discrepancies [40 CFR 265.72]

1. Manifest discrepancies are:

(i) Significant differences (as defined by part 2 of this subparagraph) between the quantity or type of hazardous waste designated on the manifest or shipping paper, and the quantity and type of hazardous waste a facility actually receives;

(ii) Rejected wastes, which may be a full or partial shipment of hazardous waste that the TSDF cannot accept; or

(iii) Container residues, which are residues that exceed the quantity limits for "empty" containers set forth in Rule ~~1200-01-11-.02~~ 0400-12-01-.02(1)(g)(2).

2. Significant differences in quantity are: For bulk waste, variations greater than 10 percent in weight; for batch waste, any variation in piece count, such as a discrepancy of one drum in a truckload. Significant differences in type are obvious differences which can be discovered by inspection or waste analysis, such as waste solvent substituted for waste acid, or toxic constituents not reported on the manifest or shipping paper.

3. Upon discovering a significant difference in quantity or type, the owner or operator must attempt to reconcile the discrepancy with the waste generator or transporter (e.g., with telephone conversations). If the discrepancy is not resolved within 15 days after receiving the waste, the owner or operator must immediately submit to the Commissioner a letter describing the discrepancy and attempts to reconcile it, and a copy of the manifest or shipping paper at issue.

4. (i) Upon rejecting waste or identifying a container residue that exceeds the quantity limits for "empty" containers set forth in Rule ~~1200-01-11-.02~~ 0400-12-01-.02(1)(g)2, the facility must consult with the generator prior to forwarding the waste to another facility that can manage the waste. If it is impossible to locate an alternative facility that can receive the waste, the facility may return the

rejected waste or residue to the generator. The facility must send the waste to the alternative facility or to the generator within 60 days of the rejection or the container residue identification.

(ii) While the facility is making arrangements for forwarding rejected wastes or residues to another facility under this subparagraph, it must ensure that either the delivering transporter retains custody of the waste, or the facility must provide for secure, temporary custody of the waste, pending delivery of the waste to the first transporter designated on the manifest prepared under part 5 or 6 of this subparagraph.

5. Except as provided in subpart (vii) of this part, for full or partial load rejections and residues that are to be sent off-site to an alternate facility, the facility is required to prepare a new manifest in accordance with Rule ~~1200-01-11-.03~~ 0400-12-01-.03(3)(a) and the following instructions:

(i) Write the generator's Installation Identification Number in Item 1 of the new manifest. Write the generator's name and mailing address in Item 5 of the new manifest. If the mailing address is different from the generator's site address, then write the generator's site address in the designated space in Item 5.

(ii) Write the name of the alternate designated facility and the facility's Installation Identification Number in the designated facility block (Item 8) of the new manifest.

(iii) Copy the Manifest Tracking Number found in Item 4 of the old manifest to the Special Handling and Additional Information Block of the new manifest, and indicate that the shipment is a residue or rejected waste from the previous shipment.

(iv) Copy the Manifest Tracking Number found in Item 4 of the new manifest to the manifest reference number line in the Discrepancy Block of the old manifest (Item 18a).

(v) Write the DOT description for the rejected load or the residue in Item 9 (U.S. DOT Description) of the new manifest and write the container types, quantity, and volume(s) of waste.

(vi) Sign the Generator's/Offeror's Certification to certify, as the offeror of the shipment, that the waste has been properly packaged, marked and labeled and is in proper condition for transportation, and mail a signed copy of the manifest to the generator identified in Item 5 of the new manifest.

(vii) For full load rejections that are made while the transporter remains present at the facility, the facility may forward the rejected shipment to the alternate facility by completing Item 18b of the original manifest and supplying the information on the next destination facility in the Alternate Facility space. The facility must retain a copy of this manifest for its records, and then give the remaining copies of the manifest to the transporter to accompany the shipment. If the original manifest is not used, then the facility must use a new manifest and comply with subparts (i), (ii), (iii), (iv), (v), and (vi) of this part.

6. Except as provided in subpart (vii) of this part, for rejected wastes and residues that must be sent back to the generator, the facility is required to prepare a new manifest in accordance with Rule ~~1200-01-11-.03~~ 0400-12-01-.03(3)(a) and the following instructions:

(i) Write the facility's Installation Identification Number ~~number~~ in Item 1 of the new manifest. Write the ~~generator's~~ "facility's name and mailing address in Item 5 of the new manifest. If the mailing address is different from the ~~generator's~~ facility's

site address, then write the ~~generator's~~ facility's site address in the designated space for Item 5 of the new manifest.

(ii) Write the name of the initial generator and the generator's Installation Identification Number ~~number~~ in the designated facility block (Item 8) of the new manifest.

(iii) Copy the manifest tracking number found in Item 4 of the old manifest to the Special Handling and Additional Information Block of the new manifest, and indicate that the shipment is a residue or rejected waste from the previous shipment.

(iv) Copy the manifest tracking number found in Item 4 of the new manifest to the manifest reference number line in the Discrepancy Block of the old manifest (Item 18a).

(v) Write the DOT description for the rejected load or the residue in Item 9 (U.S. DOT Description) of the new manifest and write the container types, quantity, and volume(s) of waste.

(vi) Sign the Generator's/Offeror's Certification to certify, as offeror of the shipment, that the waste has been properly packaged, marked and labeled and is in proper condition for transportation.

(vii) For full load rejections that are made while the transporter remains at the facility, the facility may return the shipment to the generator with the original manifest by completing Item 18a and 18b of the manifest and supplying the generator's information in the Alternate Facility space. The facility must retain a copy for its records and then give the remaining copies of the manifest to the transporter to accompany the shipment. If the original manifest is not used, then the facility must use a new manifest and comply with subparts (i), (ii), (iii), (iv), (v), ~~and~~ (vi) and (viii) of this part.

(viii) For full or partial load rejections and container residues contained in non-empty containers that are returned to the generator, the facility must also comply with the exception reporting requirements in Rule 0400-12-01-.03(5)(c)1.

7. If a facility rejects a waste or identifies a container residue that exceeds the quantity limits for "empty" containers set forth in part (1)(g)2 of Rule ~~1200-01-11-.02~~ 0400-12-01-.02 after it has signed, dated, and returned a copy of the manifest to the delivering transporter or to the generator, the facility must amend its copy of the manifest to indicate the rejected wastes or residues in the discrepancy space of the amended manifest. The facility must also copy the manifest tracking number from Item 4 of the new manifest to the discrepancy space of the amended manifest, and must re-sign and date the manifest to certify to the information as amended. The facility must retain the amended manifest for at least three years from the date of amendment, and must within 30 days, send a copy of the amended manifest to the transporter and generator that received copies prior to their being amended.

(d) Operating Record [40 CFR 265.73]

1. The owner or operator must keep a written operating record at his facility.

2. The following information must be recorded, as it becomes available, and maintained in the operating record for five (5) years unless noted below:

(i) A description and the quantity of each hazardous waste received, and the method(s) and date(s) of its treatment, storage, or disposal at the facility as required by Appendix I of paragraph (53) of this rule. This information must be

maintained in the operating record until closure of the facility;

(ii) The location of each hazardous waste within the facility and the quantity at each location. For disposal facilities, the location and quantity of each hazardous waste must be recorded on a map or diagram of each cell or disposal area. For all facilities, this information must include cross-references to manifest document numbers if the waste was accompanied by a manifest. This information must be maintained in the operating record until closure of the facility;

(Comment: See subparagraphs (7)(j), (13)(j), and (14)(j) of this rule for related requirements.)

(iii) Records and results of waste analysis, waste determinations, and trial tests performed as specified in subparagraphs (2)(d), (10)(k), (11)(g), (12)(c), (13)(d), (14)(o), (15)(b), (16)(f), (17)(c), (27)(e), (28)(n), and (29)(e) of this rule and in subparagraphs (1)(d) and (g) of ~~Rules (1)(d) and .10(1)(g)~~ Rule ~~1200-01-11-.10~~ 0400-12-01-.10;

(iv) Summary reports and details of all incidents that require implementing the contingency plan as specified in part (4)(g)~~10~~9 of this rule;

(v) Records and results of inspections as required by part (2)(f)4 of this rule (except these data need be kept only five (5) years);

(vi) Monitoring, testing, or analytical data and corrective action where required by paragraph (6) of this rule and by subparagraphs (2)(j), (6)(e), (10)(b), (10)(d), (10)(e), (11)(e), (11)(h), (12)(f), (12)(k), (13)(g), and (13)(i), subpart (13)(k)4(i), subparagraphs (14)(c), (14)(e), (15)(h), and (16)(h), parts (27)(e)3 through (27)(e)6, subparagraph (27)(f), parts (28)(n)4 through (28)(n)9, subparagraphs (28)(o), and (29)(d) through (29)(k) of this rule. Maintain in the operating record for five (5) years, except for records and results pertaining to ground-water monitoring and cleanup, and response action plans for surface impoundments, waste piles, and landfills, which must be maintained in the operating record until closure of the facility;

(Comment: As required by subparagraph (6)(e) of this rule, monitoring data at disposal facilities must be kept throughout the post-closure period.)

(vii) All closure cost estimates under subparagraph (8)(c) of this rule and, for disposal facilities, all post-closure cost estimates under subparagraph (8)(e) of this rule must be maintained in the operating record until closure of the facility;

(viii) Records of the quantities (and date of placement) for each shipment of hazardous waste placed in land disposal units under an extension to the effective date of any land disposal restriction granted pursuant to Rule ~~1200-01-11-.10~~ 0400-12-01-.10(1)(e), monitoring data required pursuant to a petition under Rule ~~1200-01-11-.10~~ 0400-12-01-.10(1)(f), or a certification under Rule ~~1200-01-11-.10~~ 0400-12-01-.10(1)(h), and the applicable notice required by a generator under Rule ~~1200-01-11-.10~~ 0400-12-01-.10(1)(g)1. All this information must be maintained in the operating record until closure of the facility;

(ix) For an off-site treatment facility, a copy of the notice, and the certification and demonstration if applicable, required by the generator or the owner or operator under Rule ~~1200-01-11-.10~~ 0400-12-01-.10(1)(g) or (h);

(x) For an on-site treatment facility, the information contained in the notice (except the manifest number), and the certification and demonstration if applicable, required by the generator or the owner or operator under Rule ~~1200-01-11-.10~~ 0400-12-01-.10(1)(g) or (h);

(xi) For an off-site land disposal facility, a copy of the notice, and the certification and demonstration if applicable, required by the generator or the owner or operator of a treatment facility under Rule ~~1200-01-11-.10~~ 0400-12-01-.10(1)(g) or (h);

(xii) For an on-site land disposal facility, the information contained in the notice (except the manifest number), and the certification and demonstration if applicable, required by the generator or the owner or operator of a treatment facility under Rule ~~1200-01-11-.10~~ 0400-12-01-.10(1)(g) or (h);

(xiii) For an off-site storage facility, a copy of the notice, and the certification and demonstration if applicable, required by the generator or the owner or operator under Rule ~~1200-01-11-.10~~ 0400-12-01-.10(1)(g) or (h); and

(xiv) For an on-site storage facility, the information contained in the notice (except the manifest number), and the certification and demonstration if applicable, required by the generator or the owner or operator of a treatment facility under Rule ~~1200-01-11-.10~~ 0400-12-01-.10(1)(g) or (h).

(xv) Monitoring, testing, or analytical data, and corrective action where required by subparagraph (6)(a), subpart (6)(d)4(ii), and subpart (6)(d)4(v) of this rule and the certification as required by part (10)(g)6 of this rule must be maintained in the operating record until closure of the facility.

(Note: The authority for implementing 40 CFR 268.5 Procedures for Case-by-Case Extensions to an Effective Date and the authority for implementing 40 CFR 268.6 Petitions to Allow Land Disposal of a Prohibited Waste remains with the U.S. Environmental Protection Agency.)

(e) Availability, Retention, and Disposition of Records [40 CFR 265.74]

1. All records, including plans, required under this rule must be furnished upon request, and made available at all reasonable times for inspection, by any officer, employee, or representative of the Department who is duly designated by the Commissioner.

2. The retention period for all records required under this rule is extended automatically during the course of any unresolved enforcement action regarding the facility or as requested by the Commissioner.

3. A copy of records of waste disposal locations and quantities under subpart (d)2(ii) of this paragraph must be submitted to the Commissioner and local land authority upon closure of the facility (see subparagraph (7)(j) of this rule).

(f) Annual Report

The owner or operator must prepare and submit a single copy of an annual report to the Commissioner by March 1 of each year. Such reports must be submitted on forms provided by the Department, and the report forms must be completed as specified in the accompanying instructions. The annual report must cover facility activities during the previous calendar year and must include, but shall not necessarily be limited to, the following information:

1. The Installation Identification Number, name, address, and telephone number of the facility;

2. The calendar year covered by the report;

3. For each hazardous waste (Note: each waste, but not each shipment of such waste) received by the facility during the reporting year, the following:

(i) The installation identification number of the generator of the waste; or, for imported shipments, the name and address of the foreign generator;

(ii) A description of the waste;

(iii) The waste code determined for use pursuant to subparagraph (2)(d) of this rule;

(iv) The total quantity of such waste received; and

(v) The methods by which the waste was treated, stored, or disposed of;

4. Monitoring data under items (6)(e)1(ii)(II) and (III) and subpart (6)(e)2(ii) of this rule, where required;

5. The most recent closure cost estimate under subparagraph (8)(b) of this rule and, for disposal facilities, the most recent post-closure cost estimate under subparagraph (8)(c) of this rule;

6. The certification signed by the owner or operator of the facility or his authorized representative;

7. Reserved

8. Reserved

(g) Unmanifested Waste Report [40 CFR 265.76]

1. If a facility accepts for treatment, storage, or disposal any hazardous waste from an off-site source without an accompanying manifest, or without an accompanying shipping paper as described by part (3)(a)5 of Rule ~~1200-01-11-.04~~ 0400-12-01-.04, and if the waste is not excluded from the manifest requirement, then the owner or operator must prepare and submit a letter to the Commissioner within fifteen days after receiving the waste. The unmanifested waste report must contain the following information:

(i) The Installation Identification Number, name, and address of the facility;

(ii) The date the facility received the waste;

(iii) The Installation Identification Number, name, and address of the generator and the transporter, if available;

(iv) A description and the quantity of each unmanifested hazardous waste the facility received;

(v) The method of treatment, storage, or disposal for each hazardous waste;

(vi) The certification signed by the owner or operator of the facility or his authorized representative; and

(viii) A brief explanation of why the waste was unmanifested, if known.

(Comment: Small quantities of hazardous waste are excluded from regulation under this rule and do not require a manifest. Where a facility receives unmanifested hazardous wastes, the Department suggests that the owner or operator obtain from each generator a certification that the waste qualifies for exclusion. Otherwise, the Department suggests that the owner or operator file an unmanifested waste report for the hazardous waste movement.)

2. (RESERVED) [40 CFR 265.76(b)]

(h) Additional Reports [40 CFR 265.77]

In addition to submitting the annual report and unmanifested waste reports described in subparagraph (f) and (g) of this paragraph, the owner or operator must also report to the Commissioner:

1. Releases, fires, and explosions as specified in part (4)(g)9 of this rule;

2. Ground-water contamination and monitoring data as specified in subparagraphs (6)(d) and (6)(e) of this rule; and

3. Facility closure as specified in subparagraph (7)(f) of this rule.

4. As otherwise required by paragraphs (27), (28) and (29) of this rule.

(6) Ground-Water Monitoring [40 CFR 265 Subpart F]

(a) Applicability [40 CFR 265.90]

1. Within one year after the effective date of these regulations, the owner or operator of a surface impoundment, landfill, or land treatment facility which is used to manage hazardous waste must implement a ground-water monitoring program capable of determining the facility's impact on the quality of ground water in the uppermost aquifer underlying the facility, except as subparagraph (1)(b) of this rule and part 3 of this subparagraph provide otherwise.

2. Except as parts 3 and 4 of this subparagraph provide otherwise, the owner or operator must install, operate, and maintain a ground-water monitoring system which meets the requirements of subparagraph (b) of this paragraph, and must comply with subparagraphs (c), (d), and (e) of this paragraph. This ground-water monitoring program must be carried out during the active life of the facility, and for disposal facilities, during the post-closure care period as well.

3. All or part of the ground-water monitoring requirements of this paragraph may be waived if the owner or operator can demonstrate that there is a low potential for migration of hazardous waste or hazardous waste constituents from the facility via the uppermost aquifer to water supply wells (domestic, industrial, or agricultural) or to surface water. This demonstration must be in writing, and must be kept at the facility. This demonstration must be certified by a qualified geologist or geotechnical engineer and must establish the following:

(i) The potential for migration of hazardous waste or hazardous waste constituents from the facility to the uppermost aquifer, by an evaluation of:

(I) A water balance of precipitation, evapotranspiration, runoff, and infiltration; and

(II) Unsaturated zone characteristics (i.e., geologic materials, physical properties, and depth to ground water); and

(ii) The potential for hazardous waste or hazardous waste constituents which enter the uppermost aquifer to migrate to a water supply well or surface water, by an evaluation of:

(I) Saturated zone characteristics (i.e., geologic materials, physical properties, and rate of ground-water flow); and

(II) The proximity of the facility to water supply wells or surface water.

4. If an owner or operator assumes (or knows) that ground-water monitoring of indicator parameters in accordance with subparagraph (b) and (c) of this paragraph would show statistically significant increases (or decreases in the case of pH) when evaluated under part (d)2 of this paragraph, he may install, operate, and maintain an alternate ground-water monitoring system (other than the one described in subparagraph (b) and (c) of this paragraph). If the owner or operator decides to use an alternate ground-water monitoring system he must:

   (i) Within one year after the effective date of these regulations, develop a specific plan, certified by a qualified geologist or geotechnical engineer, which satisfies the requirements of subpart (d)4(iii) of this paragraph, for an alternate ground-water monitoring system. This plan is to be placed in the facility's operating record and maintained until closure of the facility;

   (ii) Not later than one year after the effective date of these regulations, initiate the determinations specified in subpart (d)4(iv) of this paragraph;

   (iii) Prepare a report in accordance with subpart (d)4(v) of this paragraph and place it in the facility's operating record and maintain until closure of the facility;

   (iv) Continue to make the determinations specified in subpart (d)4(iv) of this paragraph on a quarterly basis until final closure of the facility; and

   (v) Comply with the recordkeeping and reporting requirements in part (e)2 of this paragraph.

5. The ground-water monitoring requirements of this paragraph may be waived with respect to any surface impoundment that:

   ~~(1)~~(i) Is used to neutralize wastes which are hazardous solely because they exhibit the corrosivity characteristic under Rule ~~1200-01-11-.02~~ 0400-12-01-.02(3)(c) or are listed as hazardous wastes in Rule ~~1200-01-11-.02~~ 0400-12-01-.02(4) only for this reason, and

   ~~(2)~~(ii) Contains no other hazardous wastes, if the owner or operator can demonstrate that there is no potential for migration of hazardous wastes from the impoundment. The demonstration must establish, based upon consideration of the characteristics of the wastes and the impoundment, that the corrosive wastes will be neutralized to the extent that they no longer meet the corrosivity characteristic before they can migrate out of the impoundment. The demonstration must be in writing and must be certified by a qualified professional.

6. The Commissioner may replace all or part of the requirements of this paragraph applying to a regulated unit (as defined in subparagraph (6)(a) of this rule), with alternative requirements developed for groundwater monitoring set out in an approved closure or post-closure plan or in an enforceable document (as defined in Rule ~~1200-01-11-.07~~ 0400-12-01-.07(1)(b)9), where the Commissioner determines that:

   (i) A regulated unit is situated among solid waste management units (or areas of concern), a release has occurred, and both the regulated unit and one or more solid waste management unit(s) (or areas of concern) are likely to have contributed to the release; and

   (ii) It is not necessary to apply the requirements of this paragraph because the alternative requirements will protect human health and the environment. The alliterative standards for the regulated unit must meet the requirements of Rule ~~1200-01-11-.06~~ 0400-12-01-.06(6)(l)1.

(b) Ground-water Monitoring System [40 CFR 265.91]

1. A ground-water monitoring system must be capable of yielding ground-water samples for analysis and must consist of:

(i) Monitoring wells (at least one) installed hydraulically upgradient (i.e., in the direction of increasing static head) from the limit of the waste management area. Their number, locations, and depths must be sufficient to yield ground-water samples that are:

(I) Representative of background ground-water quality in the uppermost aquifer near the facility; and

(II) Not affected by the facility; and

(ii) Monitoring wells (at least three) installed hydraulically downgradient (i.e., in the direction of decreasing static head) at the limit of the waste management area. Their number, locations, and depths must ensure that they immediately detect any statistically significant amounts of hazardous waste or hazardous waste constituents that migrate from the waste management area to the uppermost aquifer.

(iii) The facility owner or operator may demonstrate that an alternate hydraulically downgradient monitoring well location will meet the criteria outlined below. The demonstration must be in writing and kept at the facility. The demonstration must be certified by a qualified ground-water scientist and establish that:

(I) An existing physical obstacle prevents monitoring well installation at the hydraulically downgradient limit of the waste management area; and

(II) The selected alternate downgradient location is as close to the limit of the waste management area as practical; and

(III) The location ensures detection that, given the alternate location, is as early as possible of any statistically significant amounts of hazardous waste or hazardous waste constituents that migrate from the waste management area to the uppermost aquifer.

(IV) Lateral expansion, new, or replacement units are not eligible for an alternate downgradient location under this paragraph.

2. Separate monitoring systems for each waste management component of a facility are not required provided that provisions for sampling upgradient and downgradient water quality will detect any discharge from the waste management area.

(i) In the case of a facility consisting of only one surface impoundment, landfill, or land treatment area, the waste management area is described by the waste boundary (perimeter).

(ii) In the case of a facility consisting of more than one surface impoundment, landfill, or land treatment area, the waste management area is described by an imaginary boundary line which circumscribes the several waste management components.

3. All monitoring wells must be cased in a manner that maintains the integrity of the monitoring well bore hole. This casing must be screened or perforated, and packed with gravel or sand where necessary, to enable sample collection at depths where appropriate aquifer flow zones exist. The annular space (i.e., the space between the bore hole and

well casing) above the sampling depth must be sealed with a suitable material (e.g., cement grout or bentonite slurry) to prevent contamination of samples and the ground water.

4. The location and construction of all monitoring wells must be approved by a Department staff geologist.

(c) Sampling and Analysis [40 CFR 265.92]

1. The owner or operator must obtain and analyze samples from the installed ground-water monitoring system. The owner or operator must develop and follow a ground-water sampling and analysis plan. He must keep this plan at the facility. The plan must include procedures and techniques for:

(i) Sample collection;

(ii) Sample preservation and shipment;

(iii) Analytical procedures; and

(iv) Chain of custody control.

(Comment: See "Procedures Manual For Ground-water Monitoring At Solid Waste Disposal Facilities," EPA-530/SW-611, August 1977 and "Methods for Chemical Analysis of Water and Wastes," EPA-600/4-79-020, March 1979 for discussions of sampling and analysis procedures.)

2. The owner or operator must determine the concentration or value of the following parameters in ground-water samples in accordance with part 3 and 4 of this subparagraph:

(i) Parameters characterizing the suitability of the ground water as a drinking water supply, as specified in appendix III.

(ii) Parameters establishing ground-water quality:

(I) Chloride

(II) Iron

(III) Manganese

(IV) Phenols

(V) Sodium

(VI) Sulfate

(Comment: These parameters are to be used as a basis for comparison in the event a ground-water quality assessment is required under part (d)4 of this paragraph.)

(iii) Parameters used as indicators of ground-water contamination:

(I) pH

(II) Specific Conductance

(III) Total Organic Carbon

(IV) Total Organic Halogen

3. (i) For all monitoring wells, the owner or operator must establish initial background concentrations or values of all parameters specified in part 2 of this subparagraph. He must do this quarterly for one year.

(ii) For each of the indicator parameters specified in subpart 2(iii) of this subparagraph, at least four replicate measurements must be obtained for each sample and the initial background arithmetic mean and variance must be determined by pooling the replicate measurements for the respective parameter concentrations or values in samples obtained from upgradient wells during the first year.

4. After the first year, all monitoring wells must be sampled and the samples analyzed with the following frequencies:

(i) Samples collected to establish ground-water quality must be obtained and analyzed for the parameters specified in subpart (2)(ii) of this subparagraph at least annually.

(ii) Samples collected to indicate ground-water contamination must be obtained and analyzed for the parameters specified in subpart (2)(iii) of this subparagraph at least semi-annually.

5. Elevation of the ground-water surface at each monitoring well must be determined each time a sample is obtained.

(d) Preparation, Evaluation, and Response [40 CFR 265.93]

1. Within one year after the effective date of these regulations, the owner or operator must prepare an outline of a ground-water quality assessment program. The outline must describe a more comprehensive ground-water monitoring program (than that described in subparagraphs (b) and (c) of this paragraph) capable of determining:

(i) Whether hazardous waste or hazardous waste constituents have entered the ground water;

(ii) The rate and extent of migration of hazardous waste or hazardous waste constituents in the ground water; and

(iii) The concentrations of hazardous waste or hazardous waste constituents in the ground water.

2. For each indicator parameter specified in subpart (c)2(iii) of this paragraph, the owner or operator must calculate the arithmetic mean and variance, based on at least four replicate measurements on each sample, for each well monitored in accordance with subpart (c)4(ii) of this paragraph, and compare these results with its initial background arithmetic mean. The comparison must consider individually each of the wells in the monitoring system, and must use the Student's t-test at the 0.01 level of significance (see appendix IV) to determine statistically significant increases (and decreases, in the case of pH) over initial background.

3. (i) If the comparisons for the upgradient wells made under part 2 of this subparagraph show a significant increase (or pH decrease), the owner or operator must submit this information in accordance with item (e)1(ii)(II) of this paragraph.

(ii) If the comparisons for downgradient wells made under part 2 of this

subparagraph show a significant increase (or pH decrease), the owner or operator must then immediately obtain additional ground-water samples from those downgradient wells where a significant difference was detected, split the samples in two, and obtain analyses of all additional samples to determine whether the significant difference was a result of laboratory error.

4. (i) If the analyses performed under subpart 3(ii) of this subparagraph confirm the significant increase (or pH decrease), the owner or operator must provide written notice to the Commissioner -- within seven days of the date of such confirmation -- that the facility may be affecting ground-water quality.

(ii) Within 15 days after the notification under subpart 4 (i) of this ~~subparagraph~~ part, the owner or operator must develop a specific plan, based on the outline required under part ~~(d)~~ 1 of this subparagraph and certified by a qualified geologist or geotechnical engineer, for a ground-water quality assessment at the facility. This plan must be placed in the facility operating record and maintained until closure of the facility.

(iii) The plan to be submitted under subpart (a)4(i) or subpart ~~(d)~~4 (ii) of this part must specify:

(I) The number, location, and depth of wells;

(II) Sampling and analytical methods for those hazardous wastes or hazardous waste constituents in the facility;

(III) Evaluation procedures, including any use of previously-gathered ground-water quality information; and

(IV) A schedule of implementation.

(iv) The owner or operator must implement the ground-water quality assessment plan which satisfies the requirements of subpart 4 (iii) of this ~~subparagraph~~ part, and, at a minimum, determine:

(I) The rate and extent of migration of the hazardous waste or hazardous waste constituents in the ground water; and

(II) The concentrations of the hazardous waste or hazardous waste constituents in the ground water.

(v) The owner or operator must make his first determination under subpart 4(iv) of this subparagraph as soon as technically feasible, and prepare a report containing an assessment of ground-water quality. This report must be place in the facility operating record and maintained until closure of the facility.

(vi) If the owner or operator determines, based on the results of the first determination under subpart ~~(4)~~ (iv) of this ~~subparagraph~~ part, that no hazardous waste or hazardous waste constituents from the facility have entered the ground water, then he may reinstate the indicator evaluation program described in subparagraph (c) and part (d)2 of this paragraph. If the owner or operator reinstates the indicator evaluation program, he must so notify the Commissioner in the report submitted under subpart 4 (v) of this ~~paragraph~~ part.

(vii) If the owner or operator determines, based on the first determination under subpart 4 (iv) of this ~~paragraph~~ part, that hazardous waste or hazardous waste constituents from the facility have entered the ground water, then he:

(I) Must continue to make the determinations required under subpart 4 (iv)

of this ~~paragraph~~ part on a quarterly basis until final closure of the facility, if the ground-water quality assessment plan was implemented prior to final closure of the facility; or

(II) May cease to make the determinations required under subpart 4 (iv) of this ~~paragraph~~ part, if the ground-water quality assessment plan was implemented during the post-closure care period.

5. Notwithstanding any other provision of this subpart, any ground-water quality assessment to satisfy the requirements of subpart 4(iv) of this subparagraph which is initiated prior to final closure of the facility must be completed and reported in accordance with subpart 4(v) of this subparagraph.

6. Unless the ground water is monitored to satisfy the requirements of subpart 4(iv) of this subparagraph, at least annually the owner or operator must evaluate the data on ground-water surface elevations obtained under part (c)5 of this ~~subparagraph~~ paragraph to determine whether the requirements under part (b)1 of this paragraph for locating the monitoring wells continues to be satisfied. If the evaluation shows that part (b)1 of this paragraph is no longer satisfied, the owner or operator must immediately modify the number, location, or depth of the monitoring wells to bring the ground-water monitoring system into compliance with this requirement.

(e) Recordkeeping and Reporting [40 CFR 265.94]

1. Unless the ground water is monitored to satisfy the requirements of subpart (d)4(iv) of this paragraph, the owner or operator must:

(i) Keep records of the analyses required in parts (c)3 and 4 of this paragraph, the associated ground-water surface elevations required in part (c)5 of this paragraph, and the evaluations required in part (d)4 of this paragraph throughout the active life of the facility, and, for disposal facilities, throughout the post-closure care period as well; and

(ii) Report the following ground-water monitoring information to the Commissioner:

(I) During the first year when initial background concentrations are being established for the facility: concentrations or values of the parameters listed in subpart (c)2(i) of this paragraph for each ground-water monitoring well within 15 days after completing each quarterly analysis. The owner or operator must separately identify for each monitoring well any parameters whose concentration or value has been found to exceed the maximum contaminant levels listed in Appendix III of paragraph (53) of this rule.

(II) Annually: Concentrations or values of the parameters listed in subpart (c)2(iii) of this paragraph for each ground-water monitoring well, along with the required evaluations for these parameters under part (d)2 of this paragraph. The owner or operator must separately identify any significant differences from initial background found in the upgradient wells, in accordance with subpart (d)3(i) of this paragraph. During the active life of the facility, this information must be submitted no later than March 1 following each calendar year.

(III) No later than March 1 following each calendar year: Results of the evaluations of ground-water surface elevations under part (d)6 of this paragraph, and a description of the response to that evaluation, where applicable.

2. If the ground water is monitored to satisfy the requirements of subpart (d)4(iv) of this paragraph, the owner or operator must:

(i) Keep records of the analyses and evaluations specified in the plan, which satisfies the requirements of subpart (d)4(iii) of this paragraph, throughout the active life of the facility, and, for disposal facilities, throughout the post-closure care period as well; and

(ii) Annually, until final closure of the facility, submit to the Commissioner a report containing the results of his or her ground-water quality assessment program which includes, but is not limited to, the calculated (or measured) rate of migration of hazardous waste or hazardous waste constituents in the ground water during the reporting period. This information must be submitted no later than March 1 following each calendar year.

(7) Closure and Post-Closure [40 CFR 265 Subpart G]

(a) Applicability [40 CFR 265.110]

Except as paragraph (1) of this rule provides otherwise:

1. Subparagraphs ~~(7)~~ (b) through ~~(7)~~ (f) of this ~~Rule~~ paragraph (which concern closure) apply to the owners and operators of all hazardous waste management facilities; and

2. Subparagraphs ~~(7)~~ (g) through ~~(7)~~ (k) of this ~~Rule~~ paragraph (which concern post-closure care) apply to the owners and operators of:

(i) All hazardous waste disposal facilities;

(ii) Waste piles and surface impoundments for which the owner or operator intends to remove the wastes at closure to the extent that these ~~sections~~ subparagraphs are made applicable to such facilities in subparagraph (11)(i) or (12)(i) of this rule;

(iii) Tank systems that are required under subparagraph (10)(h) of this rule to meet requirements for landfills; and

(iv) Containment buildings that are required under subparagraph (30)(c) of this rule to meet the requirement for landfills.

3. Subparagraph (l) of this paragraph applies to owners and operators of units that are subject to the requirements of Rule ~~1200-01-11-.07~~ 0400-12-01-.07(1)(b)9 and are regulated under an enforceable document (as defined in Rule ~~1200-01-11-.07~~ 0400-12-01-.07(1)(b)9).

4. The Commissioner may replace all or part of the requirements of this paragraph (and the unit-specific standards in part (b)3 of this paragraph) applying to a regulated unit (as defined in subparagraph (6)(a) of this rule), with alternative requirements for closure set out in an approved closure or post-closure plan, or in an enforceable document (as defined in Rule ~~1200-01-11-.07~~ 0400-12-01-.07(1)(b)9), where the Commissioner determines that:

(i) A regulated unit is situated among solid waste management units (or areas of concern), a release has occurred, and both the regulated unit and one or more solid waste management unit(s) (or areas of concern) are likely to have contributed to the release, and

(ii) It is not necessary to apply the closure requirements of this paragraph (and/or those referenced herein) because the alternative requirements will protect human

health and the environment, and will satisfy the closure performance standard of part (b)1 and 2 of this paragraph.

(b) Closure Performance Standard [40 CFR 265.111]

The owner or operator must close the facility in a manner that:

1. Minimizes the need for further maintenance, and

2. Controls, minimizes or eliminates, to the extent necessary to protect human health and the environment, post-closure escape of hazardous waste, hazardous constituents, leachate, contaminated run-off, or hazardous waste decomposition products to the ground or surface waters or to the atmosphere, and

3. Complies with the closure requirements of this rule including, but not limited to, the requirements of subparagraphs (10)(h), (11)(j), (12)(i), (13)(k), (14)(k), (15)(l), (16)(l), (17)(e), and (30)(c) of this rule.

(c) Closure Plan; Amendment of Plan [40 CFR 265.112]

1. Written Plan

By May 19, 1981, or by six months after the effective date of the rule that first subjects a facility to provisions of this paragraph, the owner or operator of a hazardous waste management facility must have a written closure plan. Until final closure is completed and certified in accordance with subparagraph (f) of this paragraph, a copy of the most current plan must be furnished to the Commissioner upon request, including request by mail. In addition, for facilities without approved plans, it must also be provided during site inspections, on the day of inspection, to any officer, employee, or representative of the Department who is duly designated by the Commissioner.

2. Content of Plan

The plan must identify steps necessary to perform partial and/or final closure of the facility at any point during its active life. The closure plan must include, at least:

(i) A description of how each hazardous waste management unit at the facility will be closed in accordance with subparagraph (b) of this paragraph; and

(ii) A description of how final closure of the facility will be conducted in accordance with subparagraph (b) of this paragraph. The description must identify the maximum extent of the operation which will be unclosed during the active life of the facility; and

(iii) An estimate of the maximum inventory of hazardous wastes ever on-site over the active life of the facility and a detailed description of the methods to be used during partial and final closure, including, but not limited to methods for removing, transporting, treating, storing or disposing of all hazardous waste, identification of and the type(s) of off-site hazardous waste management unit(s) to be used, if applicable; and

(iv) A detailed description of the steps needed to remove or decontaminate all hazardous waste residues and contaminated containment system components, equipment, structures, and soils during partial and final closure including, but not limited to, procedures for cleaning equipment and removing contaminated soils, methods for sampling and testing surrounding soils, and criteria for determining the extent of decontamination necessary to satisfy the closure performance standard; and

(v) A detailed description of other activities necessary during the partial and final closure periods to ensure that all partial closures and final closure satisfy the closure performance standards, including, but not limited to, ground-water monitoring, leachate collection, and run-on and run-off control; and

(vi) A schedule for closure of each hazardous waste management unit and for final closure of the facility. The schedule must include, at a minimum, the total time required to close each hazardous waste management unit and the time required for intervening closure activities which will allow tracking of the progress of partial and final closure. (For example, in the case of a landfill unit, estimates of the time required to treat or dispose of all hazardous waste inventory and of the time required to place a final cover must be included.); and

(vii) An estimate of the expected year of final closure for facilities that use trust funds to demonstrate financial assurance under subparagraph (8)(d) or (8)(f) of this rule and whose remaining operating life is less than twenty years, and for facilities without approved closure plans; and

(viii) Construction drawings showing details of the final cover (if any) necessary to ensure that the applicable closure requirements of subparagraphs (10)(h), (11)(j), (12)(i), (13)(k), and (14)(k) of this rule will be accomplished.

(ix) For facilities where the Commissioner has applied alternative requirements at a regulated unit under part (6)(a)6 of this rule, ~~(7)~~ part (a)4 of this paragraph, and/or part (8)(a)4 of this rule, either the alternative requirements applying to the regulated unit, or a reference to the enforceable document containing those alternative requirements.

3. Amendment of Plan

The owner or operator may amend the closure plan at any time prior to the notification of partial or final closure of the facility. An owner or operator with an approved closure plan must submit a written request to the Commissioner to authorize a change to the approved closure plan. The written request must include four (4) copies of the amended closure plan for approval by the Commissioner.

(i) The owner or operator must amend the closure plan whenever:

(I) Changes in operating plans or facility design affect the closure plan, or

(II) There is a change in the expected year of closure, if applicable, or

(III) In conducting partial or final closure activities, unexpected events require a modification of the closure plan.

(IV) The owner or operator requests the Commissioner to apply alternative requirements to a regulated unit under part (6)(a)6 of this rule, ~~(7)~~ part (a)4 of this paragraph, and/or part (8)(a)4 of this rule.

(ii) The owner or operator must amend the closure plan at least 60 days prior to the proposed change in facility design or operation, or no later than 60 days after an unexpected event has occurred which has affected the closure plan. If an unexpected event occurs during the partial or final closure period, the owner or operator must amend the closure plan no later than 30 days after the unexpected event. These provisions also apply to owners or operators of surface impoundments and waste piles who intended to remove all hazardous wastes at closure, but are required to close as landfills in accordance with subparagraph (14)(k) of this rule.

(iii) An owner or operator with an approved closure plan must submit the modified plan to the Commissioner at least 60 days prior to the proposed change in facility design or operation, or no more than 60 days after an unexpected event has occurred which has affected the closure plan. If an unexpected event has occurred during the partial or final closure period, the owner or operator must submit the modified plan no more than 30 days after the unexpected event. These provisions also apply to owners or operators of surface impoundments and waste piles who intended to remove all hazardous wastes at closure but are required to close as landfills in accordance with subparagraph (14)(k) of this rule. If the amendment to the plan is a Class 1, [1]1, 2, or 3 modification according to the criteria in Rule ~~1200-01-11-.07~~ 0400-12-01-.07(9)(c), the modification to the plan will be approved according to the procedures in subpart 4(iv) of this subparagraph.

(iv) The Commissioner may request modifications to the plan under the conditions described in subpart (i) of this part. An owner or operator with an approved closure plan must submit the modified plan within 60 days of the request from the Commissioner, or within 30 days if the unexpected event occurs during partial or final closure. If the amendment is considered a Class 1, [1]1, 2, or 3 modification according to the criteria in Rule ~~1200-01-11-.07~~ 0400-12-01-.07(9)(c), the modification to the plan will be approved in accordance with the procedures in subpart 4(iv) of this subparagraph.

4. Notification of Partial Closure and Final Closure

(i) The owner or operator must submit the closure plan to the Commissioner at least 180 days prior to the date on which he expects to begin closure of the first surface impoundment, waste pile, land treatment, or landfill unit, or final closure if it involves such a unit, whichever is earlier. The owner or operator must submit the closure plan to the Commissioner at least 45 days prior to the date on which he expects to begin partial or final closure of a boiler or industrial furnace. The owner or operator must submit the closure plan to the Commissioner at least 45 days prior to the date on which he expects to begin final closure of a facility with only tanks, container storage, or incinerator units. Owners or operators with approved closure plans must notify the Commissioner in writing at least 60 days prior to the date on which he expects to begin closure of a surface impoundment, waste pile, landfill, or land treatment unit, or final closure of a facility involving such a unit. Owners or operators with approved closure plans must notify the Commissioner in writing at least 45 days prior to the date on which he expects to begin partial or final closure of a boiler or industrial furnace. Owners or operators with approved closure plans must notify the Commissioner in writing at least 45 days prior to the date on which he expects to begin final closure of a facility with only tanks, container storage, or incinerator units.

(ii) The date when he "expects to begin closure" must be either:

(I) Within 30 days after the date on which any hazardous waste management unit receives the known final volume of hazardous wastes, or, if there is a reasonable possibility that the hazardous waste management unit will receive additional hazardous wastes, no later than one year after the date on which the unit received the most recent volume of hazardous waste. If the owner or operator of a hazardous waste management unit can demonstrate to the Commissioner that the hazardous waste management unit or facility has the capacity to receive additional hazardous wastes and he has taken, and will continue to take, all steps to prevent threats to human health and the environment, including compliance with all interim status requirements, the Commissioner may approve an extension to this one-year limit; or

(II) For units meeting the requirements of part ~~(7)~~ (d)4 of this ~~Rule~~ paragraph, no later than 30 days after the date on which the hazardous waste management unit receives the known final volume of nonhazardous wastes, or if there is a reasonable possibility that the hazardous waste management unit will receive additional nonhazardous wastes, no later than one year after the date on which the unit received the most recent volume of nonhazardous wastes. If the owner or operator can demonstrate to the Commissioner that the hazardous waste management unit has the capacity to receive additional nonhazardous wastes and he has taken, and will continue to take, all steps to prevent threats to human health and the environment, including compliance with all applicable interim status requirements, the Commissioner may approve an extension to this one-year limit.

(iii) The owner or operator must submit at least four (4) copies of his closure plan to the Commissioner no later than 15 days after:

(I) Termination of interim status except when a permit is issued simultaneously with termination of interim status; or

(II) Issuance of a judicial decree or final order under T.C.A. §68-212-111 to cease receiving hazardous wastes or close.

(iv) The Commissioner will provide the owner or operator and the public, through a newspaper notice, published by the owner or operator, as provided for in Rule ~~1200-01-11-.07~~ 0400-12-01-.07(7)(e) and as prepared and required by the Commissioner, the opportunity to submit written comments on the plan and request modifications to the plan no later than 30 days from the date of the notice. The owner or operator shall provide proof of the completion of all notice requirements to the Commissioner within ten (10) days following conclusion of the public notice procedures. The Commissioner will also, in response to a request or at his own discretion, hold a public hearing whenever such a hearing might clarify one or more issues concerning a closure plan. The owner or operator, as provided for in Rule ~~1200-01-11-.07~~ 0400-12-01-.07(7)(e) and as prepared and required by the Commissioner, will give public notice of the hearing at least 30 days before it occurs. (Public notice of the hearing may be given at the same time as notice of the opportunity for the public to submit written comments, and the two notices may be combined.) The Commissioner will approve, modify, or disapprove the plan within 90 days of its receipt. If the Commissioner does not approve the plan he shall provide the owner or operator with a detailed written statement of reasons for the refusal and the owner or operator must modify the plan or submit a new plan [four (4) copies] for approval within 30 days after receiving such written statement. The Commissioner will approve or modify this plan in writing within 60 days. If the Commissioner modifies the plan, this modified plan becomes the approved closure plan. The Commissioner must assure that the approved plan is consistent with subparagraphs (b) through (f) of this paragraph and the applicable requirements of paragraph (6) and subparagraphs (10)(h), (11)(i), (12)(i), (13)(k), (14)(k), (15)(l), (16)(l), (17)(e), and (30)(c) of this rule. A copy of the modified plan with a detailed statement of reasons for the modifications must be mailed to the owner or operator.

5. Removal of Wastes and Decontamination or Dismantling of Equipment

Nothing in this subparagraph shall preclude the owner or operator from removing hazardous wastes and decontaminating or dismantling equipment in accordance with the approved partial or final closure plan at any time before or after notification of partial or final closure.

(d) Closure; Time Allowed for Closure [40 CFR 265.113]

1. Within 90 days after receiving the final volume of hazardous wastes, or the final volume of nonhazardous wastes if the owner or operator complies with all applicable requirements in parts 4 and 5 of this subparagraph, at a hazardous waste management unit or facility, or within 90 days after approval of the closure plan, whichever is later, the owner or operator must treat, remove from the unit or facility, or dispose of on-site, all hazardous wastes in accordance with the approved closure plan. The Commissioner may approve a longer period if the owner or operator demonstrates that:

   (i) (I) The activities required to comply with this part will, of necessity, take longer than 90 days to complete; or

   (II) I. The hazardous waste management unit or facility has the capacity to receive additional hazardous wastes, or has the capacity to receive non-hazardous wastes if the facility owner or operator complies with part 4 and 5 of this subparagraph; and

   II. There is a reasonable likelihood that he or another person will recommence operation of the hazardous waste management unit or the facility within one year; and

   III. Closure of the hazardous waste management unit or facility would be incompatible with continued operation of the site; and

   (ii) He has taken and will continue to take all steps to prevent threats to human health and the environment, including compliance with all applicable interim status requirements.

2. The owner or operator must complete partial and final closure activities in accordance with the approved closure plan and within 180 days after receiving the final volume of hazardous wastes, or the final volume of nonhazardous wastes if the owner or operator complies with all applicable requirements in parts 4 and 5 of this subparagraph, at the hazardous waste management unit or facility, or 180 days after approval of the closure plan, if that is later. The Commissioner may approve an extension to the closure period if the owner or operator demonstrates that:

   (i) (I) The partial or final closure activities will, of necessity, take longer than 180 days to complete; or

   (II) I. The hazardous waste management unit or facility has the capacity to receive additional hazardous wastes, or has the capacity to receive non-hazardous wastes if the facility owner or operator complies with parts 4 and 5 of this subparagraph; and

   II. There is reasonable likelihood that he or another person will recommence operation of the hazardous waste management unit or the facility within one year; and

   III. Closure of the hazardous waste management unit or facility would be incompatible with continued operation of the site; and

   (ii) He has taken and will continue to take all steps to prevent threats to human health and the environment from the unclosed but not operating hazardous waste management unit or facility, including compliance with all applicable interim status requirements.

3. The demonstrations referred to in subparts 1(i) and 2(i) of this subparagraph must be made as follows:

(i) The demonstrations in subpart 1(i) of this subparagraph must be made at least 30 days prior to the expiration of the 90-day period in part 1 of this subparagraph; and

(ii) The demonstration in subpart 2(i) of this subparagraph must be made at least 30 days prior to the expiration of the 180-day period in part 2 of this subparagraph, unless the owner or operator is otherwise subject to the deadlines in part 4 of this subparagraph.

4. The Commissioner may allow an owner or operator to receive non-hazardous wastes in a landfill, land treatment, or surface impoundment unit after the final receipt of hazardous wastes at that unit if:

(i) The owner or operator submits an amended part B application, or a part B application, if not previously required, and demonstrates that:

(I) The unit has the existing design capacity as indicated on the part A application to receive non-hazardous wastes; and

(II) There is a reasonable likelihood that the owner or operator or another person will receive non-hazardous wastes in the unit within one year after the final receipt of hazardous wastes; and

(III) The non-hazardous wastes will not be incompatible with any remaining wastes in the unit or with the facility design and operating requirements of the unit or facility under this part; and

(IV) Closure of the hazardous waste management unit would be incompatible with continued operation of the unit or facility; and

(V) The owner or operator is operating and will continue to operate in compliance with all applicable interim status requirements; and

(ii) The part B application includes an amended waste analysis plan, ground-water monitoring and response program, human exposure assessment required under federal RCRA Section 3019, and closure and post-closure plans, and updated cost estimates and demonstrations of financial assurance for closure and post-closure care as necessary and appropriate to reflect any changes due to the presence of hazardous constituents in the non-hazardous wastes, and changes in closure activities, including the expected year of closure if applicable under subpart (c)2(vii) of this paragraph, as a result of the receipt of non-hazardous wastes following the final receipt of hazardous wastes; and

(iii) The part B application is amended, as necessary and appropriate, to account for the receipt of non-hazardous wastes following receipt of the final volume of hazardous wastes; and

(iv) The part B application and the demonstrations referred to in subparts (i) and (ii) of this part are submitted to the Commissioner no later than 180 days prior to the date on which the owner or operator of the facility receives the known final volume of hazardous wastes, or no later than 90 days after the effective date of this rule in the state in which the unit is located, whichever is later.

5. In addition to the requirements in part 4 of this subparagraph, an owner or operator of a hazardous waste surface impoundment that is not in compliance with the liner and leachate collection system requirements in part (11)(b)3 of this rule must:

(i) Submit with the part B application:

(I) A contingent corrective measures plan; and

(II) A plan for removing hazardous wastes in compliance with subpart (ii) of this part; and

(ii) Remove all hazardous wastes from the unit by removing all hazardous liquids and removing all hazardous sludges to the extent practicable without impairing the integrity of the liner(s), if any.

(iii) Removal of hazardous wastes must be completed no later than 90 days after the final receipt of hazardous wastes. The Commissioner may approve an extension to this deadline if the owner or operator demonstrates that the removal of hazardous wastes will, of necessity, take longer than the allotted period to complete and that an extension will not pose a threat to human health and the environment.

(iv) If a release that is a statistically significant increase (or decrease in the case of pH) in hazardous constituents over background levels is detected in accordance with the requirements in paragraph (6) of this rule, the owner or operator of the unit:

(I) Must implement corrective measures in accordance with the approved contingent corrective measures plan required by subpart (i) of this part no later than one year after detection of the release, or approval of the contingent corrective measures plan, whichever is later;

(II) May receive wastes at the unit following detection of the release only if the approved corrective measures plan includes a demonstration that continued receipt of wastes will not impede corrective action; and

(III) May be required by the Commissioner to implement corrective measures in less than one year or to cease receipt of wastes until corrective measures have been implemented if necessary to protect human health and the environment.

(v) During the period of corrective action, the owner or operator shall provide annual reports to the Commissioner describing the progress of the corrective action program, compile all ground-water monitoring data, and evaluate the effect of the continued receipt of non-hazardous wastes on the effectiveness of the corrective action.

(vi) The Commissioner may require the owner or operator to commence closure of the unit if the owner or operator fails to implement corrective action measures in accordance with the approved contingent corrective measures plan within one year as required in subpart (iv) of this part, or fails to make substantial progress in implementing corrective action and achieving the facility's background levels.

(vii) If the owner or operator fails to implement corrective measures as required in subpart (iv) of this part, or if the Commissioner determines that substantial progress has not been made pursuant to subpart (vi) of this part:

(I) He shall notify the owner or operator in writing that the owner or operator must begin closure in accordance with the deadline in parts 1 and 2 of this subparagraph and provide a detailed statement of reasons for this determination, and

(II) He shall provide the owner or operator and the public, through a newspaper notice, the opportunity to submit written comments on the

decision no later than 20 days after the date of the notice.

(III) If the Commissioner receives no written comments, the decision will become final five days after the close of the comment period. The Commissioner will notify the owner or operator that the decision is final, and that a revised closure plan, if necessary, must be submitted within 15 days of the final notice and that closure must begin in accordance with the deadlines in parts 1 and 2 of this subparagraph.

(IV) If the Commissioner receives written comments on the decision, he shall make a final decision within 30 days after the end of the comment period, and provide the owner or operator in writing and the public through a newspaper notice, a detailed statement of reasons for the final decision. If the Commissioner determines that substantial progress has not been made, closure must be initiated in accordance with the deadlines in parts 1 and 2 of this subparagraph.

(V) The final determinations made by the Commissioner under items (III) and (IV) of this subpart are not subject to administrative appeal.

(e) Disposal or Decontamination of Equipment, Structures and Soils [40 CFR 265.114]

During the partial and final closure periods, all contaminated equipment, structures and soil must be properly disposed of, or decontaminated unless specified otherwise in subparagraphs (10)(h), (11)(i), (12)(i), (13)(k), or (14)(k) of this rule. By removing all hazardous wastes or hazardous constituents during partial and final closure, the owner or operator may become a generator of hazardous waste and must handle that hazardous waste in accordance with all applicable requirements of Rule ~~1200-01-11-.03~~ 0400-12-01-.03.

(f) Certification of Closure [40 CFR 265.115]

Within 60 days of completion of closure of each hazardous waste surface impoundment, waste pile, land treatment, and landfill unit, and within 60 days of completion of final closure, the owner or operator must submit to the Commissioner, by registered mail, a certification that the hazardous waste management unit or facility, as applicable, has been closed in accordance with the specifications in the approved closure plan. The certification must be signed by the owner or operator and by a qualified Professional Engineer. Documentation supporting the qualified Professional Engineer's certification must be furnished to the Commissioner upon request until he releases the owner or operator from the financial assurance requirements for closure under part (8)(d)8 of this rule.

As used in this subparagraph, the phrase "hazardous waste surface impoundment, waste pile, land treatment, and landfill unit" shall mean "hazardous waste management unit" as defined in Rule ~~1200-01-11-.01~~ 0400-12-01-.01(2)(a).

(g) Survey Plat [40 CFR 265.116]

No later than the submission of the certification of closure of each hazardous waste disposal unit, an owner or operator must submit to the local zoning authority, or the authority with jurisdiction over local land use, and to the Commissioner, a survey plat (at least four (4) copies) indicating the location and dimensions of landfill cells or other hazardous waste disposal units with respect to permanently surveyed benchmarks. This plat must be prepared and certified by a professional land surveyor. The plat filed with the local zoning authority, or the authority with jurisdiction over local land use must contain a note, prominently displayed, which states the owner's or operator's obligation to restrict disturbance of the hazardous waste disposal unit in accordance with the applicable regulations of this paragraph.

(h) Post-closure Care and Use of Property [40 CFR 265.117]

1. (i) Post-closure care for each hazardous waste management unit subject to the requirements of subparagraphs (h) through (k) of this paragraph must begin after completion of closure of the unit and continue for 30 years after that date. It must consist of at least the following:

(I) Monitoring and reporting in accordance with the requirements of paragraphs (6), (11), (12), (13), and (14) of this rule; and

(II) Maintenance and monitoring of waste containment systems in accordance with the requirements of paragraphs (6), (11), (12), (13), and (14) of this rule.

(ii) Any time preceding closure of a hazardous waste management unit subject to post-closure care requirements or final closure, or any time during the post-closure period for a particular hazardous waste disposal unit, the Commissioner may:

(I) Shorten the post-closure care period applicable to the hazardous waste management unit, or facility, if all disposal units have been closed, if he finds that the reduced period is sufficient to protect human health and the environment (e.g., leachate or ground-water monitoring results, characteristics of the hazardous waste, application of advanced technology, or alternative disposal, treatment, or re-use techniques indicate that the hazardous waste management unit or facility is secure); or

(II) Extend the post-closure care period applicable to the hazardous waste management unit or facility, if he finds that the extended period is necessary to protect human health and the environment (e.g., leachate or ground-water monitoring results indicate a potential for migration of hazardous wastes at levels which may be harmful to human health and the environment).

2. The Commissioner may require, at partial and final closure, continuation of any of the security requirements of subparagraph (2)(e) of this rule during part or all of the post-closure period when:

(i) Hazardous wastes may remain exposed after completion of partial or final closure; or

(ii) Access by the public or domestic livestock may pose a hazard to human health.

3. Post-closure use of property on or in which hazardous wastes remain after partial or final closure must never be allowed to disturb the integrity of the final cover, liner(s), or any other components of the containment system, or the function of the facility's monitoring systems, unless the Commissioner finds that the disturbance:

(i) Is necessary to the proposed use of the property, and will not increase the potential hazard to human health or the environment; or

(ii) Is necessary to reduce a threat to human health or the environment.

4. All post-closure care activities must be in accordance with the provisions of the approved post-closure plan as specified in subparagraph (i) of this paragraph.

(i) Post-closure Plan; Amendment of Plan [40 CFR 265.118]

1. Written Plan

By May 19, 1981, the owner or operator of a hazardous waste disposal unit must have a written post-closure plan. An owner or operator of a surface impoundment or waste pile that intends to remove all hazardous wastes at closure must prepare a post-closure plan and submit it to the Commissioner within 90 days of the date that the owner or operator or Commissioner determines that the hazardous waste management unit or facility must be closed as a landfill, subject to the requirements of subparagraphs (h) through (k) of this paragraph.

2. Until final closure of the facility, four (4) copies of the most current post-closure plan must be furnished to the Commissioner upon request, including request by mail. In addition, for facilities without approved post-closure plans, it must also be provided during site inspections, on the day of inspection, to any officer, employee or representative of the Department who is duly designated by the Commissioner. After final closure has been certified, the person or office specified in subpart 3(iii) of this subparagraph must keep the approved post-closure plan during the post-closure period.

3. For each hazardous waste management unit subject to the requirements of this subparagraph, the post-closure plan must identify the activities that will be carried on after closure of each disposal unit and the frequency of these activities, and include at least:

(i) A description of the planned monitoring activities and frequencies at which they will be performed to comply with paragraphs (6), (11), (12), (13), and (14) of this rule during the post-closure care period; and

(ii) A description of the planned maintenance activities, and frequencies at which they will be performed, to ensure:

(I) The integrity of the cap and final cover or other containment systems in accordance with the requirements of paragraphs (11), (12), (13), and (14) of this rule; and

(II) The function of the monitoring equipment in accordance with the requirements of paragraphs (6), (11), (12), (13), and (14) of this rule; and

(iii) The name, address, and phone number of the person or office to contact about the hazardous waste disposal unit or facility during the post-closure care period.

(iv) For facilities subject to subparagraph (I) of this paragraph, provisions that satisfy the requirements of subpart (I)1(i) and (iii) of this paragraph,

(v) For facilities where the Commissioner has applied alternative requirements at a regulated unit under part (6)(a)6 of this rule, ~~(7)~~ part (a)4 of this paragraph, and/or part (8)(a)4 of this rule, either the alternative requirements that apply to the regulated unit, or a reference to the enforceable document containing those requirements.

4. Amendment of Plan

The owner or operator may amend the post-closure plan any time during the active life of the facility or during the post-closure care period. An owner or operator with an approved post-closure plan must submit a written request to the Commissioner to authorize a change to the approved plan. The written request must include four (4) copies of the amended post-closure plan for approval by the Commissioner.

(i) The owner or operator must amend the post-closure plan whenever:

(I) Changes in operating plans or facility design affect the post-closure plan, or

(II) Events which occur during the active life of the facility, including partial and final closures, affect the post-closure plan.

(III) The owner or operator requests the Commissioner to apply alternative requirements to a regulated unit under part (6)(a)6 of this rule, ~~(7)~~ part (a)4 of this paragraph, and/or part (8)(a)4 of this rule.

(ii) The owner or operator must amend the post-closure plan at least 60 days prior to the proposed change in facility design or operation, or no later than 60 days after an unexpected event has occurred which has affected the post-closure plan.

(iii) An owner or operator with an approved post-closure plan must submit the modified plan to the Commissioner at least 60 days prior to the proposed change in facility design or operation, or no more than 60 days after an unexpected event has occurred which has affected the post-closure plan. If an owner or operator of a surface impoundment or a waste pile who intended to remove all hazardous wastes at closure in accordance with part (11)(i)2 or (12)(i)1 of this rule is required to close as a landfill in accordance with subparagraph (14)(k) of this rule, the owner or operator must submit a post-closure plan within 90 days of the determination by the owner or operator or Commissioner that the unit must be closed as a landfill. If the amendment to the post-closure plan is a Class 2 or 3 modification according to the criteria in Rule ~~1200-01-11-.07~~ 0400-12-01-.07(9)(c), the modification to the plan will be approved according to the procedures in part 6 of this subparagraph.

(iv) The Commissioner may request modifications to the plan under the conditions described in subpart (i) of this part. An owner or operator with an approved post-closure plan must submit the modified plan no later than 60 days of the request from the Commissioner. If the amendment to the plan is considered a Class 2 or 3 modification according to the criteria in Rule ~~1200-01-11-.07~~ 0400-12-01-.07(9)(c), the modifications to the post-closure plan will be approved in accordance with the procedures in part 6 of this subparagraph. If the Commissioner determines that an owner or operator of a surface impoundment or waste pile who intended to remove all hazardous wastes at closure must close the facility as a landfill, the owner or operator must submit a post-closure plan for approval to the Commissioner within 90 days of the determination.

5. The owner or operator of a facility with hazardous waste management units subject to these requirements must submit at least four (4) copies of his post-closure plan to the Commissioner at least 180 days before the date he expects to begin partial or final closure of the first hazardous waste disposal unit. The date he "expects to begin closure" of the first hazardous waste disposal unit must be either within 30 days after the date on which the hazardous waste management unit receives the known final volume of hazardous waste or, if there is a reasonable possibility that the hazardous waste management unit will receive additional hazardous wastes, no later than one year after the date on which the unit received the most recent volume of hazardous wastes. The owner or operator must submit the post-closure plan (four (4) copies) to the Commissioner no later than 15 days after:

(i) Termination of interim status (except when a permit is issued to the facility simultaneously with termination of interim status); or

(ii) Issuance of a judicial decree or final orders under T.C.A.§ 68-212-111 to cease receiving wastes or close.

6. The Commissioner will provide the owner or operator and the public, through a newspaper notice, published by the owner or operator, as provided for in Rule ~~1200-01-11-.07~~ 0400-12-01-.07(7)(e) and as prepared and required by the Commissioner, the

opportunity to submit written comments on the post-closure plan and request modifications to the plan no later than 30 days from the date of the notice. He will also, in response to a request or at his own discretion, hold a public hearing whenever such a hearing might clarify one or more issues concerning a post-closure plan. The owner or operator will give public notice, as provided for in Rule ~~1200-01-11-.07~~ 0400-12-01-.07(7)(e) and as prepared and required by the Commissioner, of the hearing at least 30 days before it occurs. (Public notice of the hearing may be given at the same time as notice of the opportunity for the public to submit written comments, and the two notices may be combined.) The owner or operator shall provide proof of the completion of all notice requirements to the Commissioner within ten (10) days following conclusion of the public notice procedures. The Commissioner will approve, modify, or disapprove the plan within 90 days of its receipt. If the Commissioner does not approve the plan he shall provide the owner or operator with a detailed written statement of reasons for the refusal and the owner or operator must modify the plan or submit a new plan (four (4) copies) for approval within 30 days after receiving such written statement. The Commissioner will approve or modify this plan in writing within 60 days. If the Commissioner modifies the plan, this modified plan becomes the approved post-closure plan. The Commissioner must ensure that the approved post-closure plan is consistent with subparagraphs (h) through (k) of this paragraph. A copy of the modified plan with a detailed statement of reasons for the modifications must be mailed to the owner or operator.

7. The post-closure plan and length of the post-closure care period may be modified any time prior to the end of the post-closure care period in either of the following two ways:

(i) The owner or operator or any member of the public may petition the Commissioner to extend or reduce the post-closure care period applicable to a hazardous waste management unit or facility based on cause, or alter the requirements of the post-closure care period based on cause.

(I) The petition must include evidence demonstrating that:

I. The secure nature of the hazardous waste management unit or facility makes the post-closure care requirement(s) unnecessary or supports reduction of the post-closure care period specified in the current post-closure plan (e.g., leachate or ground-water monitoring results, characteristics of the wastes, application of advanced technology, or alternative disposal, treatment, or re-use techniques indicate that the facility is secure), or

II. The requested extension in the post-closure care period or alteration of post-closure care requirements is necessary to prevent threats to human health and the environment (e.g., leachate or ground-water monitoring results indicate a potential for migration of hazardous wastes at levels which may be harmful to human health and the environment).

(II) These petitions will be considered by the Commissioner only when they present new and relevant information not previously considered by the Commissioner. Whenever the Commissioner is considering a petition, he will provide the owner or operator and the public, through a newspaper notice, published by the owner or operator, as provided for in Rule ~~1200-01-11-.07~~ 0400-12-01-.07(7)(e) and as prepared and required by the Commissioner, the opportunity to submit written comments within 30 days of the date of the notice. The Commissioner will also, in response to a request or at his own discretion, hold a public hearing whenever a hearing might clarify one or more issues concerning the post-closure plan. The owner or operator will give the public notice, as provided for in Rule ~~1200-01-11-.07~~ 0400-12-01-.07(7)(e) and as prepared and required by the Commissioner, of the hearing at least 30 days before it occurs.

(Public notice of the hearing may be given at the same time as notice of the opportunity for written public comments, and the two notices may be combined.) The owner or operator shall provide proof of the completion of all notice requirements to the Commissioner within ten (10) days following conclusion of the public notice procedures. After considering the comments, the Commissioner will issue a final determination, based upon the criteria set forth in subpart (i) of this part.

(III) If the Commissioner denies the petition, he will send the petitioner a brief written response giving a reason for the denial.

(ii) The Commissioner may tentatively decide to modify the post-closure plan if he deems it necessary to prevent threats to human health and the environment. He may propose to extend or reduce the post-closure care period applicable to a hazardous waste management unit or facility based on cause or alter the requirements of the post-closure care period based on cause.

(I) The Commissioner will provide the owner or operator and the affected public, through a newspaper notice, published by the owner or operator, as provided for in Rule ~~1200-01-11-.07~~ 0400-12-01-.07(7)(e) and as prepared and required by the Commissioner, the opportunity to submit written comments within 30 days of the date of the notice and the opportunity for a public hearing as in item (i)(II) of this part. The owner or operator shall provide proof of the completion of all notice requirements to the Commissioner within ten (10) days following the conclusion of the public notice procedures. After considering the comments, he will issue a final determination.

(II) The Commissioner will base his final determination upon the same criteria as required for petitions under item (i)(I) of this part. A modification of the post-closure plan may include, where appropriate, the temporary suspension rather than permanent deletion of one or more post-closure care requirements. At the end of the specified period of suspension, the Commissioner would then determine whether the requirement(s) should be permanently discontinued or reinstated to prevent threats to human health and the environment.

(j) Post-closure Notices [40 CFR 265.119]

1. No later than 60 days after certification of closure of each hazardous waste disposal unit, the owner or operator must submit to the local zoning authority, or the authority with jurisdiction over local land use, and to the Commissioner (at least four (4) copies), a record of the type, location, and quantity of hazardous wastes disposed of within each cell or other disposal unit of the facility. For hazardous wastes disposed of before January 12, 1981, the owner or operator must identify the type, location and quantity of the hazardous wastes to the best of his knowledge and in accordance with any records he has kept.

2. Within 60 days of certification of closure of the first hazardous waste disposal unit and within 60 days of certification of closure of the last hazardous waste disposal unit, the owner or operator must:

(i) Record, in accordance with State law, a notation on the deed to the facility property -- or on some other instrument which is normally examined during title search -- that will in perpetuity notify any potential purchaser of the property that:

(I) The land has been used to manage hazardous wastes; and

(II) Its use is restricted under ~~Tennessee~~ paragraph (7) of Rule ~~Chapter~~

~~1200-01-11-.05~~ 0400-12-01-.05~~(7) regulations~~; and

(III) The survey plat and record of the type, location, and quantity of hazardous wastes disposed of within each cell or other hazardous waste disposal unit of the facility required by subparagraph (g) of this paragraph and part ~~(I)~~1 of this subparagraph have been filed with the local zoning authority or the authority with jurisdiction over local land use and with the Commissioner; and

(ii) Submit a certification signed by the owner or operator that he has recorded the notation specified in subpart (i) of this part and a copy of the document in which the notation has been placed, to the Commissioner.

3. If the owner or operator or any subsequent owner of the land upon which a hazardous waste disposal unit was located wishes to remove hazardous wastes and hazardous waste residues, the liner, if any, and all contaminated structures, equipment, and soils, he must request a modification to the approved post-closure plan in accordance with the requirements of part (i)7 of this paragraph. The owner or operator must demonstrate that the removal of hazardous wastes will satisfy the criteria of part (h)3 of this paragraph. By removing hazardous waste, the owner or operator may become a generator of hazardous waste and must manage it in accordance with all applicable requirements of this chapter. If the owner or operator is granted approval to conduct the removal activities, the owner or operator may request that the Commissioner approve either:

(i) The removal of the notation on the deed to the facility property or other instrument normally examined during title search, or

(ii) The addition of a notation to the deed or instrument indicating the removal of the hazardous waste.

(k) Certification of Completion of Post-closure Care [40 CFR 265.120]

No later than 60 days after the completion of the established post-closure care period for each hazardous waste disposal unit, the owner or operator must submit to the Commissioner, by registered mail, a certification that the post-closure care period for the hazardous waste disposal unit was performed in accordance with the specifications in the approved post-closure plan. The certification must be signed by the owner or operator and a Professional Engineer. Documentation supporting the qualified Professional Engineer's certification must be furnished to the Commissioner upon request until he releases the owner or operator from the financial assurance requirements for post-closure care under part (8)(f)3 of this rule.

(l) Post-closure Requirements for Facilities that Obtain Enforceable Documents in Lieu of Post-closure Permits [40 CFR 265.121]

1. Owners and operators who are subject to the requirement to obtain a post-closure permit under Rule ~~1200-01-11-.07~~ 0400-12-01-.07(1)(b)2, but who obtain enforceable documents in lieu of post-closure permits, as provided under Rule ~~1200-01-11-.07~~ 0400-12-01-.07(1)(b)9, must comply with the following requirements:

(i) The requirements to submit information about the facility in Rule ~~1200-01-11-.07~~ 0400-12-01-.07(5)(b)14;

(ii) The requirements for facility-wide corrective action in Rule ~~1200-01-11-.06~~ 0400-12-01-.06(6)(l);

(iii) The requirements of Rules ~~1200-01-11-.06~~ 0400-12-01-.06(6)(b) through (k).

2. (i) The Commissioner, in issuing enforceable documents under this subparagraph in lieu of permits, will assure a meaningful opportunity for public involvement which,

at a minimum, includes public notice, published by the owner or operator, as provided for in Rule ~~1200-01-11-.07~~ 0400-12-01-.07(7)(e) and as prepared and required by the Commissioner, and opportunity for public comment (the owner or operator shall provide proof of the completion of all notice requirements to the Commissioner within ten (10) days following conclusion of the public notice procedures):

(I) When the Department becomes involved in a remediation at the facility as a regulatory or enforcement matter;

(II) On the proposed preferred remedy and the assumptions upon which the remedy is based, in particular those related to land use and site characterization; and

(III) At the time of a proposed decision that remedial action is complete at the facility. These requirements must be met before the Commissioner may consider that the facility has met the requirements of Rule ~~1200-01-11-.07~~ 0400-12-01-.07(1)(b)9, unless the facility qualifies for a modification to these public involvement procedures under subpart ~~2~~ (ii) or (iii) of this ~~subparagraph~~ part.

(ii) If the Commissioner determines that even a short delay in the implementation of a remedy would adversely affect human health or the environment, the Commissioner may delay compliance with the requirements of subpart ~~2~~ (i) of this ~~subparagraph~~ part and implement the remedy immediately. However, the Commissioner must assure involvement of the public at the earliest opportunity, and, in all cases, upon making the decision that additional remedial action is not needed at the facility.

(iii) The Commissioner may allow a remediation initiated prior to the effective date of these regulations to substitute for a corrective action required under a post-closure permit even if the public involvement requirements of subpart ~~2~~ (i) of this ~~subparagraph~~ part have not been met so long as the Commissioner assures that notice and comment on the decision that no further remediation is necessary to protect human health and the environment takes place at the earliest reasonable opportunity after the effective date of these regulations.

(8) Financial Requirements [40 CFR 265 Subpart H]

(a) Applicability [40 CFR 265.140]

1. The requirements of subparagraphs (c), (d) and (h) through (l) apply to owners or operators of all hazardous waste facilities, except as provided otherwise in this subparagraph or in subparagraph (1)(b) of this rule.

2. The requirements of subparagraphs (e) and (f) apply only to owners and operators of:

(i) Disposal facilities;

(ii) Tank systems that are required under ~~Rule 0400-12-01-.05~~ subparagraph (10)(h) of this rule to meet the requirements for landfills; and

(iii) Containment buildings that are required under ~~Rule 0400-12-01-.05~~ subparagraph (30)(c) of this rule to meet the requirements for landfills.

3. State and Federal governments are exempt from the requirements of this paragraph except for part (f)5. Part (f)5 of this paragraph shall be applicable to permitted facilities or any site that otherwise will eventually cease to operate while containing, storing, or otherwise treating hazardous wastes.

4. The Commissioner may replace all or part of the requirements of this paragraph applying to a regulated unit with alternative requirements for financial assurance set out in the permit or in an enforceable document (as defined in Rule ~~1200-01-11-.07~~ 0400-12-01-.07(1)(b)9), where the Commissioner:

   (i) Prescribes alternative requirements for the regulated unit under part (6)(a)6 and/or subparagraph (7)(a) of this rule, and

   (ii) Determines that it is not necessary to apply the requirements of this paragraph because the alternative financial assurance requirements will protect human health and the environment.

(b) Definitions of Terms as Used in this Paragraph [40 CFR 265.141]

1. "Closure plan" means the plan for closure prepared in accordance with the requirements of subparagraph (7)(c) of this rule.

2. "Current closure cost estimate" means the most recent of the estimates prepared in accordance with parts (c)1, 2, and 3 of this paragraph.

3. "Current post-closure cost estimate" means the most recent of the estimates prepared in accordance with parts (e)1, 2, and 3 of this paragraph.

4. "Division Director" means the Director of the Division of Solid Waste Management of the Department. This person also serves as the Technical Secretary to the Board, and functions as the chief of staff to both the Commissioner and the Board in matters relating to these rules and their implementation.

5. "Parent corporation" means a corporation which directly owns at least 50 percent of the voting stock of the corporation which is the facility owner or operator; the latter corporation is deemed a "subsidiary" of the parent corporation.

6. "Post-closure plan" means the plan for post-closure care prepared in accordance with the requirements of subparagraphs (7)(h) through (k) of this rule.

7. The following terms are used in the specifications for the financial tests for closure, post-closure care, and liability coverage. The definitions are intended to assist in the understanding of these regulations and are not intended to limit the meanings of terms in a way that conflicts with generally accepted accounting practices.

   "Assets" means all existing and all probable future economic benefits obtained or controlled by a particular entity.

   "Current assets" means cash or other assets or resources commonly identified as those which are reasonably expected to be realized in cash or sold or consumed during the normal operating cycle of the business.

   "Current liabilities" means obligations whose liquidation is reasonably expected to require the use of existing resources properly classifiable as current assets or the creation of other current liabilities.

   "Current plugging and abandonment cost estimate" means the most recent of the estimates prepared in accordance with Tennessee Rule 1200-04-06-.09(10) or 40 CFR 144.62(a), (b), and (c) (as this federal regulation exists on the effective date of this rulemaking), whichever is greater.

   "Independently audited" refers to an audit performed by an independent certified public accountant in accordance with generally accepted auditing standards.

"Liabilities" means probable future sacrifices of economic benefits arising from present obligations to transfer assets or provide services to other entities in the future as a result of past transactions or events.

"Net working capital" means current assets minus current liabilities.

"Net worth" means total assets minus total liabilities and is equivalent to owner's equity.

"Tangible net worth" means the tangible assets that remain after deducting liabilities; such assets would not include intangibles such as goodwill and rights to patents or royalties.

8. In the liability insurance requirements the terms "bodily injury" and "property damage" shall have the meanings given these terms by applicable Tennessee law. However, these terms do not include those liabilities which, consistent with standard industry practice, are excluded from coverage in liability policies for bodily injury and property damage. The Department intends the meanings of other terms used in the liability insurance requirements to be consistent with their common meanings within the insurance industry. The definitions given below of several of the terms are intended to assist in the understanding of these regulations and are not intended to limit their meanings in a way that conflicts with general insurance industry usage.

"Accidental occurrence" means an accident, including continuous or repeated exposure to conditions, which results in bodily injury or property damage neither expected nor intended from the standpoint of the insured.

"Legal defense costs" means any expenses that an insurer incurs in defending against claims of third parties brought under the terms and conditions of an insurance policy.

"Nonsudden accidental occurrence" means an occurrence which takes place over time and involves continuous or repeated exposure.

"Sudden accidental occurrence" means an occurrence which is not continuous or repeated in nature.

9. "Substantial business relationship" means the extent of a business relationship necessary under applicable Tennessee law to make a guarantee contract issued incident to that relationship valid and enforceable. A "substantial business relationship" must arise from a pattern of recent or ongoing business transactions, in addition to the guarantee itself, such that a currently existing business relationship between the guarantor and the owner or operator is demonstrated to the satisfaction of the Commissioner.

(c) Cost Estimate for Closure [40 CFR 265.142]

1. The owner or operator must have a detailed written estimate, in current dollars, of the cost of closing the facility in accordance with the requirements in subparagraphs (7)(b) through (f) and applicable closure requirements in subparagraphs (10)(h), (11)(i), (12)(i), (13)(k), (14)(k), (15)(l), (16)(l), (17)(e), and (30)(c) of this rule.

(i) The estimate must equal the cost of final closure at the point in the facility's active life when the extent and manner of its operation would make closure the most expensive, as indicated by its closure plan (see part (7)(c)2 of this rule); and

(ii) The closure cost estimate must be based on the costs to the owner or operator of hiring a third party to close the facility. A third party is a party who is neither a parent nor a subsidiary of the owner or operator. (See definition of parent corporation in part (b)5 of this paragraph.) The owner or operator may use costs

for on-site disposal if he can demonstrate that on-site disposal capacity will exist at all times over the life of the facility.

(iii) The closure cost estimate may not incorporate any salvage value that may be realized with the sale of hazardous wastes, or non-hazardous wastes if applicable under part (7)(d)4 of this rule, facility structures or equipment, land, or other assets associated with the facility at the time of partial or final closure.

(iv) The owner or operator may not incorporate a zero cost for hazardous wastes, or non-hazardous wastes if applicable under part (7)(d)4 of this rule, that might have economic value.

2. During the active life of the facility, the owner or operator must adjust the closure cost estimate for inflation within 60 days prior to the anniversary date of the establishment of the financial instrument(s) used to comply with subparagraph (d) of this paragraph. For owners and operators using the financial test or corporate guarantee, the closure cost estimate must be updated for inflation within 30 days after the close of the firm's fiscal year and before submission of updated information to the Division Director as specified in subpart (g)5(v) of this ~~part~~ paragraph. The adjustment may be made by recalculating the closure cost estimate in current dollars, or by using an inflation factor derived from the most recent Implicit Price Deflator for Gross National Product published by the U.S. Department of Commerce in its Survey of Current Business, as specified in subparts (i) and (ii) of this part. The inflation factor is the result of dividing the latest published annual Deflator by the Deflator for the previous year.

(i) The first adjustment is made by multiplying the closure cost estimate by the inflation factor. The result is the adjusted closure cost estimate.

(ii) Subsequent adjustments are made by multiplying the latest adjusted closure cost estimate by the latest inflation factor.

3. During the active life of the facility, the owner or operator must revise the closure cost estimate no later than 30 days after a revision has been made to the closure plan which increases the cost of closure. If the owner or operator has an approved closure plan, the closure cost estimate must be revised no later than 30 days after the Commissioner has approved the request to modify the closure plan, if the change in the closure plan increases the cost of closure. The revised closure cost estimate must be adjusted for inflation as specified in part 2 of this subparagraph.

4. The owner or operator must keep the following at the facility during the operating life of the facility: The latest closure cost estimate prepared in accordance with parts 1 and 3 of this subparagraph and, when this estimate has been adjusted in accordance with part 2 of this subparagraph, the latest adjusted closure cost estimate.

(d) Financial Assurance for Closure [40 CFR 265.143]

By 90 days after the effective date of these regulations, an owner or operator of each facility must file and maintain with the Division Director financial assurance for closure of the facility in accordance with the requirements of this subparagraph.

1. The owner or operator must choose from the financial assurance mechanisms as specified in subparagraph (g) of this paragraph.

(Note: See also subparagraphs (h), (i), (j) and (k) of this paragraph.)

2. The owner or operator must file and maintain financial assurance in an amount at least equal to the current closure cost estimate.

(i) Whenever the closure cost estimate increases to an amount greater than the

amount of financial assurance currently filed with the Division Director, the owner or operator must, within 60 days after the increase, file additional financial assurance at least equal to this increase.

(ii) Whenever the current closure cost estimate decreases, and upon the written request of the owner or operator, the Division Director shall, provided he validates the decrease, reduce the amount of financial assurance required for the facility to the amount of the current closure cost estimate. Upon such occurrence, the Division Director shall, as appropriate considering the financial assurance mechanism(s) on file, either cause to be released to the owner or operator cash or collateral equal to this reduction or allow the owner or operator to substitute for the mechanism(s) on file a new mechanism(s) in the reduced amount.

3. The financial assurance must be maintained until the Commissioner or Board releases the owner or operator from the requirements of this subparagraph, as specified in this part, or until the Commissioner or Board orders forfeiture of the financial assurance as provided in part 4 of this subparagraph.

(i) Release of the owner or operator from the requirements of this subparagraph

Within 60 days after receiving certifications from the owner or operator and a qualified Professional Engineer that final closure has been completed in accordance with the approved closure plan, the Division Director will notify the owner or operator in writing that he is no longer required by this subparagraph to maintain financial assurance for final closure of the facility, unless the Commissioner or Board has reason to believe that final closure has not been in accordance with the approved closure plan. The Division Director shall provide the owner or operator a detailed written statement of any such reason to believe that closure has not been in accordance with the approved closure plan.

(ii) Financial assurance will normally be released in the form(s) it was submitted. However, where such release involves an amount equal to only a portion of the funds assured by a financial assurance mechanism (see subparagraphs (i) and (j) of this paragraph), the Commissioner shall, as appropriate considering the type of mechanism involved, either cause to be released to the owner or operator cash or collateral equal to that amount or allow the owner or operator to substitute for the mechanism on file a new mechanism(s) reduced by that amount.

4. The Commissioner or Board, as appropriate, may order that any financial assurance filed by an owner or operator pursuant to this subparagraph be forfeited to the State if the Commissioner or Board determines that the owner or operator has failed to perform final closure in accordance with the approved closure plan when required to do so. Any such forfeiture action shall follow the procedures provided in subparagraphs (l) and (m) of this paragraph.

(Note: The original effective date of these regulations was October 31, 1980).

(e) Cost Estimate for Post-closure Care [40 CFR 265.144]

1. The owner or operator of a hazardous waste disposal unit must have a detailed written estimate, in current dollars, of the annual cost of post-closure monitoring and maintenance of the facility in accordance with the applicable post-closure regulations in subparagraphs (7)(h) through (k), (11)(i), (12)(i), (13)(k) and (14)(k) of this rule.

(i) The post-closure cost estimate must be based on the costs to the owner or operator of hiring a third party to conduct post-closure care activities. A third party is a party who is neither a parent nor subsidiary of the owner or operator. (See definition of parent corporation at part (b)5 of this paragraph.)

(ii) The post-closure cost estimate is calculated by multiplying the annual post-closure cost estimate by the number of years of post-closure care required under subparagraph (7)(h) of this rule.

2. During the active life of the facility, the owner or operator must adjust the post-closure cost estimate for inflation within 60 days prior to the anniversary date of the establishment of the financial instrument(s) used to comply with subparagraph (f) of this paragraph. For owners or operators using the financial test or corporate guarantee, the post-closure care cost estimate must be updated for inflation no later than 30 days after the close of the firm's fiscal year and before submission of updated information to the Division Director as specified in subpart (g)4(v) of this paragraph. The adjustment may be made by recalculating the post-closure cost estimate in current dollars or by using an inflation factor derived from the most recent Implicit Price Deflator for Gross National Product published by the U.S. Department of Commerce in its Survey of Current Business as specified in subparts (i) and (ii) of this part. The inflation factor is the result of dividing the latest published annual Deflator by the Deflator for the previous year.

(i) The first adjustment is made by multiplying the post-closure cost estimate by the inflation factor. The result is the adjusted post-closure cost estimate.

(ii) Subsequent adjustments are made by multiplying the latest adjusted post-closure cost estimate by the latest inflation factor.

3. During the active life of the facility, the owner or operator must revise the post-closure cost estimate no later than 30 days after a revision to the post-closure plan which increases the cost of post-closure care. If the owner or operator has an approved post-closure plan, the post-closure cost estimate must be revised no later than 30 days after the Commissioner has approved the request to modify the plan, if the change in the post-closure plan increases the cost of post-closure care. The revised post-closure cost estimate must be adjusted for inflation as specified in part 2 of this subparagraph.

4. The owner or operator must keep the following at the facility during the operating life of the facility: the latest post-closure cost estimate prepared in accordance with parts 1 and 3 of this subparagraph and, when this estimate has been adjusted in accordance with part 2 of this subparagraph, the latest adjusted post-closure cost estimate.

(f) Additional Procedures for Financial Assurance for Post-Closure Care [40 CFR 265.145]

By 90 days after the effective date of these regulations, an owner or operator of a facility with a hazardous waste disposal unit must file and maintain with the Division Director financial assurance for post-closure care of the disposal unit(s) in accordance with the requirements of this subparagraph.

1. The owner or operator must choose from the financial assurance mechanisms as specified in subparagraph (g) of this paragraph.

(Note: See also subparagraphs (h), (i), (j) and (k) of this paragraph.)

2. The owner or operator must file and maintain financial assurance in an amount at least equal to the current post-closure cost estimate.

(i) Whenever the current post-closure cost estimate increases to an amount greater than the amount of financial assurance currently filed with the Division Director, the owner or operator must, within 60 days after the increase, file additional financial assurance at least equal to this increase.

(ii) Whenever the current post-closure cost estimate decreases during the operating life of the facility, and upon the written request of the owner or operator, the

Division Director shall, provided he or she validates the decrease, reduce the amount of financial assurance required for the facility to the amount of the current post-closure cost estimate. Upon such occurrence, the Division Director shall, as appropriate considering the financial assurance mechanism(s) on file, either cause to be released to the owner or operator cash or collateral equal to this reduction or allow the owner or operator to substitute for the mechanism(s) on file a new mechanism(s) in the reduced amount.

(iii) During the period of post-closure care, the Division Director may reduce the amount of financial assurance required for the facility if the owner or operator demonstrates to the Division Director that the amount currently filed exceeds the remaining cost of post-closure care. Upon such occurrence, the Division Director shall, as appropriate considering the financial assurance mechanism(s) on file, either cause to be released to the owner or operator cash or collateral equal to this reduction or allow the owner or operator to substitute for the mechanism(s) on file a new mechanism(s) in the reduced amount.

3. The financial assurance must be maintained until the Commissioner or Board releases the owner or operator from the requirements of this subparagraph, as specified in this part, or until the Commissioner or Board orders forfeiture of the financial assurance as provided in part 4 of this subparagraph.

(i) Release of the owner or operator from the requirements of the subparagraph

Within 60 days after receiving certifications from the owner or operator and a qualified Professional Engineer that the post-closure care period has been completed for a hazardous waste disposal unit in accordance with the approved post-closure plan, the Division Director will notify the owner or operator in writing that he is no longer required to maintain financial assurance for post-closure care of that unit, unless the Commissioner or Board has reason to believe that post-closure care has not been in accordance with the approved post-closure plan. The Division Director shall provide the owner or operator a detailed written statement of any such reason to believe that post-closure care has not been in accordance with the approved post-closure plan.

(ii) Financial assurance will normally be released in the form(s) it was submitted. However, where such release involves an amount equal to only a portion of the funds assured by a financial assurance mechanism (see subparagraphs (i) and (j) of this paragraph), the Commissioner shall, as appropriate considering the type of mechanism involved, either cause to be released to the owner or operator cash or collateral equal to that amount or allow the owner or operator to substitute for the mechanism on file a new mechanism(s) reduced by that amount.

4. The Commissioner or Board, as appropriate, may order that any financial assurance filed by an owner or operator pursuant to this subparagraph be forfeited to the State if the Commissioner or Board determines that the owner or operator has failed to perform post-closure care in accordance with the approved post- closure plan. Any such forfeiture action shall follow the procedures provided in subparagraphs (l) and (m) of this paragraph.

5. If the Commissioner determines that there is a reasonable probability that a facility or site will cease to operate while hazardous waste constituents remain on or in the facility or site, the Commissioner may require the posting of financial assurance or the payment of a disposal fee for the perpetual care of the facility or site. This financial assurance or fee shall be in addition to any other financial assurance or fee. The amount of the financial assurance or fee shall be based upon the estimated cost of maintaining the facility or site in perpetuity. The Commissioner may institute the requirement to pay this financial assurance or fee through a permit modification or through the issuance of an order. Such

permit modification or order shall specify the manner of payment and the terms for use of the funds paid.

(Note: The original effective date of these regulations was October 31, 1980.)

(g) Mechanisms for Financial Assurance [40 CFR 265.143 and 265.145]

By the effective date of these regulations, an owner or operator of each facility must establish and maintain with the Division Director financial assurance for closure of the facility. He must choose from the options as specified in parts 1 through 5 of this subparagraph.

1. Closure and/or Post-closure Care Trust Fund

An owner or operator may satisfy the requirements of subparagraphs (d) and/or (f) of this paragraph by establishing and maintaining a closure trust fund which conforms to the requirements of this part and submitting an originally signed duplicate of the trust agreement to the Division Director.

(i) The trustee of the trust fund must be licensed to do business as a trustee in Tennessee.

(ii) The wording of the trust agreement must be identical to the wording specified in Rule ~~1200-01-11-.06~~ 0400-12-01-.06(8)(p)1(i), and the trust agreement must be accompanied by a formal certification of acknowledgment (for example, see Rule ~~1200-01-11-.06~~ 0400-12-01-.06(8)(p)1(ii)). Schedule A of the trust agreement must be updated within 60 days after a change in the amount of the current closure and/or post-closure care cost estimate covered by the agreement.

(iii) Payments into the trust fund must be made annually by the owner or operator over the 20 years beginning with the effective date of these regulations or over the remaining operating life of the facility as estimated in the closure plan, whichever period is shorter; this period is hereafter referred to as the "pay-in period." The payments into the closure and/or post-closure care trust fund must be made as follows:

(I) The first payment must be made by the effective date of these regulations, except as provided in subpart (v) of this part. The first payment must be at least equal to the current closure and/or post-closure care cost estimate, except as provided in part 6 of this subparagraph, divided by the number of years in the pay-in period.

(II) Subsequent payments must be made no later than 30 days after each anniversary date of the first payment. The amount of each subsequent payment must be determined by this formula:

$$\text{Next payment} = \frac{CE - CV}{Y}$$

where CE is the current closure and/or post-closure care cost estimate, CV is the current value of the trust fund, and Y is the number of years remaining in the pay-in period.

(iv) The owner or operator may accelerate payments into the trust fund or he may deposit the full amount of the current closure and/or post-closure care cost estimate at the time the fund is established. However, he must maintain the value of the fund at no less than the value that the fund would have if annual payments were made as specified in subpart (iii) of this part.

(v) If the owner or operator establishes a closure and/or post-closure care trust fund after having used one or more alternate mechanisms specified in this paragraph, his first payment must be in at least the amount that the fund would contain if the trust fund were established initially and annual payments made as specified in subpart (iii) of this part.

(vi) After the pay-in period is completed, whenever the current closure and/or post-closure care cost estimate changes, the owner or operator must compare the new estimate with the trustee's most recent annual valuation of the trust fund. If the value of the fund is less than the amount of the new estimate, the owner or operator, within 60 days after the change in the cost estimate, must either deposit an amount into the fund so that its value after this deposit at least equals the amount of the current closure and/or post-closure care cost estimate, or obtain other financial assurance as specified in this paragraph to cover the difference.

(vii) If the value of the trust fund is greater than the total amount of the current closure and/or post-closure care cost estimate, the owner or operator may submit a written request to the Division Director for release of the amount in excess of the current closure and/or post-closure care cost estimate.

(viii) If an owner or operator substitutes other financial assurance as specified in this paragraph for all or part of the trust fund, he may submit a written request to the Division Director for release of the amount in excess of the current closure and/or post-closure care cost estimate covered by the trust fund.

(ix) Within 60 days after receiving a request from the owner or operator for release of funds as specified in subpart (vii) or (viii) of this part, the Commissioner will instruct the trustee to release to the owner or operator such funds as the Commissioner specifies in writing.

(x) After beginning partial or final closure and/or post-closure care, an owner or operator or another person authorized to conduct partial or final closure may request reimbursements for partial or final closure and/or post-closure care expenditures by submitting itemized bills to the Division Director. The owner or operator may request reimbursements for partial closure and/or post-closure care only if sufficient funds are remaining in the trust fund to cover the maximum costs of closing the facility over its remaining operating life and/or remaining costs of post-closure care of the facility. No later than 60 days after receiving bills for partial or final closure and/or post-closure care activities, the Commissioner will instruct the trustee to make reimbursements in those amounts as the Commissioner specifies in writing, if the Division Director determines that the partial or final closure and/or post-closure care expenditures are in accordance with the approved closure and/or post-closure care plan, or otherwise justified. If the Commissioner has reason to believe that the maximum cost of closure and/or post-closure care over the remaining life of the facility and/or post-closure care period will be significantly greater than the value of the trust fund, he may withhold reimbursements of such amounts as he deems prudent until he determines, in accordance with part (d)4 and/or part (f)4 of this paragraph that the owner or operator is no longer required to maintain financial assurance for final closure and/or post-closure care of the facility. If the Commissioner does not instruct the trustee to make such reimbursements, he will provide to the owner or operator a detailed written statement of reasons.

(xi) The Commissioner will agree to termination of the trust when:

(I) An owner or operator substitutes alternate financial assurance as specified in this paragraph; or

(II) The Commissioner releases the owner or operator from the requirements of subparagraphs (d) and/or (f) of this paragraph in accordance with part (d)4 and/or part (f)4 of this paragraph.

2. Surety Bond Guaranteeing Payment into a Closure and/or Post-closure Trust Fund

An owner or operator may satisfy the requirements of subparagraphs (d) and/or (f) of this paragraph by obtaining a surety bond which conforms to the requirements of this part and submitting the bond to the Division Director.

(i) The surety company issuing the bond must be licensed to do business as a surety in Tennessee and must be among those listed as acceptable sureties by the Commissioner.

(ii) The wording of the surety bond must be identical to the wording specified in Rule ~~1200-01-11-.06~~ 0400-12-01-.06(8)(p)2.

(iii) The owner or operator who uses a surety bond to satisfy the requirements of subparagraphs (d) and/or (f) of this paragraph must also establish a standby trust fund. Under the terms of the bond, all payments made thereunder will be deposited by the surety directly into the standby trust fund in accordance with instructions from the Commissioner. This standby trust fund must meet the requirements specified in part 1 of this subparagraph, except that:

(I) An originally signed duplicate of the trust agreement must be submitted to the Division Director with the surety bond; and

(II) Until the standby trust fund is funded pursuant to the requirements of this paragraph, the following are not required by these regulations:

I. Payments into the trust fund as specified in part 1 of this subparagraph;

II. Updating of Schedule A of the trust agreement (see Rule ~~1200-01-11-.06~~ 0400-12-01-.06(8)(p)1) to show current closure and/ or post-closure care cost estimates;

III. Annual valuations as required by the trust agreement; and

IV. Notices of nonpayment as required by the trust agreement.

(iv) The bond must guarantee that the owner or operator will:

(I) Fund the standby trust fund in an amount equal to the penal sum of the bond before the beginning of final closure and/or post-closure care of the facility; or

(II) Fund the standby trust fund in an amount equal to the penal sum within 15 days after an administrative order to begin final closure and/or post-closure care issued by the Commissioner becomes final, or within 15 days after an order to begin final closure and/or post-closure care is issued by the Commissioner, the Board or court of competent jurisdiction; or

(III) Provide alternate financial assurance as specified in this paragraph, and obtain the Division Director's written approval of the assurance provided, within 90 days after receipt by both the owner or operator and the Division Director of a notice of cancellation of the bond from the surety.

(v) Under the terms of the bond, the surety will become liable on the bond obligation when the owner or operator fails to perform as guaranteed by the bond.

(vi) The penal sum of the bond must be in an amount at least equal to the current closure and/or post-closure care estimate, except as provided in subparagraph (h) of this paragraph.

(vii) Under the terms of the bond, the surety may cancel the bond by sending notice of cancellation by certified mail to the owner or operator and to the Division Director. Cancellation may not occur, however, during the 120 days beginning on the date of receipt of the notice of cancellation by both the owner or operator and the Division Director, as evidenced by the return receipts.

(viii) The owner or operator may cancel the bond if the Commissioner has given prior written consent based on his receipt of evidence of alternate financial assurance as specified in this paragraph.

3. Closure and/or Post-closure Letter of Credit

An owner or operator may satisfy the requirements of subparagraph (d) and/or (f) of this paragraph by obtaining an irrevocable standby letter of credit which conforms to the requirements of this part and submitting the letter to the Division Director.

(i) The issuing institution must be an entity which has the authority to issue letters of credit and whose letter-of-credit operations are regulated and examined by a Federal or State agency.

(ii) The wording of the letter of credit must be identical to the wording specified in Rule ~~1200-01-11-.06~~ 0400-12-01-.06(8)(p)4.

(iii) The letter of credit must be accompanied by a letter from the owner or operator referring to the letter of credit by number, issuing institution, and date, and providing the following information: The Installation Identification Number, name, and address of the facility, and the amount of funds assured for closure and/or post-closure care of the facility by the letter of credit.

(iv) The letter of credit must be irrevocable and issued for a period of at least 1 year. The letter of credit must provide that the expiration date will be automatically extended for a period of at least 1 year unless, at least 120 days before the current expiration date, the issuing institution notifies both the owner or operator and the Division Director by certified mail of a decision not to extend the expiration date. Under the terms of the letter of credit, the 120 days will begin on the date when both the owner or operator and the Division Director have received the notice, as evidenced by the return receipts.

(v) The Division Director may draw on the Letter of Credit upon forfeiture as provided in parts (d)4 and/or (f)4 of this paragraph. If the owner or operator does not establish alternate financial assurance as specified in this paragraph and obtain written approval of such alternate assurance from the Division Director within 90 days after receipt by both the owner or operator and the Division Director of a notice from the issuing institution that it has decided not to extend the letter of credit beyond the current expiration date, the Division Director will also draw on the letter of credit. The Division Director may delay the drawing if the issuing institution grants an extension of the term of the credit. During the last 30 days of any such extension the Division Director will draw on the letter of credit if the owner or operator has failed to provide alternate financial assurance as specified in this paragraph and obtain written approval of such assurance from the Division Director.

(vi) The Commissioner will return the letter of credit to the issuing institution for termination when:

(I) An owner or operator substitutes alternate financial assurance as specified in this paragraph; or

(II) The Commissioner releases the owner or operator from the requirements of this paragraph in accordance with parts (d)4 and/or (f)4 of this paragraph.

4. Closure and/or Post-closure Care Insurance

An owner or operator may satisfy the requirements of subparagraphs (d) and/or (f) of this paragraph by obtaining closure and/or post-closure care insurance which conforms to the requirements of this part and submitting a certificate of such insurance to the Division Director. By the effective date of these regulations the owner or operator must submit to the Division Director a letter from an insurer stating that the insurer is considering issuance of closure and/or post-closure care insurance conforming to the requirements of this part to the owner or operator. Within 90 days after the effective date of these regulations, the owner or operator must submit the certificate of insurance to the Division Director or establish other financial assurance as specified in this paragraph.

(i) The insurer must be licensed to transact the business of insurance, or eligible to provide insurance as an excess or surplus lines insurer, in the State of Tennessee and have an A. M. Best rating of at least A or A- or have special approval from the Commissioner. An insurer that is a "captive insurance company", as that term is used in T.C.A. sections 56-13-106 through 56-13-133, may not be utilized unless the Commissioner determines that such captive insurance company offers coverage that is equivalent in protection to other insurance companies or other allowable financial assurance mechanisms.

(ii) The wording of the certificate of insurance must be identical to the wording specified in Rule ~~1200-01-11-.06~~ 0400-12-01-.06(8)(p)5.

(iii) The insurance policy must be issued for a face amount at least equal to the current closure and/or post-closure care cost estimate, except as provided in subparagraph (h) of this paragraph. The term "face amount" means the total amount the insurer is obligated to pay under the policy. Actual payments by the insurer will not change the face amount, although the insurer's future liability will be lowered by the amount of the payments.

(iv) The insurance policy must guarantee that funds will be available to close the facility whenever final closure occurs and/or to provide post-closure care of the facility whenever the post-closure period begins. The policy must also guarantee that once final closure and/or the post-closure care period begins, the insurer will be responsible for paying out funds, up to an amount equal to the face amount of the policy, upon the direction of the Division Director, to such party or parties as the Division Director specifies.

(v) Under an insurance policy which guarantees the availability of funds for final closure and/or post-closure care, after beginning partial or final closure, an owner or operator or any other person authorized to conduct closure and/or post-closure care may request reimbursements for closure and/or post-closure care expenditures by submitting itemized bills to the Division Director. The owner or operator may request reimbursements for partial closure only if the remaining value of the policy is sufficient to cover the maximum costs of closing the facility over its remaining operating life. Within 60 days after receiving bills for closure and/or post-closure care activities, the Division Director will instruct the insurer to make reimbursements in such amounts as the Division Director specifies in

writing if the Division Director determines that the partial or final closure and/or post-closure care expenditures are in accordance with the approved closure plan or otherwise justified. If the Division Director has reason to believe that the maximum cost of closure and/or post-closure care over the remaining life of the facility will be significantly greater than the face amount of the policy, he may withhold reimbursement of such amounts as he deems prudent until the owner or operator is released from the financial assurance requirement as provided in part (d)3 and/or (f)3 of this paragraph. If the Division Director does not instruct the insurer to make such reimbursements, he will provide to the owner or operator a detailed written statement of reasons.

(vi) Upon forfeiture of financial assurance as provided in parts (d)4 and (f)4 of this paragraph, the Division Director will direct the insurer to pay the full face amount to the State.

(vii) The owner or operator must maintain the policy in full force and effect until the Division Director, Commissioner, or Board releases the financial assurance mechanism as provided in this paragraph. Failure to pay the premium, without substitution of alternate financial assurance as specified in this paragraph, will constitute a significant violation of these regulations, warranting such remedy as the Commissioner deems necessary. Such violation will be deemed to begin upon receipt by the Division Director of a notice of future cancellation, termination, or failure to renew due to nonpayment of the premium, rather than upon the date of expiration.

(viii) Each policy must contain a provision allowing assignment of the policy to a successor owner or operator. Such assignment may be conditional upon consent of the insurer, provided such consent is not unreasonably refused.

(ix) The policy must provide that the insurer may not cancel, terminate, or fail to renew the policy except for failure to pay the premium. The automatic renewal of the policy must, at a minimum, provide the insured with the option of renewal at the face amount of the expiring policy. If there is a failure to pay the premium, the insurer may elect to cancel, terminate, or fail to renew the policy by sending notice by certified mail to the owner or operator and the Division Director. Cancellation, termination, or failure to renew may not occur, however, during the 120 days beginning with the date of receipt of the notice by both the Division Director and the owner or operator, as evidenced by the return receipts. Cancellation, termination, or failure to renew may not occur and the policy will remain in full force and effect in the event that on or before the date of expiration:

(I) The Division Director deems the facility abandoned; or

(II) Interim status is terminated or revoked; or

(III) Closure is ordered by the Commissioner, the Board, or a court of competent jurisdiction; or

(IV) The owner or operator is named as debtor in a voluntary or involuntary proceeding under Title 11 (Bankruptcy), U.S. Code; or

(V) The premium due is paid.

(x) The Commissioner will give written consent to the owner or operator that he may terminate the insurance policy when:

(I) An owner or operator substitutes alternate financial assurance as specified in this paragraph; or

(II) The Commissioner releases the owner or operator from the requirements of this paragraph in accordance with part (d)3 and/or part (f)3 of this paragraph.

5. Personal Bond Supported by Securities

An owner or operator may satisfy the requirements of subparagraph (d) and/or (f) of this paragraph by filing his personal performance guarantee accompanied by collateral in the form of securities. He must guarantee to perform final closure in accordance with the closure plan and other requirements of interim status whenever required to do so, and/or guarantee to perform post-closure care in accordance with the post-closure plan and other requirements of interim status. The wording of the personal bond supported by securities must be identical to the wording specified in Rule ~~1200-01-11-.06~~ 0400-12-01-.06(8)(p)15. The securities supporting this guarantee must be fully registered as to principal and interest in such manner as to identify the State and the Department as holder of such collateral and to also identify that person filing such collateral. These securities must have a current market value at least adequate to provide the necessary financial assurance, and must be included among the following types:

(i) Negotiable certificates of deposit assigned irrevocably to the State.

(I) Such certificates of deposit must be automatically renewable and must be assigned to the State in writing and recorded as such in the records of the financial institution issuing such certificate.

(II) Such certificates of deposit must also include a statement signed by an officer of the issuing financial institution which waives all rights of lien which the institution has or might have against the certificate.

(ii) Negotiable United States Treasury securities assigned irrevocably to the State.

(iii) Negotiable general obligation municipal or corporate bonds which have at least an "A" rating by Moody's and/or Standard and Poor's rating services and which are assigned irrevocably to the State.

6. Personal Bond Supported by Cash

An owner or operator may satisfy the requirements of subparagraph (d) and/or (f) of this paragraph by filing his personal performance guarantee accompanied by cash in an amount at least adequate to provide the necessary financial assurance. He must guarantee to perform final closure in accordance with the closure plan and other requirements of interim status whenever required to do so and/or guarantee to perform post-closure care in accordance with the post-closure plan and other requirements of interim status.

7. Financial Test and Corporate Guarantee for Closure and/or Post-closure Care

(i) An owner or operator may satisfy the requirements of subparagraphs (d) and/or (f) of this paragraph by demonstrating that he passes a financial test as specified in this part. To pass this test the owner or operator must meet the criteria of either item (I) or (II) of this subpart as follows:

(I) The owner or operator must have:

I. Two of the following three ratios: A ratio of total liabilities to net worth less than 2.0; a ratio of the sum of net income plus depreciation, depletion, and amortization to total liabilities greater than 0.1; and a ratio of current assets to current liabilities greater than 1.5; and

II. Net working capital and tangible net worth each at least six times the sum of the current closure and post-closure cost estimates and the current plugging and abandonment cost estimates; and

III. Tangible net worth of at least $10 million; and

IV. Assets located in the United States amounting to at least 90 percent of total assets or at least six times the sum of the current closure and post-closure cost estimates and the current plugging and abandonment cost estimates.

(II) The owner or operator must have:

I. A current rating for his most recent bond issuance of AAA, AA, A, or BBB as issued by Standard and Poor's or Aaa, Aa, A, or Baa as issued by Moody's; and

II. Tangible net worth at least six times the sum of the current closure and post-closure cost estimates and the current plugging and abandonment cost estimates; and

III. Tangible net worth of at least $10 million; and

IV. Assets located in the United States amounting to at least 90 percent of total assets or at least six times the sum of the current closure and post-closure cost estimates and the current plugging and abandonment cost estimates.

(ii) The phrase "current closure and post-closure cost estimates" as used in subpart (i) of this part refers to the cost estimates required to be shown in paragraphs 1 through 4 of the letter from the owner's or operator's chief financial officer (Rule ~~1200-01-11-.06~~ 0400-12-01-.06(8)(p)6). The phrase "current plugging and abandonment cost estimates" as used in subpart (i) of this part refers to the cost estimates required to be shown in paragraphs 1 through 4 of the letter from the owner's or operator's chief financial officer (See 40 CFR 144.70(f), as that Federal regulation exists on the effective date of this rulemaking, or equivalent State requirement under ~~Rule~~ Chapter 1200-04-06).

(iii) To demonstrate that he meets this test, the owner or operator must submit the following items to the Division Director:

(I) A letter signed by the owner's or operator's chief financial officer and worded as specified in Rule ~~1200-01-11-.06~~ 0400-12-01-.06(8)(p)6; and

(II) A copy of the independent certified public accountant's report on examination of the owner's or operator's financial statements for the latest completed fiscal year; and

(III) A special report from the owner's or operator's independent certified public accountant to the owner or operator stating that:

I. He has compared the data which the letter from the chief financial officer specifies as having been derived from the independently audited, year-end financial statements for the latest fiscal year with the amounts in such financial statements; and

II. In connection with that procedure, no matters came to his

attention which caused him to believe that the specified data should be adjusted.

(iv) The owner or operator may obtain a one time extension of the time allowed in subparagraph (d) and (f) of this paragraph for submission of the documents specified in subpart (iii) of this part if the fiscal year of the owner or operator ends during the 90 days prior to the effective date of these regulations and if the year-end financial statements for that fiscal year will be audited by an independent certified public accountant. The extension will end no later than 90 days after the end of the owner's or operator's fiscal year. To obtain the extension, the owner's or operator's chief financial officer must send, by 90 days after the effective date of these regulations, a letter to the Division Director which must:

(I) Request the extension;

(II) Certify that he has grounds to believe that the owner or operator meets the criteria of the financial test;

(III) Specify for each facility to be covered by the test the Installation Identification Number, name, address, and current closure and post-closure cost estimates to be covered by the test;

(IV) Specify the date ending the owner's or operator's last complete fiscal year before the date 90 days after the effective date of these regulations;

(V) Specify the date, no later than 90 days after the end of such fiscal year, when he will submit the documents specified in subpart (iii) of this part; and

(VI) Certify that the year-end financial statements of the owner or operator for such fiscal year will be audited by an independent certified public accountant.

(v) After the initial submission of items specified in subpart (iii) of this part, the owner or operator must send updated information to the Division Director within 90 days after the close of each succeeding fiscal year. This information must consist of all three items specified in subpart (iii) of this part.

(vi) If the owner or operator no longer meets the requirements of subpart (i) of this part, he must send notice to the Division Director of intent to establish alternate financial assurance as specified in this paragraph. The notice must be sent by certified mail within 90 days after the end of the fiscal year for which the year-end financial data show that the owner or operator no longer meets the requirements. The owner or operator must provide the alternate financial assurance within 120 days after the end of such fiscal year.

(vii) The Division Director may, based on a reasonable belief that the owner or operator may no longer meet the requirements of subpart (i) of this part, require reports of financial condition at any time from the owner or operator in addition to those specified in subpart (iii) of this part. If the Division Director finds, on the basis of such reports or other information, that the owner or operator no longer meets the requirements of subpart (i) of this part, the owner or operator must provide alternate financial assurance as specified in this paragraph within 30 days after notification of such a finding.

(viii) The Commissioner may disallow use of this test on the basis of qualifications in the opinion expressed by the independent certified public accountant in his report on examination of the owner's or operator's financial statements (see item (iii)(II) of this part). An adverse opinion or a disclaimer of opinion will be cause for

disallowance. The Commissioner will evaluate other qualifications on an individual basis. The owner or operator must provide alternate financial assurance as specified in this paragraph within 30 days after notification of the disallowance.

(ix) The owner or operator is no longer required to submit the items specified in subpart (iii) of this part when:

(I) An owner or operator substitutes alternate financial assurance as specified in this paragraph; or

(II) The Commissioner or Board releases the owner or operator from the requirements of this paragraph in accordance with part (d)3 and/or (f)3 of this paragraph.

(x) An owner or operator may meet the requirements of subparagraphs (d) and/or (f) of this paragraph by obtaining a written guarantee, hereafter referred to as "corporate guarantee". The guarantor must be the direct or higher-tier parent corporation of the owner or operator, a firm whose parent corporation is also the parent corporation of the owner or operator, or a firm with a "substantial business relationship" with the owner or operator. The guarantor must meet the requirements for owners or operators in subpart (i) through (viii) of this part and must comply with the terms of the guarantee. The wording of the guarantee must be identical to the wording specified in Rule ~~1200-01-11-.06~~ 0400-12-01-.06(8)(p)8. A certified copy of the guarantee must accompany the items sent to the Division Director as specified in subpart (iii) of this part. One of these items must be the letter from the guarantor's chief financial officer. If the guarantor's parent corporation is also the parent corporation of the owner or operator, the letter must describe the value received in consideration of the guarantee. If the guarantor is a firm with a "substantial business relationship" with the owner or operator, this letter must describe this "substantial business relationship" and the value received in consideration of the guarantee. The terms of the guarantee must provide that:

(I) If the owner or operator fails to perform final closure of a facility covered by the corporate guarantee in accordance with the closure and/or post-closure plan and other interim status requirements whenever required to do so, the guarantor will do so or establish a trust fund as specified in part 1 of this subparagraph in the name of the owner or operator or forfeit to the State monies in an amount equal to the current closure and/or post-closure cost estimate for the facility as provided in part (d)4 and/or (f)4 of this paragraph as directed by the Commissioner.

(II) The corporate guarantee will remain in force unless the guarantor sends notice of cancellation by certified mail to the owner or operator and to the Division Director. Cancellation may not occur, however, during the 120 days beginning on the date of receipt of the notice of cancellation by both the owner or operator and the Division Director, as evidenced by the return receipts.

(III) If the owner or operator fails to provide alternate financial assurance as specified in this paragraph and obtain the written approval of such alternate assurance from the Division Director within 90 days after receipt by both the owner or operator and the Division Director of a notice of cancellation of the corporate guarantee from the guarantor, the guarantor will provide such alternate financial assurance in the name of the owner or operator.

(h) Use of Multiple Financial Mechanisms

An owner or operator may satisfy the requirements of subparagraphs (d) and/or (f) of this paragraph by establishing more than one financial mechanism per facility. These mechanisms are limited to trust funds, surety bonds, letters of credit, insurance, and personal bonds supported by securities or cash. The mechanisms must be as specified in subparagraph (g) of this paragraph, except that it is the combination of mechanisms, rather than the single mechanism, which must provide financial assurance for an amount at least equal to the current closure cost and/or post-closure care estimate. If an owner or operator uses a trust fund in combination with a surety bond or a letter of credit, he may use the trust fund as the standby trust fund for the other mechanisms. A single standby trust fund may be established for two or more mechanisms. The Commissioner may use any or all of the mechanisms to provide for closure and/or post-closure care of the facility.

(i) Use of a Financial Mechanism for Multiple Facilities

An owner or operator may use a financial assurance mechanism specified in subparagraph (g) of this paragraph to meet the requirements of subparagraph (d) and/or (f) of this paragraph for more than one facility. Evidence of financial assurance submitted to the Division Director must include a list showing, for each facility, the Installation Identification Number, name, address, and the amount of funds for closure assured by the mechanism. The amount of funds available through the mechanism must be no less than the sum of funds that would be available if a separate mechanism had been established and maintained for each facility. In a financial assurance forfeiture action taken under parts (d)4 and/or (f)4 of this paragraph for closure and/or post-closure care of any of the facilities covered by the mechanism, the Commissioner may order forfeiture of only the amount of funds designated for that facility, unless the owner or operator agrees to the use of additional funds available under the mechanism.

(j) Use of a Mechanism for Financial Assurance of Both Closure and Post-closure Care [40 CFR 265.146]

An owner or operator may satisfy the requirements for financial assurance for both closure and post-closure care for one or more facilities by using a mechanism from subparagraph (g) of this paragraph which meets the requirements of both subparagraphs (d) and (f) of this paragraph. The amount of funds available through the mechanism must be no less than the sum of funds that would be available if a separate mechanism had been established and maintained for financial assurance for closure and for post-closure care.

(k) Substituting Alternate Financial Assurance

In meeting the requirements of subparagraphs (d) or (f) of this paragraph, an owner or operator may substitute alternate financial assurance meeting the requirements of this paragraph for the financial assurance already filed with the Division Director for the facility. However, the existing financial assurance shall not be released by the Division Director until the substitute financial assurance has been received and approved by him or her.

(l) Procedures for Forfeiture of Financial Assurance

1. Upon his or her determination that the owner or operator has failed to perform final closure in accordance with the approved closure plan when required to do so, or has failed to perform post-closure care in accordance with the approved post-closure plan, the Division Director shall cause a notice of non-compliance to be served upon the owner or operator. Such notice shall be hand delivered or forwarded by certified mail. The notice of non-compliance shall specify in what respects the owner or operator has failed to perform as required, and shall establish a schedule of compliance leading to compliance with the plan and other permit requirements as soon as possible.

2. If the Division Director determines that the owner or operator has failed to perform as specified in the notice of non-compliance, or as specified in any subsequent compliance agreement which may have been reached by the owner or operator and the Division

Director, the Division Director shall cause a notice of show cause meeting to be served upon the owner or operator. Such notice shall be signed by the Division Director and either hand-delivered or forwarded by certified mail to the owner or operator. The notice of show cause meeting shall establish the date, time, and location of a meeting scheduled to provide the owner or operator with the opportunity to show cause why the Division Director should not pursue forfeiture of the financial assurance filed to guarantee such performance.

3. If no mutual compliance agreement is reached at the show cause meeting, or upon the Division Director's determination that the owner or operator has failed to perform as specified in such agreement that was reached, the Division Director shall request the Commissioner or Board, as appropriate, to order forfeiture of the financial assurance filed to guarantee such performance.

4. The Commissioner or Board, as appropriate, shall order forfeiture of the financial assurance upon his/her or its validation of the Division Director's determinations and upon his/her or its determination that the procedures of this subparagraph have been followed. The Commissioner or Board may, however, at his/her or its discretion, provide opportunity for the owner or operator to be heard before issuing such order. Upon issuance, a copy of the order shall be hand delivered or forwarded by certified mail to the owner or operator. Any such order issued by the Commissioner or Board shall become effective 30 days after receipt by the owner or operator unless it is appealed to the Board as provided in T.C.A. Section 68-212-113 of the Act.

5. If necessary, upon the effective date of the order of forfeiture, the Commissioner shall give notice to the State Attorney General who shall collect the forfeiture.

6. All forfeited funds shall be deposited in a special account entitled "the hazardous waste trust fund," for use by the Commissioner as set forth in T.C.A. Section 68-212-108(c)(6) of the Act.

(m) Management of Collateral Filed With the State

The Division Director shall obtain possession of, and deposit with the Treasurer of the State of Tennessee, all collateral filed under this paragraph, in accordance with Tennessee Code Annotated Section 8-5-110. At the owner or operator's request, the State Treasurer shall release to the operator any interest income from deposited securities as the same becomes due and payable.

(n) Liability Requirements [40 CFR 265.147]

1. Coverage for Sudden Accidental Occurrences

An owner or operator of a hazardous waste treatment, storage, or disposal facility, or a group of such facilities, must demonstrate financial responsibility for bodily injury and property damage to third parties caused by sudden accidental occurrences arising from operations of the facility or group of facilities. The owner or operator must have and maintain liability coverage for sudden accidental occurrences in the amount of at least $1 million per occurrence with an annual aggregate of at least $2 million, exclusive of legal defense costs. This liability coverage may be demonstrated as specified in subpart (i), (ii), (iii), (iv), (v), or (vi) of this part:

(i) An owner or operator may demonstrate the required liability coverage by having liability insurance as specified in this subpart.

(I) Each insurance policy must be amended by attachment of the Hazardous Waste Facility Liability Endorsement, or evidenced by a Certificate of Liability Insurance. The wording of the endorsement must be identical to the wording specified in Rule ~~1200-01-11-.06~~ 0400-12-01-

.06(8)(p)9. The wording of the certificate of insurance must be identical to the wording specified in Rule ~~1200-01-11-.06~~ 0400-12-01-.06(8)(p)10. The owner or operator must submit a signed duplicate original of the endorsement or the certificate of insurance to the Division Director. If requested by the Division Director, the owner or operator must provide a signed duplicate original of the insurance policy.

(II) Each insurance policy must be issued by an insurer which, at a minimum, is licensed to transact the business of insurance, or eligible to provide insurance as an excess or surplus lines insurer, in Tennessee. An insurer that is a "captive insurance company", as that term is used in T.C.A. sections 56-13-106 through 56-13-133, may not be utilized unless the Commissioner determines that such captive insurance company offers coverage that is equivalent in protection to other insurance companies or other allowable financial assurance mechanisms.

(ii) An owner or operator may meet the requirements of this subparagraph by passing a financial test or using the guarantee for liability coverage as specified in parts 6 and 7 of this subparagraph.

(iii) An owner or operator may meet the requirements of this subparagraph by obtaining a letter of credit for liability coverage as specified in part 8 of this subparagraph.

(iv) An owner or operator may meet the requirements of this subparagraph by obtaining a surety bond for liability coverage as specified in part 9 of this subparagraph.

(v) An owner or operator may meet the requirements of this subparagraph by obtaining a trust fund for liability coverage as specified in part 10 of this subparagraph.

(vi) An owner or operator may demonstrate the required liability coverage through the use of combinations of insurance, financial test, guarantee, letter of credit, surety bond, and trust fund, except that the owner or operator may not combine a financial test covering part of the liability coverage requirement with a guarantee unless the financial statement of the owner or operator is not consolidated with the financial statement of the guarantor. The amounts of coverage demonstrated must total at least the minimum amounts required by this subparagraph. If the owner or operator demonstrates the required coverage through the use of a combination of financial assurances under this paragraph, the owner or operator shall specify at least one such assurance as "primary" coverage and shall specify other assurance as "excess" coverage.

(vii) An owner or operator shall notify the Division Director in writing within 30 days whenever:

(I) A claim results in a reduction in the amount of financial assurance for liability coverage provided by a financial instrument authorized in subparts (i) through (vi) of this part; or

(II) A Certification of Valid Claim for bodily injury or property damages caused by a sudden or non-sudden accidental occurrence arising from the operation of a hazardous waste treatment, storage, or disposal facility is entered between the owner or operator and third-party claimant for liability coverage under subparts (i) through (vi) of this part; or

(III) A final court order establishing a judgment for bodily injury or property damage caused by a sudden or non-sudden accidental occurrence

arising from the operation of a hazardous waste treatment, storage, or disposal facility is issued against the owner or operator or an instrument that is providing financial assurance for liability coverage under subparts (i) through (vi) of this part.

2. Coverage for Nonsudden Accidental Occurrences

An owner or operator of a surface impoundment, landfill, or land treatment facility which is used to manage hazardous waste, or a group of such facilities, must demonstrate financial responsibility for bodily injury and property damage to third parties caused by nonsudden accidental occurrences arising from operations of the facility or group of facilities. The owner or operator must have and maintain liability coverage for nonsudden accidental occurrences in the amount of at least $3 million per occurrence with an annual aggregate of at least $6 million, exclusive of legal defense costs. An owner or operator who must meet the requirements of this subparagraph may combine the required per-occurrence coverage levels for sudden and nonsudden accidental occurrences into a single per-occurrence level, and combine the required annual aggregate coverage levels for sudden and nonsudden accidental occurrences into a single annual aggregate level. Owners or operators who combine coverage levels for sudden and nonsudden accidental occurrences must maintain liability coverage in the amount of at least $4 million per occurrence and $8 million annual aggregate. This liability coverage may be demonstrated as specified in subpart (i), (ii), (iii), (iv), (v), or (vi) of this part:

(i) An owner or operator may demonstrate the required liability coverage by having liability insurance as specified in subpart 1(i) of this subparagraph.

(ii) An owner or operator may meet the requirements of this subparagraph by passing a financial test or using the guarantee for liability coverage as specified in parts 6 and 7 of this subparagraph.

(iii) An owner or operator may meet the requirements of this subparagraph by obtaining a letter of credit for liability coverage as specified in part 8 of this subparagraph.

(iv) An owner or operator may meet the requirements of this subparagraph by obtaining a surety bond for liability coverage as specified in part 9 of this subparagraph.

(v) An owner or operator may meet the requirements of this subparagraph by obtaining a trust fund for liability coverage as specified in part 10 of this subparagraph.

(vi) An owner or operator may demonstrate the required liability coverage through the use of combinations of insurance, financial test, guarantee, letter of credit, surety bond, and trust fund, except that the owner or operator may not combine a financial test covering part of the liability coverage requirement with a guarantee unless the financial statement of the owner or operator is not consolidated with the financial statement of the guarantor. The amounts of coverage demonstrated must total at least the minimum amounts required by this subparagraph. If the owner or operator demonstrates the required coverage through the use of a combination of financial assurances under this part, the owner or operator shall specify at least one such assurance as "primary" coverage and shall specify other assurance as "excess" coverage.

(vii) An owner or operator shall notify the Division Director in writing within 30 days whenever:

(I) A claim results in a reduction in the amount of financial assurance for liability coverage provided by a financial instrument authorized in

subparts (i) through (vi) of this part; or

(II) A Certification of Valid Claim for bodily injury or property damages caused by a sudden or non-sudden accidental occurrence arising from the operation of a hazardous waste treatment, storage, or disposal facility is entered between the owner or operator and third-party claimant for liability coverage under subparts (i) through (vi) of this part; or

(III) A final court order establishing a judgment for bodily injury or property damage caused by a sudden or non-sudden accidental occurrence arising from the operation of a hazardous waste treatment, storage, or disposal facility is issued against the owner or operator or an instrument that is providing financial assurance for liability coverage under subparts (i) through (vi) of this part.

3. Request for Variance

If an owner or operator can demonstrate to the satisfaction of the Commissioner that the levels of financial responsibility required by part 1 or 2 of this subparagraph are not consistent with the degree and duration of risk associated with treatment, storage, or disposal at the facility or group of facilities, the owner or operator may obtain a variance from the Commissioner. The request for a variance must be submitted in writing to the Commissioner. If granted, the variance will take the form of an adjusted level of required liability coverage, such level to be based on the Commissioner's assessment of the degree and duration of risk associated with the ownership or operation of the facility or group of facilities. The Commissioner may require an owner or operator who requests a variance to provide such technical and engineering information as is deemed necessary by the Commissioner to determine a level of financial responsibility other than that required by part 1 or 2 of this subparagraph. The Commissioner will process a variance request as if it were a permit modification request under Rule ~~1200-01-11-.07~~ 0400-12-01-.07(9)(c)3(xiii) and subject to the procedures of Rule ~~1200-01-11-.07~~ 0400-12-01-.07(9)(c)2. Notwithstanding any other provision, the Commissioner may hold a public hearing at his discretion or whenever he finds, on the basis of requests for a public hearing, a significant degree of pubic interest in a tentative decision to grant a variance.

4. Adjustments by the Commissioner

If the Commissioner determines that the levels of financial responsibility required by part 1 or 2 of this subparagraph are not consistent with the degree and duration of risk associated with treatment, storage, or disposal at the facility or group of facilities, the Commissioner may adjust the level of financial responsibility required under part 1 or 2 of this subparagraph as may be necessary to protect human health and the environment. This adjusted level will be based on the Commissioner's assessment of the degree and duration of risk associated with the ownership or operation of the facility or group of facilities. In addition, if the Commissioner determines that there is a significant risk to human health and the environment from nonsudden accidental occurrences resulting from the operations of a facility that is not a surface impoundment, landfill, or land treatment facility, he may require that an owner or operator of the facility comply with part 2 of this subparagraph. An owner or operator must furnish to the Division Director, within a reasonable time, any information which the Commissioner requests to determine whether cause exists for such adjustments of level or type of coverage. The Commissioner will process an adjustment of the level of required coverage as if it were a permit modification under Rule ~~1200-01-11-.07~~ 0400-12-01-.07(9)(c)3(xiii) and subject to the procedures of Rule ~~1200-01-11-.07~~ 0400-12-01-.07(9)(c)2. Notwithstanding any other provision, the Commissioner may hold a public hearing at his discretion or whenever he finds, on the basis of requests for a public hearing, a significant degree of public interest in a tentative decision to adjust the level or type of required coverage.

5. Period of Coverage

Within 60 days after receiving certifications from the owner or operator and a qualified Professional Engineer that final closure has been completed in accordance with the approved closure plan, the Division Director will notify the owner or operator in writing that he is no longer required by this subparagraph to maintain liability coverage for that facility, unless the Commissioner or Board has reason to believe that closure has not been in accordance with the approved closure plan. The Division Director shall provide the owner or operator a detailed written statement of any such reason to believe that closure has not been in accordance with the approved closure plan.

6. Financial Test for Liability Coverage

(i) An owner or operator may satisfy the requirements of this subparagraph by demonstrating that he passes a financial test as specified in this part. To pass this test the owner or operator must meet the criteria of items (I) or (II) of this subpart:

(I) The owner or operator must have:

I. Net working capital and tangible net worth each at least six times the amount of liability coverage to be demonstrated by this test; and

II. Tangible net worth of at least $10 million; and

III. Assets in the United States amounting to either:

A. At least 90 percent of his total assets; or

B. At least six times the amount of liability coverage to be demonstrated by this test.

(II) The owner or operator must have:

I. A current rating for his most recent bond issuance of AAA, AA, A, or BBB as issued by Standard and Poor's, or Aaa, Aa, A, or Baa as issued by Moody's; and

II. Tangible net worth of at least $10 million; and

III. Tangible net worth at least six times the amount of liability coverage to be demonstrated by this test; and

IV. Assets in the United States amounting to either:

A. At least 90 percent of his total assets; or

B. At least six times the amount of liability coverage to be demonstrated by this test.

(ii) The phrase "amount of liability coverage" as used in subpart (i) of this part refers to the annual aggregate amounts for which coverage is required under parts 1 and 2 of this subparagraph.

(iii) To demonstrate that he meets this test, the owner or operator must submit the following three items to the Division Director:

(I) A letter signed by the owner's or operator's chief financial officer and worded as specified in Rule ~~1200-01-11-.06~~ 0400-12-01-.06(8)(p)7. If an

owner or operator is using the financial test to demonstrate both assurance for closure or post-closure care, as specified by Rule ~~1200-01-11-.06~~ 0400-12-01-.06(8)(d),(f) and (g)8 and subparagraphs (d) and (f) and part (g)7 of this paragraph, and liability coverage, he must submit the letter specified in Rule ~~1200-01-11-.06~~ 0400-12-01-.06(8)(p)7 to cover both forms of financial responsibility; a separate letter as specified in Rule ~~1200-01-11-.06~~ 0400-12-01-.06(8)(p)6 is not required.

(II) A copy of the independent certified public accountant's report on examination of the owner's or operator's financial statements for the latest completed fiscal year.

(III) A special report from the owner's or operator's independent certified public accountant to the owner or operator stating that:

I. He has compared the data which the letter from the chief financial officer specifies as having been derived from the independently audited, year-end financial statements for the latest fiscal year with the amounts in such financial statements; and

II. In connection with that procedure, no matters came to his attention which caused him to believe that the specified data should be adjusted.

(iv) The owner or operator may obtain a one-time extension of the time allowed in subparagraph (d) and (f) of this paragraph for submission of the documents specified in subpart (iii) of this part if the fiscal year of the owner or operator ends during the 90 days prior to the effective date of these regulations and if the year-end financial statements for that fiscal year will be audited by an independent certified public accountant. The extension will end no later than 90 days after the end of the owner's or operator's fiscal year. To obtain the extension, the owner's or operator's chief financial officer must send, by 90 days after the effective date of these regulations, a letter to the Division Director which must:

(I) Request the extension;

(II) Certify that he has grounds to believe that the owner or operator meets the criteria of the financial test;

(III) Specify for each facility to be covered by the test the Installation Identification Number, name, address, the amount of liability coverage and, when applicable, current closure and post-closure cost estimates to be covered by the test;

(IV) Specify the date ending the owner's or operator's last complete fiscal year before the date 90 days after the effective date of these regulations;

(V) Specify the date, no later than 90 days after the end of such fiscal year, when he will submit the documents specified in subpart (iii) of this part; and

(VI) Certify that the year-end financial statements of the owner or operator for such fiscal year will be audited by an independent certified public accountant.

(v) After the initial submission of items specified in subpart (iii) of this part, the owner or operator must send updated information to the Division Director within 90 days after the close of each succeeding fiscal year. This information must consist of all

three items specified in subpart (iii) of this part.

(vi) If the owner or operator no longer meets the requirements of subpart (i) of this part, he must obtain insurance, a letter of credit, a surety bond, a trust fund, or a guarantee for the entire amount of required liability coverage as specified in this subparagraph. Evidence of liability coverage must be submitted to the Division Director within 90 days after the end of the fiscal year for which the year-end financial data show that the owner or operator no longer meets the test requirements.

(vii) The Commissioner may disallow use of this test on the basis of qualifications in the opinion expressed by the independent certified public accountant in his report on examination of the owner's or operator's financial statements (see item (iii)(II) of this part). An adverse opinion or a disclaimer of opinion will be cause for disallowance. The Commissioner will evaluate other qualifications on an individual basis. The owner or operator must provide evidence of insurance for the entire amount of required liability coverage as specified in this subparagraph within 30 days after notification of disallowance.

7. Guarantee for Liability Coverage

(i) Subject to subpart (ii) of this part, an owner or operator may meet the requirements of this subparagraph obtaining a written guarantee, hereinafter referred to as "guarantee." The guarantor must be the direct or higher-tier parent corporation of the owner or operator, a firm whose parent corporation is also the parent corporation of the owner or operator, or a firm with a "substantial business relationship" with the owner or operator. The guarantor must meet the requirements for owners or operators in subparts 6(i) through 6(vi) of this subparagraph. The wording of the guarantee must be identical to the wording specified in Rule ~~1200-01-11-.06~~ 0400-12-01-.06(8)(p)8(ii). A certified copy of the guarantee must accompany the items sent to the Division Director as specified in subpart 6(iii) of this subparagraph. One of these items must be the letter from the guarantor's chief financial officer. If the guarantor's parent corporation is also the parent corporation of the owner or operator, this letter must describe the value received in consideration of the guarantee. If the guarantor is a firm with a "substantial business relationship" with the owner or operator, this letter must describe this "substantial business relationship" and the value received in consideration of the guarantee.

(I) If the owner or operator fails to satisfy a judgment based on a determination of liability for bodily injury or property damage to third parties caused by sudden or nonsudden accidental occurrences (or both as the case may be), arising from the operation of facilities covered by this corporate guarantee, or fails to pay an amount agreed to in settlement of claims arising from or alleged to arise from such injury or damage, the guarantor will do so up to the limits of coverage.

(II) (Reserved)

(ii) (I) In the case of corporations incorporated in the United States, a guarantee may be used to satisfy the requirements of this subparagraph only if the Attorneys General or Insurance Commissioners of

I. the State in which the guarantor is incorporated, and

II. each State in which a facility covered by the guarantee is located have submitted a written statement to the Division Director that a guarantee executed as described in this part and Rule ~~1200-01-11-.06~~ 0400-12-01-.06(8)(p)8(ii) is a legally valid and enforceable

obligation in that State.

(II) In the case of corporations incorporated outside the United States, a guarantee may be used to satisfy the requirements of this subparagraph only if

I. the non-U.S. corporation has identified a registered agent for service of process in each State in which a facility covered by the guarantee is located and in the State in which it has its principal place of business, and if

II. the Attorney General or Insurance Commissioner of each State in which a facility covered by the guarantee is located and the State in which the guarantor corporation has its principal place of business, has submitted a written statement to the Division Director that a guarantee executed as described in this part and Rule ~~1200-01-11-.06~~ 0400-12-01-.06(8)(p)8(ii) is a legally valid and enforceable obligation in that State.

8. Letter of Credit for Liability Coverage

(i) An owner or operator may satisfy the requirements of this subparagraph by obtaining an irrevocable standby letter of credit that conforms to the requirements of this part and submitting a copy of the letter of credit to the Division Director.

(ii) The financial institution issuing the letter of credit must be an entity that has the authority to issue letters of credit and whose letter of credit operations are regulated and examined by a Federal or State agency.

(iii) The wording of the letter of credit must be identical to the wording specified in Rule ~~1200-01-11-.06~~ 0400-12-01-.06(8)(p)11.

9. Surety Bond for Liability Coverage

(i) An owner or operator may satisfy the requirements of this subparagraph by obtaining a surety bond that conforms to the requirements of this part and submitting a copy of the bond to the Division Director.

(ii) The surety company issuing the bond must be licensed to do business as a surety in Tennessee.

(iii) The wording of the surety bond must be identical to the wording specified in Rule ~~1200-01-11-.06~~ 0400-12-01-.06(8)(p)12.

(iv) A surety bond may be used to satisfy the requirements of this subparagraph only if the Attorneys General or Insurance Commissioners of

(I) the State in which the surety is incorporated, and

(II) each State in which a facility covered by the surety bond is located have submitted a written statement to the Division Director that a surety bond executed as described in this subparagraph and Rule ~~1200-01-11-.06~~ 0400-12-01-.06(8)(p)12 is a legally valid and enforceable obligation in that State.

10. Trust Fund for Liability Coverage

(i) An owner or operator may satisfy the requirements of this subparagraph by establishing a trust fund that conforms to the requirements of this part and

submitting an originally signed duplicate of the trust agreement to the Division Director.

(ii) The trustee must be an entity which has the authority to act as a trustee and whose trust operations are regulated and examined by a Federal or State agency.

(iii) The trust fund for liability coverage must be funded for the full amount of the liability coverage to be provided by the trust fund before it may be relied upon to satisfy the requirements of this subparagraph. If at any time after the trust fund is created the amount of funds in the trust fund is reduced below the full amount of the liability coverage to be provided, the owner or operator, by the anniversary date of the establishment of the Fund, must either add sufficient funds to the trust fund to cause its value to equal the full amount of liability coverage to be provided, or obtain other financial assurance as specified in this subparagraph to cover the difference. For purposes of this part, "the full amount of the liability coverage to be provided" means the amount of coverage for sudden and/or nonsudden occurrences required to be provided by the owner or operator by this subparagraph, less the amount of financial assurance for liability coverage that is being provided by other financial assurance mechanisms being used to demonstrate financial assurance by the owner or operator.

(iv) The wording of the trust fund must be identical to the wording specified in Rule ~~1200-01-11-.06~~ 0400-12-01-.06(8)(p)13.

11. (Reserved) [40 CFR 265.147(k)]

(o) Incapacity of Owners or Operators, Guarantors, or Financial Institutions [40 CFR 265.148]

1. An owner or operator must notify the Division Director by certified mail of the commencement of a voluntary or involuntary proceeding under Title 11 (Bankruptcy), U.S. Code, naming the owner or operator as debtor, within 10 days after commencement of the proceeding. A guarantor of a corporate guarantee as specified in part (g)7 of this paragraph must make such a notification if he is named as debtor, as required under the terms of the corporate guarantee (Rule ~~1200-01-11-.06~~ 0400-12-01-.06(8)(p)8).

2. An owner or operator who fulfills the requirements of subparagraphs (d), (f) or (n) of this paragraph by obtaining a trust fund, surety bond, letter of credit, or insurance policy will be deemed to be without the required financial assurance or liability coverage in the event of bankruptcy of the trustee or issuing institution, or a suspension or revocation of the authority of the trustee institution to act as trustee or of the institution issuing the surety bond, letter of credit, or insurance policy to issue such instruments. The owner or operator must establish other financial assurance or liability coverage within 60 days after such an event.

(9) Use and Management of Containers [40 CFR 265 Subpart I]

(a) Applicability [40 CFR 265.170]

The regulations in this paragraph apply to owners and operators of all hazardous waste facilities that store containers of hazardous waste, except as paragraph (1) of this rule provides otherwise.

(b) Condition of Containers [40 CFR 265.171]

If a container holding hazardous waste is not in good condition, or if it begins to leak, the owner or operator must transfer the hazardous waste from this container to a container that is in good condition, or manage the waste in some other way that complies with the requirements of this rule.

(c) Compatibility of Waste with Container [40 CFR 265.172]

The owner or operator must use a container made of or lined with materials which will not react with, and are otherwise compatible with, the hazardous waste to be stored, so that the ability of the container to contain the waste is not impaired.

(d) Management of Containers [40 CFR 265.173]

1. A container holding hazardous waste must always be closed during storage, except when it is necessary to add or remove waste.

2. A container holding hazardous waste must not be opened, handled, or stored in a manner which may rupture the container or cause it to leak.

(Comment: Re-use of containers in transportation is governed by U.S. Department of Transportation regulations, including those set forth in 49 CFR 173.28.)

(e) Inspections [40 CFR 265.174]

At least weekly, the owner or operator must inspect areas where containers are stored~~, except for Performance Track member facilities that must conduct inspections at least once a month, upon approval by the Regional Administrator. To apply for reduced inspection frequency, the Performance Track member facility must follow the procedures described in subpart (2)(f)2(v) of this rule~~. The owner or operator must look for leaking containers and for deterioration of containers caused by corrosion or other factors.

(Comment: See subparagraph (b) of this paragraph for remedial action required if deterioration or leaks are detected.)

(f) (RESERVED) [40 CFR 265.175]

(g) Special Requirements for Ignitable or Reactive Waste [40 CFR 265.176]

Containers holding ignitable or reactive waste must be located at least 15 meters (50 feet) from the facility's property line.

(Comment: See part (2)(h)1 of this rule for additional requirements.)

(h) Special Requirements for Incompatible Wastes [40 CFR 265.177]

1. Incompatible wastes, or incompatible wastes and materials, (see Appendix V, paragraph (53) of this rule for examples) must not be placed in the same container, unless part (2)(h)2 of this rule is complied with.

2. Hazardous waste must not be placed in an unwashed container that previously held an incompatible waste or material (see paragraph (53) appendix V of this rule for examples), unless part (2)(h)2 of this rule is complied with.

3. A storage container holding a hazardous waste that is incompatible with any waste or other materials stored nearby in other containers, piles, open tanks, or surface impoundments must be separated from the other materials or protected from them by means of a dike, berm, wall, or other device.

(Comment: The purpose of this is to prevent fires, explosions, gaseous emissions, leaching, or other discharge of hazardous waste or hazardous waste constituents which could result from the mixing of incompatible wastes or materials if containers break or leak.)

(i) Air Emission Standards [40 CFR 265.178]

The owner or operator shall manage all hazardous waste placed in a container in accordance with the applicable requirements of paragraphs (27), (28), and (29) of this rule.

(10) Tank Systems [40 CFR 265 Subpart J]

(a) Applicability [40 CFR 265.190]

The requirements of this paragraph apply to owners and operators of facilities that use tank systems for storing or treating hazardous waste except as otherwise provided in parts 1, 2, and 3 of this subparagraph or in paragraph (1) of this rule.

1. Tank systems that are used to store or treat hazardous waste which contains no free liquids and that are situated inside a building with an impermeable floor are exempted from the requirements in subparagraph (d) of this paragraph. To demonstrate the absence or presence of free liquids in the stored/treated waste, the following test must be used: Method 9095B (Paint Filter Liquids Test) as described in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA Publication SW-846. (See 40 CFR 260.11; Rule ~~1200-01-11-.01~~ 0400-12-01-.01(2)(b)1.)

2. Tank systems, including sumps, as defined in Rule ~~1200-01-11-.01~~ 0400-12-01-.01(2)(a), that serve as part of a secondary containment system to collect or contain releases of hazardous wastes are exempted from the requirements in part (d)1 of this paragraph.

3. Tanks, sumps, and other collection devices used in conjunction with drip pads, as defined in Rule ~~1200-01-11-.01~~ 0400-12-01-.01(2)(a) and regulated under paragraph (23) of this rule, must meet the requirements of this paragraph.

(b) Assessment of Existing Tank System's Integrity [40 CFR 265.191]

1. For each existing tank system that does not have secondary containment meeting the requirements of subparagraph (d) of this paragraph, the owner or operator must determine that the tank system is not leaking or is unfit for use. Except as provided in part 3 of this subparagraph, the owner or operator must obtain and keep on file at the facility a written assessment reviewed and certified by a qualified Professional Engineer in accordance with Rule ~~1200-01-11-.07~~ 0400-12-01-.07(2)(a)10, that attests to the tank system's integrity by January 12, 1988.

2. This assessment must determine that the tank system is adequately designed and has sufficient structural strength and compatibility with the waste(s) to be stored or treated to ensure that it will not collapse, rupture, or fail. At a minimum, this assessment must consider the following:

(i) Design standard(s), if available, according to which the tank and ancillary equipment were constructed;

(ii) Hazardous characteristics of the waste(s) that have been or will be handled;

(iii) Existing corrosion protection measures;

(iv) Documented age of the tank system, if available (otherwise, an estimate of the age); and

(v) Results of a leak test, internal inspection, or other tank integrity examination such that:

(I) For non-enterable underground tanks, this assessment must consist of a leak test that is capable of taking into account the effects of temperature variations, tank end deflection, vapor pockets, and high water table effects,

(II) For other than non-enterable underground tanks and for ancillary equipment, this assessment must be either a leak test, as described above, or an internal inspection and/or other tank integrity examination certified by a qualified Professional Engineer in accordance with Rule ~~1200-01-11-.07~~ 0400-12-01-.07(2)(a)10 that addresses cracks, leaks, corrosion, and erosion.

(Note: The practices described in the American Petroleum Institute (API) Publication, Guide for Inspection of Refinery Equipment, Chapter XIII, "Atmospheric and Low-Pressure Storage Tanks," 4th edition, 1981, may be used, where applicable, as guidelines in conducting the integrity examination of an other than non-enterable underground tank system.)

3. Tank systems that store or treat materials that become hazardous wastes subsequent to July 14, 1986 must conduct this assessment within 12 months after the date that the waste becomes a hazardous waste.

4. If, as a result of the assessment conducted in accordance with part 1 of this subparagraph, a tank system is found to be leaking or unfit for use, the owner or operator must comply with the requirements of subparagraph (g) of this paragraph.

(c) Design and Installation of New Tank Systems or Components [40 CFR 265.192]

1. Owners or operators of new tank systems or components must ensure that the foundation, structural support, seams, connections, and pressure controls (if applicable) are adequately designed and that the tank system has sufficient structural strength, compatibility with the waste(s) to be stored or treated, and corrosion protection so that it will not collapse, rupture, or fail. The owner or operator must obtain a written assessment reviewed and certified by a qualified Professional Engineer in accordance with Rule ~~1200-01-11-.07~~ 0400-12-01-.07(2)(a)10 attesting that the system has sufficient structural integrity and is acceptable for the storing and treating of hazardous waste. This assessment must include, at a minimum, the following information:

(i) Design standard(s) according to which the tank(s) and ancillary equipment is or will be constructed.

(ii) Hazardous characteristics of the waste(s) to be handled.

(iii) For new tank systems or components in which the external shell of a metal tank or any external metal component of the tank system is or will be in contact with the soil or with water, a determination by a corrosion expert of:

(I) Factors affecting the potential for corrosion, including but not limited to:

I. Soil moisture content;

II. Soil pH;

III. Soil sulfides level;

IV. Soil resistivity;

V. Structure to soil potential;

VI. Influence of nearby underground metal structures (e.g., piping);

VII. Stray electric current; and

VIII. Existing corrosion-protection measures (e.g., coating, cathodic protection); and

(II) The type and degree of external corrosion protection that are needed to ensure the integrity of the tank system during the use of the tank system or component, consisting of one or more of the following:

I. Corrosion-resistant materials of construction such as special alloys or fiberglass-reinforced plastic;

II. Corrosion-resistant coating (such as epoxy or fiberglass) with cathodic protection (e.g., impressed current or sacrificial anodes); and

III. Electrical isolation devices such as insulating joints and flanges.

(Note: The practices described in the National Association of Corrosion Engineers (NACE) standard, "Recommended Practice (RP-02-85) -- Control of External Corrosion on Metallic Buried, Partially Buried, or Submerged Liquid Storage Systems," and the American Petroleum Institute (API) Publication 1632, "Cathodic Protection of Underground Petroleum Storage Tanks and Piping Systems," may be used, where applicable, as guidelines in providing corrosion protection for tank systems.)

(iv) For underground tank system components that are likely to be affected by vehicular traffic, a determination of design or operational measures that will protect the tank system against potential damage; and

(v) Design considerations to ensure that:

(I) Tank foundations will maintain the load of a full tank;

(II) Tank systems will be anchored to prevent flotation or dislodgement where the tank system is placed in a saturated zone, or is located within a seismic fault zone; and

(III) Tank systems will withstand the effects of frost heave.

2. The owner or operator of a new tank system must ensure that proper handling procedures are adhered to in order to prevent damage to the system during installation. Prior to covering, enclosing, or placing a new tank system or component in use, an independent, qualified installation inspector or a qualified Professional Engineer, either of whom is trained and experienced in the proper installation of tank systems, must inspect the system or component for the presence of any of the following items:

(i) Weld breaks;

(ii) Punctures;

(iii) Scrapes of protective coatings;

(iv) Cracks;

(v) Corrosion;

(vi) Other structural damage or inadequate construction or installation.

All discrepancies must be remedied before the tank system is covered, enclosed, or placed in use.

3. New tank systems or components and piping that are placed underground and that are backfilled must be provided with a backfill material that is a noncorrosive, porous, homogeneous substance and that is carefully installed so that the backfill is placed completely around the tank and compacted to ensure that the tank and piping are fully and uniformly supported.

4. All new tanks and ancillary equipment must be tested for tightness prior to being covered, enclosed or placed in use. If a tank system is found not to be tight, all repairs necessary to remedy the leak(s) in the system must be performed prior to the tank system being covered, enclosed, or placed in use.

5. Ancillary equipment must be supported and protected against physical damage and excessive stress due to settlement, vibration, expansion or contraction.

(Note: The piping system installation procedures described in American Petroleum Institute (API) Publication 1615 (November 1979), "Installation of Underground Petroleum Storage Systems," or ANSI Standard B31.3, "Petroleum Refinery System," may be used, where applicable, as guidelines for proper installation of piping systems.)

6. The owner or operator must provide the type and degree of corrosion protection necessary, based on the information provided under subpart 1(iii) of this subparagraph, to ensure the integrity of the tank system during use of the tank system. The installation of a corrosion protection system that is field fabricated must be supervised by an independent corrosion expert to ensure proper installation.

7. The owner or operator must obtain and keep on file at the facility written statements by those persons required to certify the design of the tank system and supervise the installation of the tank system in accordance with the requirements of parts 2 through 6 of this subparagraph to attest that the tank system was properly designed and installed and that repairs, pursuant to parts 2 and 4 of this subparagraph were performed. These written statements must also include the certification statement as required in Rule ~~1200-01-11-.07~~ 0400-12-01-.07(2)(a)10.

(d) Containment and Detection of Releases [40 CFR 265.193]

1. In order to prevent the release of hazardous waste or hazardous constituents to the environment, secondary containment that meets the requirements of this subparagraph must be provided (except as provided in parts 6 and 7 of this subparagraph):

   (i) For all new and existing tank systems or components, prior to their being put into service;

   (ii) For tank systems that store or treat materials that become hazardous wastes, within 2 years of the hazardous waste listing, or when the tank system has reached 15 years of age, whichever comes later.

2. Secondary containment systems must be:

   (i) Designed, installed, and operated to prevent any migration of wastes or accumulated liquid out of the system to the soil, ground water, or surface water at any time during the use of the tank system; and

   (ii) Capable of detecting and collecting releases and accumulated liquids until the collected material is removed.

3. To meet the requirements of part 2 of this subparagraph, secondary containment systems must be at a minimum:

(i) Constructed of or lined with materials that are compatible with the waste(s) to be placed in the tank system and must have sufficient strength and thickness to prevent failure due to pressure gradients (including static head and external hydrological forces), physical contact with the waste to which they are exposed, climatic conditions, the stress of installation, and the stress of daily operation (including stresses from nearby vehicular traffic);

(ii) Placed on a foundation or base capable of providing support to the secondary containment system and resistance to pressure gradients above and below the system and capable of preventing failure due to settlement, compression, or uplift;

(iii) Provided with a leak detection system that is designed and operated so that it will detect the failure of either the primary and secondary containment structure or any release of hazardous waste or accumulated liquid in the secondary containment system within 24 hours, or at the earliest practicable time if the existing detection technology or site conditions will not allow detection of a release within 24 hours;

(iv) Sloped or otherwise designed or operated to drain and remove liquids resulting from leaks, spills, or precipitation. Spilled or leaked waste and accumulated precipitation must be removed from the secondary containment system within 24 hours, or in as timely a manner as is possible to prevent harm to human health or the environment, if removal of the released waste or accumulated precipitation cannot be accomplished within 24 hours.

(Note: If the collected material is a hazardous waste under Rule ~~1200-01-11-.02~~ 0400-12-01-.02, it is subject to management as a hazardous waste in accordance with all applicable requirements of Rule ~~1200-01-11-.03~~ 0400-12-01-.03 through .06. If the collected material is discharged through a point source to waters of the United States, it is subject to the requirements of sections 301, 304, and 402 of the Clean Water Act, as amended. If discharged to Publicly Owned Treatment Works (POTWs), it is subject to the requirements of T.C.A. Section 69-3-101 et seq. and/or section 307 of the Clean Water Act, as amended. If the collected material is released to the environment, it may be subject to the reporting requirements of 40 CFR part 302.)

4. Secondary containment for tanks must include one or more of the following devices:

(i) A liner (external to the tank);

(ii) A vault;

(iii) A double-walled tank; or

(iv) An equivalent device as approved by the Commissioner.

5. In addition to the requirements of parts 2, 3, and 4 of this subparagraph, secondary containment systems must satisfy the following requirements:

(i) External liner systems must be:

(I) Designed or operated to contain 100 percent of the capacity of the largest tank within its boundary;

(II) Designed or operated to prevent run-on or infiltration of precipitation into the secondary containment system unless the collection system has sufficient excess capacity to contain run-on or infiltration. Such additional capacity must be sufficient to contain precipitation from a 25-year, 24-

hour rainfall event;

(III) Free of cracks or gaps; and

(IV) Designed and installed to completely surround the tank and to cover all surrounding earth likely to come into contact with the waste if released from the tank(s) (i.e., capable of preventing lateral as well as vertical migration of the waste).

(ii) Vault systems must be:

(I) Designed or operated to contain 100 percent of the capacity of the largest tank within its boundary;

(II) Designed or operated to prevent run-on or infiltration of precipitation into the secondary containment system unless the collection system has sufficient excess capacity to contain run-on or infiltration. Such additional capacity must be sufficient to contain precipitation from a 25-year, 24-hour rainfall event;

(III) Constructed with chemical-resistant water stops in place at all joints (if any);

(IV) Provided with an impermeable interior coating or lining that is compatible with the stored waste and that will prevent migration of waste into the concrete;

(V) Provided with a means to protect against the formation of and ignition of vapors within the vault, if the waste being stored or treated:

I. Meets the definition of ignitable waste under Rule ~~1200-01-11-.02~~ 0400-12-01-.02(3)(b), or

II. Meets the definition of reactive waste under Rule ~~1200-01-11-.02~~ 0400-12-01-.02(3)(d) and may form an ignitable or explosive vapor; and

(VI) Provided with an exterior moisture barrier or be otherwise designed or operated to prevent migration of moisture into the vault if the vault is subject to hydraulic pressure.

(iii) Double-walled tanks must be:

(I) Designed as an integral structure (i.e., an inner tank within an outer shell) so that any release from the inner tank is contained by the outer shell;

(II) Protected, if constructed of metal, from both corrosion of the primary tank interior and the external surface of the outer shell; and

(III) Provided with a built-in, continuous leak detection system capable of detecting a release within 24 hours or at the earliest practicable time, if the owner or operator can demonstrate to the Commissioner, and the Commissioner concurs, that the existing leak detection technology or site conditions will not allow detection of a release within 24 hours.

(Note: The provisions outlined in the Steel Tank Institute's (STI) "Standard for Dual Wall Underground Steel Storage Tank" may be used as guidelines for aspects of the design of underground steel double-walled tanks.)

6. Ancillary equipment must be provided with full secondary containment (e.g., trench, jacketing, double-walled piping) that meets the requirements of parts 2 and 3 of this subparagraph except for:

(i) Aboveground piping (exclusive of flanges, joints, valves, and connections) that are visually inspected for leaks on a daily basis;

(ii) Welded flanges, welded joints, and welded connections that are visually inspected for leaks on a daily basis;

(iii) Sealless or magnetic coupling pumps and sealless valves, that are visually inspected for leaks on a daily basis; and

(iv) Pressurized aboveground piping systems with automatic shut-off devices (e.g., excess flow check valves, flow metering shutdown devices, loss of pressure actuated shut-off devices) that are visually inspected for leaks on a daily basis.

7. The owner or operator may obtain a variance from the requirements of this paragraph if the Commissioner finds, as a result of a demonstration by the owner or operator, either: that alternative design and operating practices, together with location characteristics, will prevent the migration of hazardous waste or hazardous constituents into the ground water or surface water at least as effectively as secondary containment during the active life of the tank system or that in the event of a release that does migrate to ground water or surface water, no substantial present or potential hazard will be posed to human health or the environment. New underground tank systems may not, per a demonstration in accordance with subpart (ii) of this part, be exempted from the secondary containment requirements of this paragraph. Application for a variance as allowed in this part does not waive compliance with the requirements of this subparagraph for new tank systems.

(i) In deciding whether to grant a variance based on a demonstration of equivalent protection of ground water and surface water, the Commissioner will consider:

(I) The nature and quantity of the waste;

(II) The proposed alternate design and operation;

(III) The hydrogeologic setting of the facility, including the thickness of soils between the tank system and ground water; and

(IV) All other factors that would influence the quality and mobility of the hazardous constituents and the potential for them to migrate to ground water or surface water.

(ii) In deciding whether to grant a variance, based on a demonstration of no substantial present or potential hazard, the Commissioner will consider:

(I) The potential adverse effects on ground water, surface water, and land quality taking into account:

I. The physical and chemical characteristics of the waste in the tank system, including its potential for migration,

II. The hydrogeological characteristics of the facility and surrounding land,

III. The potential for health risks caused by human exposure to waste constituents,

IV. The potential for damage to wildlife, crops, vegetation, and physical structures caused by exposure to waste constituents, and

V. The persistence and permanence of the potential adverse effects;

(II) The potential adverse effects of a release on ground-water quality, taking into account:

I. The quantity and quality of ground water and the direction of ground-water flow,

II. The proximity and withdrawal rates of water in the area,

III. The current and future uses of ground water in the area, and

IV. The existing quality of ground water, including other sources of contamination and their cumulative impact on the ground-water quality;

(III) The potential adverse effects of a release on surface water quality, taking into account:

I. The quantity and quality of ground water and the direction of ground-water flow,

II. The patterns of rainfall in the region,

III. The proximity of the tank system to surface waters,

IV. The current and future uses of surface waters in the area and any water quality standards established for those surface waters, and

V. The existing quality of surface water, including other sources of contamination and the cumulative impact on surface-water quality; and

(IV) The potential adverse effects of a release on the land surrounding the tank system, taking into account:

I. The patterns of rainfall in the region, and

II. The current and future uses of the surrounding land.

(iii) The owner or operator of a tank system, for which a variance from secondary containment had been granted in accordance with the requirements of subpart (i) of this part, at which a release of hazardous waste has occurred from the primary tank system but has not migrated beyond the zone of engineering control (as established in the variance), must:

(I) Comply with the requirements of subparagraph (g) of this paragraph, except part 4; and

(II) Decontaminate or remove contaminated soil to the extent necessary to:

I. Enable the tank system, for which the variance was granted, to resume operation with the capability for the detection of and

response to releases at least equivalent to the capability it had prior to the release, and

II. Prevent the migration of hazardous waste or hazardous constituents to ground water or surface water; and

(III) If contaminated soil cannot be removed or decontaminated in accordance with item (II) of this subpart, comply with the requirements of part (h)2 of this paragraph;

(iv) The owner or operator of a tank system, for which a variance from secondary containment had been granted in accordance with the requirements of subpart (i) of this part, at which a release of hazardous waste has occurred from the primary tank system and has migrated beyond the zone of engineering control (as established in the variance), must:

(I) Comply with the requirements of parts (g)1 through 4 of this paragraph; and

(II) Prevent the migration of hazardous waste or hazardous constituents to ground water or surface water, if possible, and decontaminate or remove contaminated soil. If contaminated soil cannot be decontaminated or removed, or if ground water has been contaminated, the owner or operator must comply with the requirements of part (h)2 of this paragraph; and

(III) If repairing, replacing, or reinstalling the tank system, provide secondary containment in accordance with the requirements of parts 1 through 6 of this subparagraph or reapply for a variance from secondary containment and meet the requirements for new tank systems in subparagraph (c) of this paragraph if the tank system is replaced. The owner or operator must comply with these requirements even if contaminated soil can be decontaminated or removed, and ground water or surface water has not been contaminated.

8. The following procedures must be followed in order to request a variance from secondary containment:

(i) The Commissioner must be notified in writing by the owner or operator that he intends to conduct and submit a demonstration for a variance from secondary containment as allowed in part 7 of this subparagraph according to the following schedule:

(I) For existing tank systems, at least 24 months prior to the date that secondary containment must be provided in accordance with part 1 of this subparagraph; and

(II) For new tank systems, at least 30 days prior to entering into a contract for installation of the tank system.

(ii) As part of the notification, the owner or operator must also submit to the Commissioner a description of the steps necessary to conduct the demonstration and a timetable for completing each of the steps. The demonstration must address each of the factors listed in subparts 7(i) or 7(ii) of this subparagraph.

(iii) The demonstration for a variance must be completed and submitted to the Commissioner within 180 days after notifying the Commissioner of intent to conduct the demonstration.

(iv) The Commissioner will inform the public, through a newspaper notice, of the availability of the demonstration for a variance. The owner of operator shall place the notice, as provided for in Rule ~~1200-01-11-.07~~ 0400-12-01-.07(7)(e) and as prepared and required by the Commissioner, in a daily or weekly local newspaper of general circulation and shall provide at least 30 days from the date of the notice for the public to review and comment on the demonstration for a variance. The Commissioner also will hold a public hearing, in response to a request or at his own discretion, whenever such a hearing might clarify one or more issues concerning the demonstration for a variance. Public notice of the hearing will be given by the owner or operator, as prepared and required by the Commissioner, at least 30 days prior to the date of the hearing and may be given at the same time as notice of the opportunity for the public to review and comment on the demonstration. These two notices may be combined. The owner or operator shall provide proof of the completion of all notice requirements to the Commissioner within ten (10) days following conclusion of the public notice procedures.

(v) The Commissioner will approve or disapprove the request for a variance within 90 days of receipt of the demonstration from the owner or operator and will notify in writing the owner or operator and each person who submitted written comments or requested notice of the variance decision. If the demonstration for a variance is incomplete or does not include sufficient information, the 90-day time period will begin when the Commissioner receives a complete demonstration, including all information necessary to make a final determination. If the public comment period in subpart ~~8~~(iv) of this ~~subparagraph~~ part is extended, the 90-day time period will be similarly extended.

9. All tank systems, until such time as secondary containment meeting the requirements of this subparagraph is provided, must comply with the following:

(i) For non-enterable underground tanks, a leak test that meets the requirements of subpart (b)2(v) of this paragraph must be conducted at least annually;

(ii) For other than non-enterable underground tanks and for all ancillary equipment, the owner or operator must conduct either a leak test as in subpart (i) of this part or an internal inspection or other tank integrity examination by a qualified Professional Engineer that addresses cracks, leaks, corrosion or erosion at least annually. The owner or operator must remove the stored waste from the tank, if necessary, to allow the condition of all internal tank surfaces to be assessed.

(Note: The practices described in the American Petroleum Institute (API) Publication Guide for Inspection of Refining Equipment, Chapter XIII, "Atmospheric and Low Pressure Storage Tanks," 4th edition, 1981, may be used, when applicable, as guidelines for assessing the overall condition of the tank system.)

(iii) The owner or operator must maintain on file at the facility a record of the results of the assessments conducted in accordance with subparts (i) through (iii) of this part.

(iv) If a tank system or component is found to be leaking or unfit-for-use as a result of the leak test or assessment in subparts (i) through (iii) of this part, the owner or operator must comply with the requirements of subparagraph (g) of this paragraph.

(e) General Operating Requirements [40 CFR 265.194]

1. Hazardous wastes or treatment reagents must not be placed in a tank system if they could cause the tank, its ancillary equipment, or the secondary containment system to rupture, leak, corrode, or otherwise fail.

2. The owner or operator must use appropriate controls and practices to prevent spills and overflows from tank or secondary containment systems. These include at a minimum:

   (i) Spill prevention controls (e.g., check valves, dry disconnect couplings);

   (ii) Overfill prevention controls (e.g., level sensing devices, high level alarms, automatic feed cutoff, or bypass to a standby tank); and

   (iii) Maintenance of sufficient freeboard in uncovered tanks to prevent overtopping by wave or wind action or by precipitation.

3. The owner or operator must comply with the requirements of subparagraph (g) of this paragraph if a leak or spill occurs in the tank system.

(f) Inspections [40 CFR 265.195]

1. The owner or operator must inspect, where present, at least once each operating day, data gathered from monitoring and leak detection equipment (e.g., pressure or temperature gauges, monitoring wells) to ensure that the tank system is being operated according to its design.

   (Note: Part (2)(f)3 of this rule requires the owner or operator to remedy any deterioration or malfunction he finds. Subparagraph ~~(10)~~ (g) of this ~~Rule~~ paragraph requires the owner or operator to notify the Commissioner within 24 hours of confirming a release. Also, 40 CFR part 302 may require the owner or operator to notify the National Response Center of a release and Section 304 of Title III of the Superfund Amendments and Reauthorization Act of 1986 may require notification of the Tennessee Emergency Management Agency.)

2. Except as noted under part 3 of this subparagraph, the owner or operator must inspect at least once each operating day:

   (i) Overfill/spill control equipment (e.g., waste-feed cutoff systems, bypass systems, and drainage systems) to ensure that it is in good working order;

   (ii) Above ground portions of the tank system, if any, to detect corrosion or release of waste; and

   (iii) The construction materials and the area immediately surrounding the externally accessible portion of the tank system, including the secondary containment system (e.g., dikes) to detect erosion or signs of releases of hazardous waste (e.g., wet spots, dead vegetation).

3. Owners or operators of tank systems that either use leak detection equipment to alert facility personnel to leaks, or implement established workplace practices to ensure leaks are promptly identified, must inspect at least weekly those areas described in subparts 2(i) through (iii) of this subparagraph. Use of the alternate inspection schedule must be documented in the facility's operating record. This documentation must include a description of the established workplace practices at the facility.

4. (Reserved) ~~Performance Track member facilities may inspect on a less frequent basis, upon approval by the Regional Administrator, but must inspect at least once each month. To apply for a less than weekly inspection frequency, the Performance Track member facility must follow the procedures described in subpart (2)(f)2(v) of this rule.~~

5. Ancillary equipment that is not provided with secondary containment, as described in subparts (10)(d)6(i) through (iv) of this rule, must be inspected at least once each operating day.

6. The owner or operator must inspect cathodic protection systems, if present, according to, at a minimum, the following schedule to ensure that they are functioning properly:

(i) The proper operation of the cathodic protection system must be confirmed within six months after initial installation, and annually thereafter; and

(ii) All sources of impressed current must be inspected and/or tested, as appropriate, at least bimonthly (i.e., every other month).

(Note: The practices described in the National Association of Corrosion Engineers (NACE) standard, "Recommended Practice (RP-02-85) -- Control of External Corrosion on Metallic Buried, Partially Buried, or Submerged Liquid Storage Systems," and the American Petroleum Institute (API) Publication 1632, "Cathodic Protection of Underground Petroleum Storage Tanks and Piping Systems," may be used, where applicable, as guidelines in maintaining and inspecting cathodic protection systems.)

7. The owner or operator must document in the operating record of the facility an inspection of those items in parts ~~(1) and (2)~~ 1 and 2 of this subparagraph.

(g) Response to Leaks or Spills and Disposition of Leaking or Unfit-for-Use Tank Systems [40 CFR 265.196]

A tank system or secondary containment system from which there has been a leak or spill, or which is unfit for use, must be removed from service immediately, and the owner or operator must satisfy the following requirements:

1. Cessation of Use; Prevent Flow or Addition of Wastes

The owner or operator must immediately stop the flow of hazardous waste into the tank system or secondary containment system and inspect the system to determine the cause of the release.

2. Removal of Waste from Tank System or Secondary Containment System

(i) If the release was from the tank system, the owner or operator must, within 24 hours after detection of the leak or, if the owner or operator demonstrates that that is not possible, at the earliest practicable time remove as much of the waste as is necessary to prevent further release of hazardous waste to the environment and to allow inspection and repair of the tank system to be performed.

(ii) If the release was to a secondary containment system, all released materials must be removed within 24 hours or in as timely a manner as is possible to prevent harm to human health and the environment.

3. Containment of Visible Releases to the Environment

The owner or operator must immediately conduct a visual inspection of the release and, based upon that inspection:

(i) Prevent further migration of the leak or spill to soils or surface water; and

(ii) Remove, and properly dispose of, any visible contamination of the soil or surface water.

4. Notifications, Reports

(i) Any release to the environment, except as provided in subpart 4 (ii) of this ~~subparagraph~~ part, must be reported to the Commissioner within 24 hours of

detection. If the release has been reported to the Tennessee Emergency Management Agency or to the National Response Center pursuant to 40 CFR Part 302, that report will satisfy this requirement.

(ii) A leak or spill of hazardous waste that is:

(I) Less than or equal to a quantity of one (1) pound, and

(II) Immediately contained and cleaned-up is exempted from the requirements of this part.

(iii) Within 30 days of detection of a release to the environment, a report containing the following information must be submitted to the Division Director:

(I) Likely route of migration of the release;

(II) Characteristics of the surrounding soil (soil composition, geology, hydrogeology, climate);

(III) Results of any monitoring or sampling conducted in connection with the release, (if available). If sampling or monitoring data relating to the release are not available within 30 days, these data must be submitted to the Division Director as soon as they become available;

(IV) Proximity to downgradient drinking water, surface water, and population areas; and

(V) Description of response actions taken or planned.

5. Provision of Secondary Containment, Repair, or Closure

(i) Unless the owner or operator satisfies the requirements of subparts (ii) through (iv) of this part, the tank system must be closed in accordance with subparagraph (h) of this paragraph.

(ii) If the cause of the release was a spill that has not damaged the integrity of the system, the owner/operator may return the system to service as soon as the released waste is removed and repairs, if necessary, are made.

(iii) If the cause of the release was a leak from the primary tank system into the secondary containment system, the system must be repaired prior to returning the tank system to service.

(iv) If the source of the release was a leak to the environment from a component of a tank system without secondary containment, the owner/operator must provide the component of the system from which the leak occurred with secondary containment that satisfies the requirements of subparagraph (d) of this paragraph before it can be returned to service, unless the source of the leak is an aboveground portion of a tank system. If the source is an aboveground component that can be inspected visually, the component must be repaired and may be returned to service without secondary containment as long as the requirements of part 6 of this subparagraph are satisfied. If a component is replaced to comply with the requirements of this subparagraph, that component must satisfy the requirements for new tank systems or components in subparagraphs (c) and (d) of this paragraph. Additionally, if a leak has occurred in any portion of a tank system component that is not readily accessible for visual inspection (e.g., the bottom of an inground or onground tank), the entire component must be provided with secondary containment in accordance with subparagraph (d) of this paragraph prior to being returned to use.

6. Certification of Major Repairs

If the owner or operator has repaired a tank system in accordance with part 5 of this subparagraph, and the repair has been extensive (e.g., installation of an internal liner; repair of a ruptured primary containment or secondary containment vessel), the tank system must not be returned to service unless the owner/operator has obtained a certification by a qualified Professional Engineer in accordance with Rule ~~1200-01-11-.07~~ 0400-12-01-.07(2)(a)10 that the repaired system is capable of handling hazardous wastes without release for the intended life of the system. This certification is to be placed in the operating record and maintained until closure of the facility.

(Note: The Commissioner may, on the basis of any information received that there is or has been a release of hazardous waste or hazardous constituents into the environment, issue an order under T.C.A. §68-212-111 requiring corrective action or such other response as deemed necessary to protect human health or the environment.)

(Note: See part (2)(f)3 of this rule for the requirements necessary to remedy a failure. Also, 40 CFR part 302 requires the owner or operator to notify the National Response Center of a release of any "reportable quantity" and Section 304 of Title III of the Superfund Amendment and Reauthorization Act of 1986 may require notification of the Tennessee Emergency Management Agency.)

(h) Closure and Post-closure Care [40 CFR 265.197]

1. At closure of a tank system, the owner or operator must remove or decontaminate all waste residues, contaminated containment system components (liners, etc.), contaminated soils, and structures and equipment contaminated with waste, and manage them as hazardous waste, unless Rule ~~1200-01-11-.02~~ 0400-12-01-.02(1)(c)4 applies. The closure plan, closure activities, cost estimates for closure, and financial responsibility for tank systems must meet all of the requirements specified in paragraphs (7) and (8) of this rule.

2. If the owner or operator demonstrates that not all contaminated soils can be practicably removed or decontaminated as required in part 1 of this subparagraph, then the owner or operator must close the tank system and perform post-closure care in accordance with the closure and post-closure care requirements that apply to landfills (subparagraph (14)(k) of this rule). In addition, for the purposes of closure, post-closure, and financial responsibility, such a tank system is then considered to be a landfill, and the owner or operator must meet all of the requirements for landfills specified in paragraphs (7) and (8) of this rule.

3. If an owner or operator has a tank system which does not have secondary containment that meets the requirements of parts (d)2 through ~~(d)~~6 of this paragraph and which is not exempt from the secondary containment requirements in accordance with part (d)7 of this paragraph; then,

   (i) The closure plan for the tank system must include both a plan for complying with part 1 of this subparagraph and a contingent plan for complying with part 2 of this subparagraph.

   (ii) A contingent post-closure plan for complying with part 2 of this subparagraph must be prepared and submitted as part of the permit application.

   (iii) The cost estimates calculated for closure and post-closure care must reflect the costs of complying with the contingent closure plan and the contingent post-closure plan, if these costs are greater than the costs of complying with the closure plan prepared for the expected closure under part 1 of this subparagraph.

(iv) Financial assurance must be based on the cost estimates in subpart (iii) of this part.

(v) For the purposes of the contingent closure and post-closure plans, such a tank system is considered to be a landfill, and the contingent plans must meet all of the closure, post-closure, and financial responsibility requirements for landfills under paragraphs (7) and (8) of this rule.

(i) Special Requirements for Ignitable or Reactive Wastes [40 CFR 265.198]

1. Ignitable or reactive waste must not be placed in a tank system, unless:

(i) The waste is treated, rendered, or mixed before or immediately after placement in the tank system so that:

(I) The resulting waste, mixture, or dissolved material no longer meets the definition of ignitable or reactive waste under Rule ~~1200-01-11-.02~~ 0400-12-01-.02(3)(b) or (d); and

(II) Part (2)(h)2 of this rule is complied with; or

(ii) The waste is stored or treated in such a way that it is protected from any material or conditions that may cause the waste to ignite or react; or

(iii) The tank system is used solely for emergencies.

2. The owner or operator of a facility where ignitable or reactive waste is stored or treated in tanks must comply with the requirements for the maintenance of protective distances between the waste management area and any public ways, streets, alleys, or an adjoining property line that can be built upon as required in Tables 2-1 through 2-6 of the National Fire Protection Association's "Flammable and Combustible Liquids Code," (1977 or 1981) (see Rule ~~1200-01-11-.01~~ 0400-12-01-.01(2)(b)).

(j) Special Requirements for Incompatible Wastes [40 CFR 265.199]

~~(i)~~1. Incompatible wastes, or incompatible waste and materials, must not be placed in the same tank system, unless part (2)(h)2 of this rule is complied with.

~~(ii)~~2. Hazardous waste must not be placed in a tank system that has not been decontaminated and that previously held an incompatible waste or material, unless part (2)(h)2 of this rule is complied with.

(k) Waste Analysis and Trial Tests [40 CFR 265.200]

In addition to performing the waste analysis required by subparagraph (2)(d) of this rule, the owner or operator must, whenever a tank system is to be used to treat chemically or to store a hazardous waste that is substantially different from waste previously treated or stored in that tank system; or treat chemically a hazardous waste with a substantially different process than any previously used in that tank system:

1. Conduct waste analyses and trial treatment or storage tests (e.g., bench-scale or pilot-plant scale tests); or

2. Obtain written, documented information on similar waste under similar operating conditions to show that the proposed treatment or storage will meet the requirements of part (e)1 of this paragraph.

(Note: Subparagraph (2)(d) of this rule requires the waste analysis plan to include analyses needed to comply with subparagraphs (i) and (j) of this paragraph. Subparagraph (5)(d) of this

rule requires the owner or operator to place the results from each waste analysis and trial test, or the documented information, in the operating record of the facility.)

(l) Special Requirements for Generators of Between 100 and 1,000 kg/mo that Accumulate Hazardous Waste in Tanks [40 CFR 265.201]

1. The requirements of this subparagraph apply to small quantity generators of more than 100 kg but less than 1,000 kg of hazardous waste in a calendar month, that accumulate hazardous waste in tanks for less than 180 days (or 270 days if the generator must ship the waste greater than 200 miles), and do not accumulate over 6,000 kg on-site at any time.

2. Generators of between 100 and 1,000 kg/mo hazardous waste must comply with the following general operating requirements:

   (i) Treatment or storage of hazardous waste in tanks must comply with part (2)(h)2 of this rule.

   (ii) Hazardous wastes or treatment reagents must not be placed in a tank if they could cause the tank or its inner liner to rupture, leak, corrode, or otherwise fail before the end of its intended life.

   (iii) Uncovered tanks must be operated to ensure at least 60 centimeters (2 feet) of freeboard, unless the tank is equipped with a containment structure (e.g., dike or trench), a drainage control system, or a diversion structure (e.g., standby tank) with a capacity that equals or exceeds the volume of the top 60 centimeters (2 feet) of the tank.

   (iv) Where hazardous waste is continuously fed into a tank, the tank must be equipped with a means to stop this inflow (e.g., waste feed cutoff system or by-pass system to a stand-by tank).

   (Note: These systems are intended to be used in the event of a leak or overflow from the tank due to a system failure (e.g., a malfunction in the treatment process, a crack in the tank, etc.).)

3. Except as noted in part 4 of this subparagraph, generators who accumulate between 100 and 1,000 kg/mo hazardous waste in tanks must inspect, where present:

   (i) Discharge control equipment (e.g., waste feed cutoff systems, by-pass systems, and drainage systems) at least once each operating day, to ensure that it is in good working order;

   (ii) Data gathered from monitoring equipment (e.g., pressure and temperature gauges) at least once each operating day to ensure that the tank is being operated according to its design;

   (iii) The level of waste in the tank at least once each operating day to ensure compliance with subpart 2(iii) of this subparagraph;

   (iv) The construction materials of the tank at least weekly to detect corrosion or leaking of fixtures or seams; and

   (v) The construction materials of, and the area immediately surrounding, discharge confinement structures (e.g., dikes) at least weekly to detect erosion or obvious signs of leakage (e.g., wet spots or dead vegetation).

   (Note: As required by part (2)(f)3 of this rule, the owner or operator must remedy any deterioration or malfunction he finds.)

4. Generators who accumulate between 100 and 1,000 kg/mo of hazardous waste in tanks or tank systems that have full secondary containment and that either use leak detection equipment to alert facility personnel to leaks, or implement established workplace practices to ensure leaks are promptly identified, must inspect at least weekly, where applicable, the areas identified in subparts 3(i) through (v) of this subparagraph. Use of the alternate inspection schedule must be documented in the facility's operating record. This documentation must include a description of the established workplace practices at the facility.

5. (Reserved) ~~Performance Track member facilities may inspect on a less frequent basis, upon approval by the Regional Administrator, but must inspect at least once each month. To apply for a less than weekly inspection frequency, the Performance Track member facility must follow the procedures described in subparts (2)(f)2(v) of this rule.~~

6. Generators of between 100 and 1,000 kg/mo accumulating hazardous waste in tanks must, upon closure of the facility, remove all hazardous waste from tanks, discharge control equipment, and discharge confinement structures.

(Note: At closure, as throughout the operating period, unless the owner or operator can demonstrate, in accordance with Rule ~~1200-01-11-.02~~ 0400-12-01-.02(1)(c)3 or 4, that any solid waste removed from his tank is not a hazardous waste, the owner or operator becomes a generator of hazardous waste and must manage it in accordance with all applicable requirements of Rules ~~1200-01-11-.03~~ 0400-12-01-.03, .04, and ~~.05~~ this rule.)

7. Generators of between 100 and 1,000 kg/mo must comply with the following special requirements for ignitable or reactive waste:

(i) Ignitable or reactive waste must not be placed in a tank, unless:

(I) The waste is treated, rendered, or mixed before or immediately after placement in a tank so that

~~(A)~~ I. the resulting waste, mixture, or dissolution of material no longer meets the definition of ignitable or reactive waste under Rule ~~1200-01-11-.02~~ 0400-12-01-.02(3)(b) or (d), and

~~(B)~~ II. part (2)(h)2 of this rule is complied with; or

(II) The waste is stored or treated in such a way that it is protected from any material or conditions that may cause the waste to ignite or react; or

(III) The tank is used solely for emergencies.

(ii) The owner or operator of a facility which treats or stores ignitable or reactive waste in covered tanks must comply with the buffer zone requirements for tanks contained in Tables 2-1 through 2-6 of the National Fire Protection Association's "Flammable and Combustible Liquids Code," (1977 or 1981) (listed in Rule ~~1200-01-11-.01~~ 0400-12-01-.01(2)(b)).

8. Generators of between 100 and 1,000 kg/mo must comply with the following special requirements for incompatible wastes:

(i) Incompatible wastes, or incompatible wastes and materials, (see paragraph (53) Appendix V of this rule for examples) must not be placed in the same tank, unless part (2)(h)2 of this rule is complied with.

(ii) Hazardous waste must not be placed in an unwashed tank which previously held an incompatible waste or material, unless part (2)(h)2 of this rule is complied

with.

(m) Air Emission Standards [40 CFR 265.202]

The owner or operator shall manage all hazardous waste placed in a tank in accordance with the applicable requirements of paragraphs (27), (28), and (29) of this rule.

(11) Surface Impoundments [40 CFR 265 Subpart K]

(a) Applicability [40 CFR 265.220]

The regulations in this paragraph apply to owners and operators of facilities that use surface impoundments to treat, store, or dispose of hazardous waste, except as subparagraph (1)(b) of this rule provides otherwise.

(b) Design and Operating Requirements [40 CFR 265.221]

1. The owner or operator of each new surface impoundment unit, each lateral expansion of a surface impoundment unit, and each replacement of an existing surface impoundment unit must install two or more liners and a leachate collection and removal system above and between the liners, and operate the leachate collection and removal system, in accordance with Rule ~~1200-01-11-.06~~ 0400-12-01-.06(11)(b)3, unless exempted under Rule ~~1200-01-11-.06~~ 0400-12-01-.06(11)(b)4, 5, or 6.

2. The owner or operator of each unit referred to in part 1 of this subparagraph must notify the Commissioner at least sixty days prior to receiving waste. The owner or operator of each facility submitting notice must file a part B application within six months of the receipt of such notice.

3. The owner or operator of any replacement surface impoundment unit is exempt from part 1 of this subparagraph if:

(i) The existing unit was constructed in compliance with the design standards of Rule ~~1200-01-11-.06~~ 0400-12-01-.06(11)(b)3; and

(ii) There is no reason to believe that the liner is not functioning as designed.

4. The double liner requirement set forth in part 1 of this subparagraph may be waived by the Commissioner for any monofill, if:

(i) The monofill contains only hazardous wastes from foundry furnace emission controls or metal casting molding sand, and such wastes do not contain constituents which would render the wastes hazardous for reasons other than the Toxicity Characteristic in Rule ~~1200-01-11-.02~~ 0400-12-01-.02(3)(e), with Hazardous Waste Codes D004 through D017; and

(ii) (I) I. The monofill has at least one liner for which there is no evidence that such liner is leaking. For the purposes of this paragraph the term "liner" means a liner designed, constructed, installed, and operated to prevent hazardous waste from passing into the liner at any time during the active life of the facility, or a liner designed, constructed, installed, and operated to prevent hazardous waste from migrating beyond the liner to adjacent subsurface soil, ground water, or surface water at any time during the active life of the facility. In the case of any surface impoundment which has been exempted from the requirements of part 1 of this subparagraph on the basis of a liner designed, constructed, installed, and operated to prevent hazardous waste from passing beyond the liner, at the closure of such

impoundment the owner or operator must remove or decontaminate all waste residues, all contaminated liner material, and contaminated soil to the extent practicable. If all contaminated soil is not removed or decontaminated, the owner or operator of such impoundment must comply with appropriate post-closure requirements, including but not limited to ground-water monitoring and corrective action;

II. The monofill is located more than one-quarter mile from an "underground source of drinking water" (as that term is defined in Rule ~~1200-01-11-.01~~ 0400-12-01-.01(2)(a)); and

III. The monofill is in compliance with generally applicable ground-water monitoring requirements for facilities with permits under T.C.A. Section 68-212-108 of the Act; or

(II) The owner or operator demonstrates that the monofill is located, designed and operated so as to assure that there will be no migration of any hazardous constituent into ground water or surface water at any future time.

5. In the case of any unit in which the liner and leachate collection system has been installed pursuant to the requirements of part 1 of this subparagraph and in good faith compliance with part 1 of this subparagraph and with guidance documents governing liners and leachate collection systems under part 1 of this subparagraph, no liner or leachate collection system which is different from that which was so installed pursuant to part 1 of this subparagraph will be required for such unit by the Commissioner when issuing the first permit to such facility, except that the Commissioner will not be precluded from requiring installation of a new liner when the Commissioner has reason to believe that any liner installed pursuant to the requirements of part 1 of this subparagraph is leaking.

6. A surface impoundment must maintain enough freeboard to prevent any overtopping of the dike by overfilling, wave action, or a storm. Except as provided in part 2 of this subparagraph, there must be at least 60 centimeters (two feet) of freeboard.

7. A freeboard level less than 60 centimeters (two feet) may be maintained if the owner or operator obtains certification by a qualified engineer that alternate design features or operating plans will, to the best of his knowledge and opinion, prevent overtopping of the dike. The certification, along with a written identification of alternate design features or operating plans preventing overtopping, must be maintained at the facility.

8. Surface impoundments that are newly subject to T.C.A. §68-212-108 due to the promulgation of additional listings or characteristics for the identification of hazardous waste must be in compliance with parts 1, 3, and 4 of this subparagraph not later than 48 months after the promulgation of the additional listing or characteristic. This compliance period shall not be cut short as the result of the promulgation of land disposal prohibitions under Rule ~~1200-01-11-.10~~ 0400-12-01-.10 or the granting of an extension to the effective date of a prohibition pursuant to Rule ~~1200-01-11-.10~~ 0400-12-01-.10(1)(e), within this 48-month period.

(c) Action Leakage Rate [40 CFR 265.222]

1. The owner or operator of surface impoundment units subject to part (b)1 of this paragraph must submit a proposed action leakage rate to the Commissioner when submitting the notice required under part (b)2 of this paragraph. Within 60 days of receipt of the notification, the Commissioner will: Establish an action leakage rate, either as proposed by the owner or operator or modified using the criteria in this subparagraph; or extend the review period for up to 30 days. If no action is taken by the Commissioner

before the original 60 or extended 90 day review periods, the action leakage rate will be approved as proposed by the owner or operator.

2. The Commissioner shall approve an action leakage rate for surface impoundment units subject to part (b)1 of this paragraph. The action leakage rate is the maximum design flow rate that the leak detection system (LDS) can remove without the fluid head on the bottom liner exceeding 1 foot. The action leakage rate must include an adequate safety margin to allow for uncertainties in the design (e.g., slope, hydraulic conductivity, thickness of drainage material), construction, operation, and location of the LDS, waste and leachate characteristics, likelihood and amounts of other sources of liquids in the LDS, and proposed response actions (e.g., the action leakage rate must consider decreases in the flow capacity of the system over time resulting from siltation and clogging, rib layover and creep of synthetic components of the system, overburden pressures, etc.).

3. To determine if the action leakage rate has been exceeded, the owner or operator must convert the weekly or monthly flow rate from the monitoring data obtained under part (h)2 of this paragraph, to an average daily flow rate (gallons per acre per day) for each sump. Unless the Commissioner approves a different calculation, the average daily flow rate for each sump must be calculated weekly during the active life and closure period, and if the unit closes in accordance with subpart (j)1(ii) of this paragraph, monthly during the post-closure care period when monthly monitoring is required under part (h)2 of this paragraph.

(d) Containment System [40 CFR 265.223]

All earthen dikes must have a protective cover, such as grass, shale, or rock, to minimize wind and water erosion and to preserve their structural integrity.

~~(Editorial Note: At 57 FR 3492, Jan. 29, 1992 the Environmental Protection Agency added §265.223, effective July 29, 1992. Since a §265.223 already exists, both sections appear above. An agency correction will be published in the Federal Register at a later date.)~~

(e) Response Actions [40 CFR 265.224]

1. The owner or operator of surface impoundment units subject to part (b)1 of this paragraph must develop and keep on site until closure of the facility a response action plan. The response action plan must set forth the actions to be taken if the action leakage rate has been exceeded. At a minimum, the response action plan must describe the actions specified in part 2 of this subparagraph.

2. If the flow rate into the leak detection system exceeds the action leakage rate for any sump, the owner or operator must:

   (i) Notify the Commissioner in writing of the exceedance within 7 days of the determination;

   (ii) Submit a preliminary written assessment to the Commissioner within 14 days of the determination, as to the amount of liquids, likely sources of liquids, possible location, size, and cause of any leaks, and short-term actions taken and planned;

   (iii) Determine to the extent practicable the location, size, and cause of any leak;

   (iv) Determine whether waste receipt should cease or be curtailed, whether any waste should be removed from the unit for inspection, repairs, or controls, and whether or not the unit should be closed;

   (v) Determine any other short-term and longer-term actions to be taken to mitigate or stop any leaks; and

(vi) Within 30 days after the notification that the action leakage rate has been exceeded, submit to the Commissioner the results of the analyses specified in subparts ~~2~~ (iii), (iv), and (v) of this ~~subparagraph~~ part; the results of actions taken, and actions planned. Monthly thereafter, as long as the flow rate in the leak detection system exceeds the action leakage rate, the owner or operator must submit to the Commissioner a report summarizing the results of any remedial actions taken and actions planned.

3. To make the leak and/or remediation determinations in subparts 2(iii), (iv), and (v) of this subparagraph, the owner or operator must:

(i) (I) Assess the source of liquids and amounts of liquids by source,

(II) Conduct a fingerprint, hazardous constituent, or other analysis of the liquids in the leak detection system to identify the source of liquids and possible location of any leaks, and the hazard and mobility of the liquid; and

(III) Assess the seriousness of any leaks in terms of potential for escaping into the environment; or

(ii) Document why such assessments are not needed.

(f) (RESERVED)

(g) Waste Analysis and Trial Tests [40 CFR 265.225]

1. In addition to the waste analyses required by subparagraph (2)(d) of this rule, whenever a surface impoundment is to be used to:

(i) Chemically treat a hazardous waste which is substantially different from waste previously treated in that impoundment; or

(ii) Chemically treat hazardous waste with a substantially different process than any previously used in that impoundment; the owner or operator must, before treating the different waste or using the different process:

(I) Conduct waste analyses and trial treatment tests (e.g., bench scale or pilot plant scale tests); or

(II) Obtain written, documented information on similar treatment of similar waste under similar operating conditions; to show that this treatment will comply with part (2)(h)2 of this rule.

(Comment: As required by subparagraph (2)(d) of this rule, the waste analysis plan must include analyses needed to comply with subparagraphs (k) and (l) of this paragraph. As required by subparagraph (5)(d) of this rule, the owner or operator must place the results from each waste analysis and trial test, or the documented information, in the operating record of the facility.)

(h) Monitoring and Inspection [40 CFR 265.226]

1. The owner or operator must inspect:

(i) The freeboard level at least once each operating day to ensure compliance with subparagraph (c) of this paragraph, and

(ii) The surface impoundment, including dikes and vegetation surrounding the dike,

at least once a week to detect any leaks, deterioration, or failures in the impoundment.

2. (i) An owner or operator required to have a leak detection system under part (b)1 of this paragraph must record the amount of liquids removed from each leak detection system sump at least once each week during the active life and closure period.

(ii) After the final cover is installed, the amount of liquids removed from each leak detection system sump must be recorded at least monthly. If the liquid level in the sump stays below the pump operating level for two consecutive months, the amount of liquids in the sumps must be recorded at least quarterly. If the liquid level in the sump stays below the pump operating level for two consecutive quarters, the amount of liquids in the sumps must be recorded at least semi-annually. If at any time during the post-closure care period the pump operating level is exceeded at units on quarterly or semi-annual recording schedules, the owner or operator must return to monthly recording of amounts of liquids removed from each sump until the liquid level again stays below the pump operating level for two consecutive months.

(iii) "Pump operating level" is a liquid level proposed by the owner or operator and approved by the Commissioner based on pump activation level, sump dimensions, and level that avoids backup into the drainage layer and minimizes head in the sump. The timing for submission and approval of the proposed "pump operating level" will be in accordance with part (c)1 of this paragraph.

(Comment: As required by part (2)(f)3 of this rule, the owner or operator must remedy any deterioration or malfunction he finds.)

(i) (RESERVED) [40 CFR 265.227]

(j) Closure and Post-closure Care [40 CFR 265.228]

1. At closure, the owner or operator must:

(i) Remove or decontaminate all waste residues, contaminated containment system components (liners, etc.), contaminated subsoils, and structures and equipment contaminated with waste and leachate, and manage them as hazardous waste unless Rule ~~1200-01-11-.02~~ 0400-12-01-.02(1)(c)4 applies; or

(ii) Close the impoundment and provide post-closure care for a landfill under paragraph (7) and subparagraph (14)(k) of this rule, including the following:

(I) Eliminate free liquids by removing liquid wastes or solidifying the remaining wastes and waste residues;

(II) Stabilize remaining wastes to a bearing capacity sufficient to support the final cover; and

(III) Cover the surface impoundment with a final cover designed and constructed to:

I. Provide long-term minimization of the migration of liquids through the closed impoundment;

II. Function with minimum maintenance;

III. Promote drainage and minimize erosion or abrasion of the cover;

IV. Accommodate settling and subsidence so that the cover's integrity is maintained; and

V. Have a permeability less than or equal to the permeability of any bottom liner system or natural subsoils present.

2. In addition to the requirements of paragraph (7) and subparagraph (14)(k) of this rule, during the post-closure care period, the owner or operator of a surface impoundment in which wastes, waste residues, or contaminated materials remain after closure in accordance with the provisions of subpart 1(ii) of this subparagraph must:

(i) Maintain the integrity and effectiveness of the final cover, including making repairs to the cover as necessary to correct the effects of settling, subsidence, erosion, or other events;

(ii) Maintain and monitor the leak detection system in accordance with item (11)(b)3(ii)(IV) and subpart (11)(b)3(iii) of Rule ~~1200-01-11-.06~~ 0400-12-01-.06 and part (h)2 of this paragraph and comply with all other applicable leak detection system requirements of this rule;

(iii) Maintain and monitor the ground-water monitoring system and comply with all other applicable requirements of paragraph (6) of this rule; and

(iv) Prevent run-on and run-off from eroding or otherwise damaging the final cover.

(k) Special Requirements for Ignitable or Reactive Waste [40 CFR 265.229]

Ignitable or reactive waste must not be placed in a surface impoundment, unless the waste and impoundment satisfy all applicable requirements of Rule ~~1200-01-11-.10~~ 0400-12-01-.10, and:

1. The waste is treated, rendered, or mixed before or immediately after placement in the impoundment so that:

(i) The resulting waste, mixture, or dissolution of material no longer meets the definition of ignitable or reactive waste under subparagraph (3)(b) or (3)(d) of Rule ~~1200-01-11-.02~~ 0400-12-01-.02; and

(ii) Part (2)(h)2 of this rule is complied with; or

2. (i) The waste is managed in such a way that it is protected from any material or conditions which may cause it to ignite or react; and

(ii) The owner or operator obtains a certification from a qualified chemist or engineer that, to the best of his knowledge and opinion, the design features or operating plans of the facility will prevent ignition or reaction; and

(iii) The certification and the basis for it are maintained at the facility; or

3. The surface impoundment is used solely for emergencies.

(l) Special Requirements for Incompatible Wastes [40 CFR 265.230]

Incompatible wastes, or incompatible wastes and materials, (see paragraph (53) Appendix V of this rule for examples) must not be placed in the same surface impoundment, unless part (2)(h)2 of this rule is complied with.

(m) Air Emission Standards [40 CFR 265.231]

The owner or operator shall manage all hazardous waste placed in a surface impoundment in

accordance with the applicable requirements of paragraphs (28) and (29) of this rule.

(12) Waste Piles [40 CFR 265 Subpart L]

(a) Applicability [40 CFR 265.250]

The regulations in this paragraph apply to owners and operators of facilities that treat or store hazardous waste in piles, except as paragraph (1) of this rule provides otherwise. Alternatively, a pile of hazardous waste may be managed as a landfill under paragraph (14) of this rule.

(b) Protection from Wind [40 CFR 265.251]

The owner or operator of a pile containing hazardous waste which could be subject to dispersal by wind must cover or otherwise manage the pile so that wind dispersal is controlled.

(c) Waste Analysis [40 CFR 265.252]

In addition to the waste analyses required by subparagraph (2)(d) of this rule, the owner or operator must analyze a representative sample of waste from each incoming movement before adding the waste to any existing pile, unless

1. The only wastes the facility receives which are amenable to piling are compatible with each other, or

2. The waste received is compatible with the waste in the pile to which it is to be added. The analysis conducted must be capable of differentiating between the types of hazardous waste the owner or operator places in piles, so that mixing of incompatible waste does not inadvertently occur. The analysis must include a visual comparison of color and texture.

(Comment: As required by subparagraph (2)(d) of this rule, the waste analysis plan must include analyses needed to comply with subparagraphs (g) and (h) of this ~~Rule~~ paragraph. As required by subparagraph (5)(d) of this rule, the owner or operator must place the results of this analysis in the operating record of the facility.)

(d) Containment [40 CFR 265.253]

If leachate or run-off from a pile is a hazardous waste, then either:

1. (i) The pile must be placed on an impermeable base that is compatible with the waste under the conditions of treatment or storage;

(ii) The owner or operator must design, construct, operate, and maintain a run-on control system capable of preventing flow onto the active portion of the pile during peak discharge from at least a 25-year storm;

(iii) The owner or operator must design, construct, operate, and maintain a run-off management system to collect and control at least the water volume resulting from a 24-hour, 25-year storm; and

(iv) Collection and holding facilities (e.g., tanks or basins) associated with run-on and run-off control systems must be emptied or otherwise managed expeditiously to maintain design capacity of the system; or

2. (i) The pile must be protected from precipitation and run-on by some other means; and

(ii) No liquids or wastes containing free liquids may be placed in the pile.

(Comment: If collected leachate or run-off is discharged through a point source to waters of the United States, it is subject to the requirements of T.C.A. Section 69-3-101 et seq. and/or section 402 of the Clean Water Act, as amended.)

(e) Design and Operating Requirements [40 CFR 265.254]

The owner or operator of each new waste pile on which construction commences after January 29, 1992, each lateral expansion of a waste pile unit on which construction commences after July 29, 1992, and each such replacement of an existing waste pile unit that is to commence reuse after July 29, 1992 must install two or more liners and a leachate collection and removal system above and between such liners, and operate the leachate collection and removal systems, in accordance with Rule ~~1200-01-11-.06~~ 0400-12-01-.06(12)(b)3, unless exempted under Rule ~~1200-01-11-.06~~ 0400-12-01-.06(12)(b)4, 5, or 6; and must comply with the procedures of part (11)(b)2 of this rule. "Construction commences" is as defined in Rule ~~1200-01-11-.01~~ 0400-12-01-.01(2)(a) under "existing facility".

(f) Action Leakage Rates [40 CFR 265.255]

1. The owner or operator of waste pile units subject to subparagraph (e) of this paragraph must submit a proposed action leakage rate to the Commissioner when submitting the notice required under subparagraph (e) of this paragraph. Within 60 days of receipt of the notification, the Commissioner will: Establish an action leakage rate, either as proposed by the owner or operator or modified using the criteria in this subparagraph; or extend the review period for up to 30 days. If no action is taken by the Commissioner before the original 60 or extended 90 day review periods, the action leakage rate will be approved as proposed by the owner or operator.

2. The Commissioner shall approve an action leakage rate for waste pile units subject to subparagraph (e) of this paragraph. The action leakage rate is the maximum design flow rate that the leak detection system (LDS) can remove without the fluid head on the bottom liner exceeding 1 foot. The action leakage rate must include an adequate safety margin to allow for uncertainties in the design (e.g., slope, hydraulic conductivity, thickness of drainage material), construction, operation, and location of the LDS, waste and leachate characteristics, likelihood and amounts of other sources of liquids in the LDS, and proposed response actions (e.g., the action leakage rate must consider decreases in the flow capacity of the system over time resulting from siltation and clogging, rib layover and creep of synthetic components of the system, overburden pressures, etc.).

3. To determine if the action leakage rate has been exceeded, the owner or operator must convert the weekly flow rate from the monitoring data obtained under subparagraph (k) of this paragraph, to an average daily flow rate (gallons per acre per day) for each sump. Unless the Commissioner approves a different calculation, the average daily flow rate for each sump must be calculated weekly during the active life and closure period.

(g) Special Requirements for Ignitable or Reactive Waste [40 CFR 265.256]

1. Ignitable or reactive waste must not be placed in a pile unless the waste and pile satisfy all applicable requirements of Rule ~~1200-01-11-.10~~ 0400-12-01-.10, and:

(i) Addition of the waste to an existing pile

(I) results in the waste or mixture no longer meeting the definition of ignitable or reactive waste under Rule ~~1200-01-11-.02~~ 0400-12-01-.02(3)(b) or (d), and

(II) complies with part (2)(h)2 of this rule; or

(ii) The waste is managed in such a way that it is protected from any material or

conditions which may cause it to ignite or react.

(h) Special Requirements for Incompatible Wastes [40 CFR 265.257]

1. Incompatible wastes, or incompatible wastes and materials, (see paragraph (53), Appendix V of this rule for examples) must not be placed in the same pile, unless part (2)(h)2 of this rule is complied with.

2. A pile of hazardous waste that is incompatible with any waste or other material stored nearby in other containers, piles, open tanks, or surface impoundments must be separated from the other materials, or protected from them by means of a dike, berm, wall, or other device.

(Comment: The purpose of this is to prevent fires, explosions, gaseous emissions, leaching, or other discharge of hazardous waste or hazardous waste constituents which could result from the contact or mixing of incompatible wastes or materials.)

3. Hazardous waste must not be piled on the same area where incompatible wastes or materials were previously piled, unless that area has been decontaminated sufficiently to ensure compliance with part (2)(h)2 of this rule.

(i) Closure and Post-closure Care [40 CFR 265.258]

1. At closure, the owner or operator must remove or decontaminate all waste residues, contaminated containment system components (liners, etc.), contaminated subsoils, and structures and equipment contaminated with waste and leachate, and manage them as hazardous waste unless Rule ~~1200-01-11-.02~~ 0400-12-01-.02(1)(c)4 applies; or

2. If, after removing or decontaminating all residues and making all reasonable efforts to effect removal or decontamination of contaminated components, subsoils, structures, and equipment as required in part 1 of this subparagraph, the owner or operator finds that not all contaminated subsoils can be practicably removed or decontaminated, he must close the facility and perform post-closure care in accordance with the closure and post-closure requirements that apply to landfills (subparagraph (14)(k) of this rule).

(j) Response Actions [40 CFR 265.259]

1. The owner or operator of waste pile units subject to subparagraph (e) of this paragraph must develop and keep on-site until closure of the facility a response action plan. The response action plan must set forth the actions to be taken if the action leakage rate has been exceeded. At a minimum, the response action plan must describe the actions specified in part 2 of this subparagraph.

2. If the flow rate into the leak determination system exceeds the action leakage rate for any sump, the owner or operator must:

(i) Notify the Commissioner in writing of the exceedance within 7 days of the determination;

(ii) Submit a preliminary written assessment to the Commissioner within 14 days of the determination, as to the amount of liquids, likely sources of liquids, possible location, size, and cause of any leaks, and short-term actions taken and planned;

(iii) Determine to the extent practicable the location, size, and cause of any leak;

(iv) Determine whether waste receipts should cease or be curtailed, whether any waste should be removed from the unit for inspection, repairs, or controls, and whether or not the unit should be closed;

(v) Determine any other short-term and longer-term actions to be taken to mitigate or stop any leaks; and

(vi) Within 30 days after the notification that the action leakage rate has been exceeded, submit to the Commissioner the results of the analyses specified in subparts 2 (iii), (iv), and (v) of this ~~subparagraph~~ part, the results of actions taken, and actions planned. Monthly thereafter, as long as the flow rate in the leak detection system exceeds the action leakage rate, the owner or operator must submit to the Commissioner a report summarizing the results of any remedial actions taken and actions planned.

3. To make the leak and/or remediation determinations in subparts 2(iii), (iv), and (v) of this subparagraph, the owner or operator must:

(i) (I) Assess the source of liquids and amounts of liquids by source,

(II) Conduct a fingerprint, hazardous constituent, or other analysis of the liquids in the leak detection system to identify the source of liquids and possible location of any leaks, and the hazard and mobility of the liquid; and

(III) Assess the seriousness of any leaks in terms of potential for escaping into the environment; or

(ii) Document why such assessments are not needed.

(k) Monitoring and Inspection [40 CFR 265.260]

An owner or operator required to have a leak detection system under subparagraph (e) of this paragraph must record the amount of liquids removed from each leak detection system sump at least once each week during the active life and closure period.

(13) Land Treatment [40 CFR 265 Subpart M]

(a) Applicability

The regulations in this subpart apply to owners and operators of hazardous waste land treatment facilities, except as subparagraph (1) of this rule provides otherwise.

(b) (RESERVED) [40 CFR 265.271]

(c) General Operating Requirements [40 CFR 265.272]

1. Hazardous waste must not be placed in or on a land treatment facility unless the waste can be made less hazardous or nonhazardous by degradation, transformation, or immobilization processes occurring in or on the soil.

2. The owner or operator must design, construct, operate, and maintain a run-on control system capable of preventing flow onto the active portions of the facility during peak discharge from at least a 25-year storm.

3. The owner or operator must design, construct, operate, and maintain a run-off management system capable of collecting and controlling a water volume at least equivalent to a 24-hour, 25-year storm.

4. Collection and holding facilities (e.g., tanks or basins) associated with run-on and run-off control systems must be emptied or otherwise managed expeditiously after storms to maintain design capacity of the system.

5. If the treatment zone contains particulate matter which may be subject to wind dispersal, the owner or operator must manage the unit to control wind dispersal.

(d) Waste Analysis [40 CFR 265.273]

In addition to the waste analyses required by subparagraph (2)(d) of this rule, before placing a hazardous waste in or on a land treatment facility, the owner or operator must:

1. Determine the concentrations in the waste of any substances which equal or exceed the maximum concentrations contained in Table 1 of Rule ~~1200-01-11-.02~~ 0400-12-01-.02(3)(e) that cause a waste to exhibit the Toxicity Characteristic;

2. For any waste listed in Rule ~~1200-01-11-.02~~ 0400-12-01-.02(4), determine the concentrations of any substances which caused the waste to be listed as a hazardous waste; and

3. If food chain crops are grown, determine the concentrations in the waste of each of the following constituents: arsenic, cadmium, lead, and mercury, unless the owner or operator has written, documented data that show that the constituent is not present.

(Comment: Rule ~~1200-01-11-.02~~ 0400-12-01-.02 specifies the substances for which a waste is listed as a hazardous waste. As required by subparagraph (2)(d) of this rule, the waste analysis plan must include analyses needed to comply with subparagraphs (l) and (m) of this paragraph. As required by subparagraph (5)(d) of this rule, the owner or operator must place the results from each waste analysis, or the documented information, in the operating record of the facility.)

(e) (RESERVED) [40 CFR 265.274]

(f) (RESERVED) [40 CFR 265.275]

(g) Food Chain Crops [40 CFR 265.276]

1. An owner or operator of a hazardous waste land treatment facility on which food chain crops are being grown, or have been grown and will be grown in the future, must notify the Commissioner within 60 days after the effective date of this part.

(Comment: The growth of food chain crops at a facility which has never before been used for this purpose is a significant change in process under Rule ~~1200-01-11-.07~~ 0400-12-01-.07(3)(c)3. Owners or operators of such land treatment facilities who propose to grow food chain crops after the effective date of this rule must comply with Rule ~~1200-01-11-.07~~ 0400-12-01-.07(3)(c)3.)

2. (i) Food chain crops must not be grown on the treated area of a hazardous waste land treatment facility unless the owner or operator can demonstrate, based on field testing, that any arsenic, lead, mercury, or other constituents identified under part (d)2 of this paragraph:

(I) Will not be transferred to the food portion of the crop by plant uptake or direct contact, and will not otherwise be ingested by food chain animals (e.g., by grazing); or

(II) Will not occur in greater concentrations in the crops grown on the land treatment facility than in the same crops grown on untreated soils under similar conditions in the same region.

(ii) The information necessary to make the demonstration required by subpart (i) of this part must be kept at the facility and must, at a minimum:

(I) Be based on tests for the specific waste and application rates being used

at the facility; and

(II) Include descriptions of crop and soil characteristics, sample selection criteria, sample size determination, analytical methods, and statistical procedures.

3. Food chain crops must not be grown on a land treatment facility receiving waste that contains cadmium unless all requirements of items (i)(I) through (III) of this part or all requirements of items (ii)(I) through (IV) of this part are met.

(i) (I) The pH of the waste and soil mixture is 6.5 or greater at the time of each waste application, except for waste containing cadmium at concentrations of 2 mg/kg (dry weight) or less;

(II) The annual application of cadmium from waste does not exceed 0.5 kilograms per hectare (kg/ha) on land used for production of tobacco, leafy vegetables, or root crops grown for human consumption. For other food chain crops, the annual cadmium application rate does not exceed:

Time Period	Annual Cd Application Rate (kg/ha)
Present to June 30, 1984	2.0
July 1, 1984 to December 31, 1986	1.25
Beginning January 1, 1987	0.5

(III) The cumulative application of cadmium from waste does not exceed the levels in either subitem I or II of this item.

I.

Soil Caption Exchange Capacity (meq/100g)	Maximum Cumulative Application (kg/ha)	
	Background Soil pH Less than 6.5	Background Soil pH Greater than 6.5
Less than 5	5	5
5 to 15	5	10
Greater than 15	5	20

II. For soils with a background pH of less than 6.5, the cumulative cadmium application rate does not exceed the levels below: provided, that the pH of the waste and soil mixture is adjusted to and maintained at 6.5 or greater whenever food chain crops are grown.

Soil Caption Exchange Capacity (meq/100g)	Maximum Cumulative Application (kg/ha)
Less than 5	5
5 to 15	10
Greater than 15	20

(ii) (I) The only food chain crop produced is animal feed.

(II) The pH of the waste and soil mixture is 6.5 or greater at the time of waste application or at the time the crop is planted, whichever occurs later, and this pH level is maintained whenever food chain crops are grown.

(III) There is a facility operating plan which demonstrates how the animal

feed will be distributed to preclude ingestion by humans. The facility operating plan describes the measures to be taken to safeguard against possible health hazards from cadmium entering the food chain, which may result from alternative land uses.

(IV) Future property owners are notified by a stipulation in the land record or property deed which states that the property has received waste at high cadmium application rates and that food chain crops must not be grown except in compliance with ~~paragraph (c)(2) of this section~~ this subpart

(Comment: As required by subparagraph (5)(d) of this rule, if an owner or operator grows food chain crops on his land treatment facility, he must place the information developed in this ~~section~~ subparagraph in the operating record of the facility.)

(h) (RESERVED) [40 CFR 265.277]

(i) Unsaturated Zone (Zone of Aeration) Monitoring [40 CFR 265.278]

1. The owner or operator must have in writing, and must implement, an unsaturated zone monitoring plan which is designed to:

   (i) Detect the vertical migration of hazardous waste and hazardous waste constituents under the active portion of the land treatment facility, and

   (ii) Provide information on the background concentrations of the hazardous waste and hazardous waste constituents in similar but untreated soils nearby; this background monitoring must be conducted before or in conjunction with the monitoring required under subpart (i) of this part.

2. The unsaturated zone monitoring plan must include, at a minimum:

   (i) Soil monitoring using soil cores, and

   (ii) Soil-pore water monitoring using devices such as lysimeters.

3. To comply with subpart 1(i) of this subparagraph, the owner or operator must demonstrate in his unsaturated zone monitoring plan that:

   (i) The depth at which soil and soil-pore water samples are to be taken is below the depth to which the waste is incorporated into the soil;

   (ii) The number of soil and soil-pore water samples to be taken is based on the variability of:

      (I) The hazardous waste constituents (as identified in part (d)1 and 2 of this paragraph) in the waste and in the soil; and

      (II) The soil type(s); and

   (iii) The frequency and timing of soil and soil-pore water sampling is based on the frequency, time, and rate of waste application, proximity to ground water, and soil permeability.

4. The owner or operator must keep at the facility his unsaturated zone monitoring plan and the rationale used in developing this plan.

5. The owner or operator must analyze the soil and soil-pore water samples for the hazardous waste constituents that were found in the waste during the waste analysis under part (d)1 and 2 of this paragraph.

(Comment: As required by subparagraph (5)(d) of this rule, all data and information developed by the owner or operator under this subparagraph must be placed in the operating record of the facility.)

(j) Recordkeeping [40 CFR 265.279]

The owner or operator must include hazardous waste application dates and rates in the operating record required under subparagraph (5)(d) of this rule.

(k) Closure and Post-closure [40 CFR 265.280]

1. In the closure plan under subparagraph (7)(c) of this rule and the post-closure plan under subparagraph (7)(i) of this rule, the owner or operator must address the following objectives and indicate how they will be achieved:

   (i) Control of the migration of hazardous waste and hazardous waste constituents from the treated area into the ground water;

   (ii) Control of the release of contaminated run-off from the facility into surface water;

   (iii) Control of the release of airborne particulate contaminants caused by wind erosion; and

   (iv) Compliance with subparagraph (g) of this paragraph concerning the growth of food-chain crops.

2. The owner or operator must consider at least the following factors in addressing the closure and post-closure care objectives of part 1 of this subparagraph:

   (i) Type and amount of hazardous waste and hazardous waste constituents applied to the land treatment facility;

   (ii) The mobility and the expected rate of migration of the hazardous waste and hazardous waste constituents;

   (iii) Site location, topography, and surrounding land use, with respect to the potential effects of pollutant migration (e.g., proximity to ground water, surface water and drinking water sources);

   (iv) Climate, including amount, frequency, and pH of precipitation;

   (v) Geological and soil profiles and surface and subsurface hydrology of the site, and soil characteristics, including cation exchange capacity, total organic carbon, and pH;

   (vi) Unsaturated zone monitoring information obtained under subparagraph (i) of this paragraph; and

   (vii) Type, concentration, and depth of migration of hazardous waste constituents in the soil as compared to their background concentrations.

3. The owner or operator must consider at least the following methods in addressing the closure and post-closure care objectives of part 1 of this subparagraph:

   (i) Removal of contaminated soils;

   (ii) Placement of a final cover, considering:

(I) Functions of the cover (e.g., infiltration control, erosion and run-off control, and wind erosion control); and

(II) Characteristics of the cover, including material, final surface contours, thickness, porosity and permeability, slope, length of run of slope, and type of vegetation on the cover; and

(iii) Monitoring of ground water.

4. In addition to the requirements of paragraph (7) of this rule, during the closure period the owner or operator of a land treatment facility must:

(i) Continue unsaturated zone monitoring in a manner and frequency specified in the closure plan, except that soil pore liquid monitoring may be terminated 90 days after the last application of waste to the treatment zone;

(ii) Maintain the run-on control system required under part (c)2 of this paragraph;

(iii) Maintain the run-off management system required under part (c)3 of this paragraph; and

(iv) Control wind dispersal of particulate matter which may be subject to wind dispersal.

5. For the purpose of complying with subparagraph (7)(f) of this rule, when closure is completed the owner or operator may submit to the Commissioner certification both by the owner or operator and by an independent qualified soil scientist, in lieu of a qualified Professional Engineer, that the facility has been closed in accordance with the specifications in the approved closure plan.

6. In addition to the requirements of subparagraph (7)(h) of this rule, during the post-closure care period the owner or operator of a land treatment unit must:

(i) Continue soil-core monitoring by collecting and analyzing samples in a manner and frequency specified in the post-closure plan;

(ii) Restrict access to the unit as appropriate for its post-closure use;

(iii) Assure that growth of food chain crops complies with subparagraph (g) of this paragraph; and

(iv) Control wind dispersal of hazardous waste.

(l) Special Requirements for Ignitable or Reactive Waste [40 CFR 265.281]

The owner or operator must not apply ignitable or reactive waste to the treatment zone unless the waste and treatment zone meet all applicable requirements of Rule ~~1200-01-11-.10~~ 0400-12-01-.10, and:

1. The waste is immediately incorporated into the soil so that:

(i) The resulting waste, mixture, or dissolution of material no longer meets the definition of ignitable or reactive waste under Rule ~~1200-01-11-.02~~ 0400-12-01-.02(3)(b) or (d); and

(ii) Part (2)(h)2 of this rule is complied with; or

2. The waste is managed in such a way that it is protected from any material or conditions which may cause it to ignite or react.

(m) Special Requirements for Incompatible Wastes [40 CFR 265.282]

Incompatible wastes, or incompatible wastes and materials (see paragraph (53), Appendix V of this rule for examples), must not be placed in the same land treatment area, unless part (2)(h)2 of this rule is complied with.

(14) Landfills [40 CFR 265 Subpart N]

(a) Applicability [40 CFR 265.300]

The regulations in this subpart apply to owners and operators of facilities that dispose of hazardous waste in landfills, except as subparagraph (1) of this rule provides otherwise. A waste pile used as a disposal facility is a landfill and is governed by this paragraph.

(b) Design and Operating Requirements [40 CFR 265.301]

1. The owner or operator of each new landfill unit, each lateral expansion of a landfill unit, and each replacement of an existing landfill unit must install two or more liners and a leachate collection and removal system above and between such liners, and operate the leachate collection and removal system, in accordance with part (14)(b)3 of Rule 0400-12-01-.06, unless exempted under part (14)(b)4, 5, or 6 of Rule ~~1200-01-11-.06~~ 0400-12-01-.06(~~14~~).

2. The owner or operator of each unit referred to in part 1 of this subparagraph must notify the Commissioner at least sixty days prior to receiving waste. The owner or operator of each facility submitting notice must file a part B application within six months of the receipt of such notice.

3. The owner or operator of any replacement landfill unit is exempt from part 1 of this subparagraph if:

(i) The existing unit was constructed in compliance with the design standards of this paragraph; and

(ii) There is no reason to believe that the liner is not functioning as designed.

4. The double liner requirement set forth in part 1 of this subparagraph may be waived by the Commissioner for any monofill, if:

(i) The monofill contains only hazardous wastes from foundry furnace emission controls or metal casting molding sand, and such wastes do not contain constituents which would render the wastes hazardous for reasons other than the Toxicity Characteristic in Rule ~~1200-01-11-.02~~ 0400-12-01-.02(3)(d), with Hazardous Waste Codes D004 through D017; and

(ii) (I) I. The monofill has at least one liner for which there is no evidence that such liner is leaking;

II. The monofill is located more than one-quarter mile from an underground source of drinking water (as that term is defined in Rule ~~1200-01-11-.01~~ 0400-12-01-.01(2)(a)); and

III. The monofill is in compliance with generally applicable ground-water monitoring requirements for facilities with permits under T.C.A. Section 68-212-108 of the Act; or

(II) The owner or operator demonstrates that the monofill is located, designed and operated so as to assure that there will be no migration of

any hazardous constituent into ground water or surface water at any future time.

5. In the case of any unit in which the liner and leachate collection system has been installed pursuant to the requirements of part 1 of this subparagraph and in good faith compliance with that part and with guidance documents governing liners and leachate collection systems under that part, no liner or leachate collection system which is different from that which was so installed pursuant to part 1 of this subparagraph will be required for such unit by the Commissioner when issuing the first permit to such facility, except that the Commissioner will not be precluded from requiring installation of a new liner when the Commissioner has reason to believe that any liner installed pursuant to the requirements of part 1 of this subparagraph is leaking.

6. The owner or operator must design, construct, operate, and maintain a run-on control system capable of preventing flow onto the active portion of the landfill during peak discharge from at least a 25-year storm.

7. The owner or operator must design, construct, operate and maintain a run-off management system to collect and control at least the water volume resulting from a 24-hour, 25-year storm.

8. Collection and holding facilities (e.g., tanks or basins) associated with run-on and run-off control systems must be emptied or otherwise managed expeditiously after storms to maintain design capacity of the system.

9. The owner or operator of a landfill containing hazardous waste which is subject to dispersal by wind must cover or otherwise manage the landfill so that wind dispersal of the hazardous waste is controlled.

(Comment: As required by subparagraph (2)(d) of this rule, the waste analysis plan must include analyses needed to comply with subparagraphs (m), (n), and (o) of this paragraph. As required by subparagraph (5)(d) of this rule, the owner or operator must place the results of these analyses in the operating record of the facility.)

(c) Action Leakage Rate [40 CFR 265.302]

1. The owner or operator of landfill units subject to part (b)1 of this paragraph must submit a proposed action leakage rate to the Commissioner when submitting the notice required under part (b)2 of this paragraph. Within 60 days of receipt of the notification, the Commissioner will: Establish an action leakage rate, either as proposed by the owner or operator or modified using the criteria in this subparagraph; or extend the review period for up to 30 days. If no action is taken by the Commissioner before the original 60 or extended 90 day review periods, the action leakage rate will be approved as proposed by the owner or operator.

2. The Commissioner shall approve an action leakage rate for landfill units subject to part (b)1 of this paragraph. The action leakage rate is the maximum design flow rate that the leak detection system (LDS) can remove without the fluid head on the bottom liner exceeding 1 foot. The action leakage rate must include an adequate safety margin to allow for uncertainties in the design (e.g., slope, hydraulic conductivity, thickness of drainage material), construction, operation, and location of the LDS, waste and leachate characteristics, likelihood and amounts of other sources of liquids in the LDS, and proposed response actions (e.g., the action leakage rate must consider decreases in the flow capacity of the system over time resulting from siltation and clogging, rib layover and creep of synthetic components of the system, overburden pressures, etc.).

3. To determine if the action leakage rate has been exceeded, the owner or operator must convert the weekly or monthly flow rate from the monitoring data obtained under subparagraph (e) of this paragraph to an average daily flow rate (gallons per acre per

day) for each sump. Unless the Commissioner approves a different calculation, the average daily flow rate for each sump must be calculated weekly during the active life and closure period, and monthly during the post-closure care period when monthly monitoring is required under part (e)2 of this paragraph.

(d) Response Actions [40 CFR 265.303]

1. The owner or operator of landfill units subject to part (b)1 of this paragraph must develop and keep on-site until closure of the facility a response action plan. The response action plan must set forth the actions to be taken if the action leakage rate has been exceeded. At a minimum, the response action plan must describe the actions specified in part 2 of this subparagraph.

2. If the flow rate into the leak detection system exceeds the action leakage rate for any sump, the owner or operator must:

   (i) Notify the Commissioner in writing of the exceedance within 7 days of the determination;

   (ii) Submit a preliminary written assessment to the Commissioner within 14 days of the determination, as to the amount of liquids, likely sources of liquids, possible location, size, and cause of any leaks, and short-term actions taken and planned;

   (iii) Determine to the extent practicable the location, size, and cause of any leak;

   (iv) Determine whether waste receipt should cease or be curtailed, whether any waste should be removed from the unit for inspection, repairs, or controls, and whether or not the unit should be closed;

   (v) Determine any other short-term and longer-term actions to be taken to mitigate or stop any leaks; and

   (vi) Within 30 days after the notification that the action leakage rate has been exceeded, submit to the Commissioner the results of the analyses specified in subparts ~~2~~ (iii), (iv), and (v) of this ~~subparagraph~~ part, the results of actions taken, and actions planned. Monthly thereafter, as long as the flow rate in the leak detection system exceeds the action leakage rate, the owner or operator must submit to the Commissioner a report summarizing the results of any remedial actions taken and actions planned.

3. To make the leak and/or remediation determinations in subparts 2(iii), (iv), and (v) of this subparagraph, the owner or operator must:

   (i) (I) Assess the source of liquids and amounts of liquids by source;

   (II) Conduct a fingerprint, hazardous constituent, or other analyses of the liquids in the leak detection system to identify the source of liquids and possible location of any leaks, and the hazard and mobility of the liquid; and

   (III) Assess the seriousness of any leaks in terms of potential for escaping into the environment; or

   (ii) Document why such assessments are not needed.

(e) Monitoring and Inspection [40 CFR 265.304]

1. An owner or operator required to have a leak detection system under part (b)1 of this paragraph must record the amount of liquids removed from each leak detection system

sump at least once each week during the active life and closure period.

2. After the final cover is installed, the amount of liquids removed from each leak detection system sump must be recorded at least monthly. If the liquid level in the sump stays below the pump operating level for two consecutive months, the amount of liquids in the sumps must be recorded at least quarterly. If the liquid level in the sump stays below the pump operating level for two consecutive quarters, the amount of liquids in the sumps must be recorded at least semi-annually. If at any time during the post-closure care period the pump operating level is exceeded at units on quarterly or semi-annual recording schedules, the owner or operator must return to monthly recording of amounts of liquids removed from each sump until the liquid level again stays below the pump operating level for two consecutive months.

3. "Pump operating level" is a liquid level proposed by the owner or operator and approved by the Commissioner based on pump activation level, sump dimensions, and level that avoids backup into the drainage layer and minimizes head in the sump. The timing for submission and approval of the proposed "pump operating level" will be in accordance with part (c)1 of this paragraph.

(f) through (i) (RESERVED) [40 CFR 265.305-265.308]

(j) Surveying and Recordkeeping [40 CFR 265.309]

The owner or operator of a landfill must maintain the following items in the operating record required in subparagraph (5)(d) of this rule:

1. On a map, the exact location and dimensions, including depth, of each cell with respect to permanently surveyed benchmarks; and

2. The contents of each cell and the approximate location of each hazardous waste type within each cell.

(k) Closure and Post-closure Care [40 CFR 265.310]

1. At final closure of the landfill or upon closure of any cell, the owner or operator must cover the landfill or cell with a final cover designed and constructed to:

(i) Provide long-term minimization of migration of liquids through the closed landfill;

(ii) Function with minimum maintenance;

(iii) Promote drainage and minimize erosion or abrasion of the cover;

(iv) Accommodate settling and subsidence so that the cover's integrity is maintained; and

(v) Have a permeability less than or equal to the permeability of any bottom liner system or natural subsoils present.

2. After final closure, the owner or operator must comply with all post-closure requirements contained in subparagraphs (7)(h) through (k) of this rule including maintenance and monitoring throughout the post-closure care period. The owner or operator must:

(i) Maintain the integrity and effectiveness of the final cover, including making repairs to the cover as necessary to correct the effects of settling, subsidence, erosion, or other events;

(ii) Maintain and monitor the leak detection system in accordance with item (14)(b)3(iii)(IV) and subpart (14)(b)3(iv) of Rule ~~1200-01-11-.06~~ 0400-12-01-

.06~~(14)(b)~~ and subparagraph (e) of this paragraph, and comply with all other applicable leak detection system requirements of this rule;

(iii) Maintain and monitor the ground-water monitoring system and comply with all other applicable requirements of paragraph (6) of this rule;

(iv) Prevent run-on and run-off from eroding or otherwise damaging the final cover; and

(v) Protect and maintain surveyed benchmarks used in complying with subparagraph (j) of this paragraph.

(l) (RESERVED) [40 CFR 265.311]

(m) Special Requirements for Ignitable or Reactive Waste [40 CFR 265.312]

1. Except as provided in part 2 of this subparagraph, and in subparagraph (q) of this paragraph, ignitable or reactive waste must not be placed in a landfill, unless the waste and landfill meets all applicable requirements of Rule ~~1200-01-11-.10~~ 0400-12-01-.10, and:

(i) The resulting waste, mixture, or dissolution of material no longer meets the definition of ignitable or reactive waste under paragraphs (3)(b) or (d) of Rule ~~1200-01-11-.02~~ 0400-12-01-.02~~(3)~~; and

(ii) Part (2)(h)2 of this rule is complied with.

2. Except for prohibited wastes which remain subject to treatment standards in paragraph (3) of Rule ~~1200-01-11-.10~~ 0400-12-01-.10, ignitable wastes in containers may be landfilled without meeting the requirements of part 1 of this subparagraph, provided that the wastes are disposed of in such a way that they are protected from any material or conditions which may cause them to ignite or react. At a minimum, ignitable wastes must be disposed of in non-leaking containers which are carefully handled and placed so as to avoid heat, sparks, rupture, or any other condition that might cause ignition or reaction of the wastes; must be covered daily with soil or other non-combustible material to minimize the potential for ignition or reaction of the wastes; and must not be disposed of in cells that contain or will contain other wastes which may generate heat sufficient to cause ignition of the waste.

(n) Special Requirements for Incompatible Wastes [40 CFR 265.313]

Incompatible wastes, or incompatible wastes and materials, (see paragraph (53) Appendix V of this rule for examples) must not be placed in the same landfill cell, unless part (2)(h)2 of this rule is complied with.

(o) Special Requirements for Bulk and Containerized Liquids [40 CFR 265.314]

(Note: Implementation of this provision remains with EPA.)

1. The placement of bulk or non-containerized liquid hazardous waste or hazardous waste containing free liquids (whether or not sorbents have been added) in any landfill is prohibited.

(Note: Implementations of this provision between May 8, 1985 and February 2, 1986 remains with EPA.)

2. Containers holding free liquids must not be placed in a landfill unless:

(i) All free-standing liquid

(I) has been removed by decanting, or other methods;

(II) has been mixed with sorbent or solidified so that free-standing liquid is no longer observed; or

(III) had been otherwise eliminated; or

(ii) The container is very small, such as an ampule; or

(iii) The container is designed to hold free liquids for use other than storage, such as a battery or capacitor; or

(iv) The container is a lab pack as defined in subparagraph (q) of this paragraph and is disposed of in accordance with that subparagraph.

3. To demonstrate the absence or presence of free liquids in either a containerized or a bulk waste, the following test must be used: Method 9095B (Paint Filter Liquids Test) as described in "Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods," EPA Publication SW-846. (See 40 CFR 260.11; Rule ~~1200-01-11-.01~~ 0400-12-01-.01(2)(b)1.)

4. The date for compliance with part 1 of this subparagraph is November 19, 1981. The date for compliance with part 3 of this subparagraph is March 22, 1982.

5. Sorbents used to treat free liquids to be disposed of in landfills must be nonbiodegradable. Nonbiodegradable sorbents are: materials listed or described in subpart (i) of this part; materials that pass one of the tests in subpart (ii) of this part; or materials that are determined by EPA to be nonbiodegradable through the Part 260 petition process.

(i) Nonbiodegradable Sorbents

(I) Inorganic minerals, other inorganic materials, and elemental carbon (e.g., aluminosilicates, clays, smectites, Fuller's earth, bentonite, calcium bentonite, montmorillonite, calcined montmorillonite, kaolinite, micas (illite), vermiculites, zeolites; calcium carbonate (organic free limestone); oxides/hydroxides, alumina, lime, silica (sand), diatomaceous earth; perlite (volcanic glass); expanded volcanic rock; volcanic ash; cement kiln dust; fly ash; rice hull ash; activated charcoal/activated carbon); or

(II) High molecular weight synthetic polymers (e.g., polyethylene, high density polyethylene (HDPE), polypropylene, polystyrene, polyurethane, polyacrylate, polynorborene, polyisobutylene, ground synthetic rubber, cross-linked allylstyrene and tertiary butyl copolymers). This does not include polymers derived from biological material or polymers specifically designed to be degradable; or

(III) Mixtures of these nonbiodegradable materials.

(ii) Tests for Nonbiodegradable Sorbents

(I) The sorbent material is determined to be nonbiodegradable under ASTM Method G21-70 (1984a)-Standard Practice for Determining Resistance of Synthetic Polymer Materials to Fungi; or

(II) The sorbent material is determined to be nonbiodegradable under ASTM Method G22-76 (1984b)-Standard Practice for Determining Resistance of Plastics to Bacteria; or

(III) The sorbent material is determined to be non-biodegradable under OECD test 301B: [CO_2 Evolution (Modified Sturm Test)].

6. The placement of any liquid which is not a hazardous waste in a landfill is prohibited unless the owner or operator of such landfill demonstrates to the Commissioner, or the Commissioner determines, that:

(i) The only reasonably available alternative to the placement in such landfill is placement in a landfill or unlined surface impoundment, whether or not permitted or operating under interim status, which contains, or may reasonably be anticipated to contain, hazardous waste; and

(ii) Placement in such owner or operator's landfill will not present a risk of contamination of any "underground source of drinking water" (as that term is defined in Rule ~~1200-01-11-.01~~ 0400-12-01-.01(2)(a)).

(p) Special Requirements for Containers [40 CFR 265.315]

Unless they are very small, such as an ampule, containers must be either:

1. At least 90 percent full when placed in the landfill; or

2. Crushed, shredded, or similarly reduced in volume to the maximum practical extent before burial in the landfill.

(q) Disposal of Small Containers of Hazardous Waste in Overpacked Drums (Lab Packs) [40 CFR 265.316]

Small containers of hazardous waste in overpacked drums (lab packs) may be placed in a landfill if the following requirements are met:

1. Hazardous waste must be packaged in non-leaking inside containers. The inside containers must be of a design and constructed of a material that will not react dangerously with, be decomposed by, or be ignited by the waste held therein. Inside containers must be tightly and securely sealed. The inside containers must be of the size and type specified in the Department of Transportation (DOT) hazardous materials regulations (49 CFR parts 173, 178 and 179), if those regulations specify a particular inside container for the waste.

2. The inside containers must be overpacked in an open head DOT-specification metal shipping container (49 CFR parts 178 and 179) of no more than 416-liter (110 gallon) capacity and surrounded by, at a minimum, a sufficient quantity of sorbent material, determined to be nonbiodegradable in accordance with part ~~(o)6~~ (o)5 of this paragraph, to completely sorb all of the liquid contents of the inside containers. The metal outer container must be full after it has been packed with inside containers and sorbent material.

3. The sorbent material used must not be capable of reacting dangerously with, being decomposed by, or being ignited by the contents of the inside containers in accordance with part (2)(h)2 of this rule.

4. Incompatible wastes, as defined in Rule ~~1200-01-11-.01~~ 0400-12-01-.01(2)(a), must not be placed in the same outside container.

5. Reactive waste, other than cyanide- or sulfide-bearing waste as defined in Rule ~~1200-01-11-.02~~ 0400-12-01-.02(3)(d)1(v), must be treated or rendered non-reactive prior to packaging in accordance with parts 1 through 4 of this subparagraph. Cyanide- and sulfide-bearing reactive waste may be packaged in accordance with parts 1 through 4 of

this subparagraph without first being treated or rendered non-reactive.

6. Such disposal is in compliance with the requirements of Rule ~~1200-01-11-.10~~ 0400-12-01-.10. Persons who incinerate lab packs according to the requirements in Rule ~~1200-01-11-.10~~ 0400-12-01-.10(3)(c)3(i) may use fiber drums in place of metal outer containers. Such fiber drums must meet the DOT specifications in 49 CFR 173.12 and be overpacked according to the requirements in part 2 of this subparagraph.

(15) Incinerators [40 CFR 265 Subpart O]

(a) Applicability [40 CFR 265.340]

1. The regulations of this paragraph apply to owners and operators of hazardous waste incinerators (as defined in Rule ~~1200-01-11-.01~~ 0400-12-01-.01(2)(a)), except as paragraph (1) of this rule provides otherwise.

2. Integration of the MACT standards

(i) Except as provided by subparts ~~2~~ (ii) and ~~2~~ (iii) of this ~~subparagraph~~ part, the standards of this rule no longer apply when an owner or operator demonstrates compliance with the maximum achievable control technology (MACT) requirements of 40 CFR 63 Subpart EEE by conducting a comprehensive performance test and submitting to the Commissioner a Notification of Compliance under 40 CFR 63.1207(j) and 40 CFR 263.1210(d) documenting compliance with the requirements of 40 CFR 63 Subpart EEE.

(ii) The following requirements continue to apply even where the owner or operator has demonstrated compliance with the MACT requirements of 40 CFR 63 Subpart EEE: subparagraph ~~(15)(1)~~ (l) of this paragraph (Closure) and the applicable requirements of paragraphs (1) through (8), (28), and (29) of this rule.

(iii) Subparagraph ~~(15)~~ (f) of this ~~Rule~~ paragraph generally prohibiting burning of hazardous waste during startup and shutdown remains in effect if you elect to comply with item (12)(a)2(i)(I) of Rule ~~1200-01-11-.07~~ 0400-12-01-.07 to minimize emissions of toxic compounds from startup and shutdown.

3. Owners and operators of incinerators burning hazardous waste are exempt from all of the requirements of this paragraph, except subparagraph (l) of this paragraph (Closure), provided that the owner or operator has documented, in writing, that the waste would not reasonably be expected to contain any of the hazardous constituents listed in Appendix VIII of Rule ~~1200-01-11-.02~~ 0400-12-01-.02(5), and such documentation is retained at the facility, if the waste to be burned is:

(i) Listed as a hazardous waste in Rule ~~1200-01-11-.02~~ 0400-12-01-.02(4) solely because it is ignitable (Hazard Code I), corrosive (Hazard Code C), or both; or

(ii) Listed as a hazardous waste in Rule ~~1200-01-11-.02~~ 0400-12-01-.02(4) solely because it is reactive (Hazard Code R) for characteristics other than those listed in Rule ~~1200-01-11-.02~~ 0400-12-01-.02(3)(d)1(iv) and (v) and will not be burned when other hazardous wastes are present in the combustion zone; or

(iii) A hazardous waste solely because it possesses the characteristic of ignitability, corrosivity, or both, as determined by the tests for characteristics of hazardous wastes under Rule ~~1200-01-11-.02~~ 0400-12-01-.02(3); or

(iv) A hazardous waste solely because it possesses the reactivity characteristics described by Rule ~~1200-01-11-.02~~ 0400-12-01-.02(3)(d)1(i), (ii), (iii), (vi), (vii), and (viii), and will not be burned when other hazardous wastes are present in the combustion zone.

(b) Waste Analysis [40 CFR 265.341]

In addition to the waste analyses required by subparagraph (2)(d) of this rule, the owner or operator must sufficiently analyze any waste which he has not previously burned in his incinerator to enable him to establish steady state (normal) operating conditions (including waste and auxiliary fuel feed and air flow) and to determine the type of pollutants which might be emitted. At a minimum, the analysis must determine:

1. Heating value of the waste;

2. Halogen content and sulfur content in the waste; and

3. Concentrations in the waste of lead and mercury, unless the owner or operator has written, documented data that show that the element is not present.

(Comment: As required by subparagraph (5)(d) of this rule, the owner or operator must place the results from each waste analysis, or the documented information, in the operating record of the facility.)

(c) through (e) (RESERVED) [40 CFR 265.342-265.344]

(f) General Operating Requirements [40 CFR 265.345]

During start-up and shut-down of an incinerator, the owner or operator must not feed hazardous waste unless the incinerator is at steady state (normal) conditions of operation, including steady state operating temperature and air flow.

(g) (RESERVED) [40 CFR 265.346]

(h) Monitoring and Inspections [40 CFR 265.347]

The owner or operator must conduct, as a minimum, the following monitoring and inspections when incinerating hazardous waste:

1. Existing instruments which relate to combustion and emission control must be monitored at least every 15 minutes. Appropriate corrections to maintain steady state combustion conditions must be made immediately either automatically or by the operator. Instruments which relate to combustion and emission control would normally include those measuring waste feed, auxiliary fuel feed, air flow, incinerator temperature, scrubber flow, scrubber pH, and relevant level controls.

2. The complete incinerator and associated equipment (pumps, valves, conveyors, pipes, etc.) must be inspected at least daily for leaks, spills, and fugitive emissions, and all emergency shutdown controls and system alarms must be checked to assure proper operation.

(i) through (k) (RESERVED) [40 CFR 265.348-265.350]

(l) Closure [40 CFR 265.351]

At closure, the owner or operator must remove all hazardous waste and hazardous waste residues (including but not limited to ash, scrubber waters, and scrubber sludges) from the incinerator.

(Comment: At closure, as throughout the operating period, unless the owner or operator can demonstrate, in accordance with Rule ~~1200-01-11-.02~~ 0400-12-01-.02(1)(c)4, that the residue removed from his incinerator is not a hazardous waste, the owner or operator becomes a generator of hazardous waste and must manage it in accordance with all applicable requirements

of Rule ~~1200-01-11-.03~~ 0400-12-01-.03 through .07 and .09.)

(m) (RESERVED) [40 CFR 265.352]

(Note: Implementation of this provision remains with EPA.)

(16) Thermal Treatment [40 CFR 265 Subpart P]

(a) Other Thermal Treatment 40 CFR 265.370]

The regulations in this subpart apply to owners or operators of facilities that thermally treat hazardous waste in devices other than enclosed devices using controlled flame combustion, except as paragraph (1) of this rule provides otherwise. Thermal treatment in enclosed devices using controlled flame combustion is subject to the requirements of paragraph (15) of this rule if the unit is an incinerator, and Rule ~~1200-01-11-.09~~ 0400-12-01-.09(8), if the unit is a boiler or an industrial furnace as defined in Rule ~~1200-01-11-.01~~ 0400-12-01-.01(2)(a).

(b) (RESERVED) [40 CFR 265.371]

(c) (RESERVED) [40 CFR 265.372]

(d) General Operating Requirements [40 CFR 265.373]

Before adding hazardous waste, the owner or operator must bring his thermal treatment process to steady state (normal) conditions of operation -- including steady state operating temperature -- using auxiliary fuel or other means, unless the process is a non-continuous (batch) thermal treatment process which requires a complete thermal cycle to treat a discrete quantity of hazardous waste.

(e) (RESERVED) [40 CFR 265.374]

(f) Waste Analysis [40 CFR 265.375]

In addition to the waste analyses required by subparagraph (2)(d) of this rule, the owner or operator must sufficiently analyze any waste which he has not previously treated in his thermal process to enable him to establish steady state (normal) or other appropriate (for a non-continuous process) operating conditions (including waste and auxiliary fuel feed) and to determine the type of pollutants which might be emitted. At a minimum, the analysis must determine:

1. Heating value of the waste;

2. Halogen content and sulfur content in the waste; and

3. Concentrations in the waste of lead and mercury, unless the owner or operator has written, documented data that show that the element is not present.

(Comment: As required by subparagraph (5)(d) of this rule, the owner or operator must place the results from each waste analysis, or the documented information, in the operating record of the facility.)

(g) (RESERVED) [40 CFR 265.376]

(h) Monitoring and Inspections [40 CFR 265.377]

1. The owner or operator must conduct, as a minimum, the following monitoring and inspections when thermally treating hazardous waste:

(i) Existing instruments which relate to temperature and emission control (if an

emission control device is present) must be monitored at least every 15 minutes. Appropriate corrections to maintain steady state or other appropriate thermal treatment conditions must be made immediately either automatically or by the operator. Instruments which relate to temperature and emission control would normally include those measuring waste feed, auxiliary fuel feed, treatment process temperature, and relevant process flow and level controls.

(ii) The stack plume (emissions), where present, must be observed visually at least hourly for normal appearance (color and opacity). The operator must immediately make any indicated operating corrections necessary to return any visible emissions to their normal appearance.

(iii) The complete thermal treatment process and associated equipment (pumps, valves, conveyors, pipes, etc.) must be inspected at least daily for leaks, spills, and fugitive emissions, and all emergency shutdown controls and system alarms must be checked to assure proper operation.

(i) through (k) (RESERVED) [40 CFR 265.378-265.380]

(l) Closure [40 CFR 265.381]

At closure, the owner or operator must remove all hazardous waste and hazardous waste residues (including, but not limited to, ash) from the thermal treatment process or equipment.

(Comment: At closure, as throughout the operating period, unless the owner or operator can demonstrate, in accordance with Rule ~~1200-01-11-.02~~ 0400-12-01-.02(1)(c)3 or 4, that any solid waste removed from his thermal treatment process or equipment is not a hazardous waste, the owner or operator becomes a generator of hazardous waste and must manage it in accordance with all applicable requirements of this rule and Rules ~~1200-01-11-.03~~ 0400-12-01-.03 and .04.)

(m) Open Burning; Waste Explosives [40 CFR 265.382]

Open burning of hazardous waste is prohibited except for the open burning and detonation of waste explosives. Waste explosives include waste which has the potential to detonate and bulk military propellants which cannot safely be disposed of through other modes of treatment. Detonation is an explosion in which chemical transformation passes through the material faster than the speed of sound (0.33 kilometers/second at sea level). Owners or operators choosing to open burn or detonate waste explosives must do so in accordance with the following table and in a manner that does not threaten human health or the environment.

Pounds of waste explosives or propellants	Minimum distance from open burning or detonation to the property of others
0 to 100	204 meters (670 feet).
101 to 1,000	380 meters (1,250 feet).
1,001 to 10,000	530 meters (1,730 feet).
10,001 to 30,000	690 meters (2,260 feet).

(n) (Reserved) [40 CFR 265.383]

(Note: Implementation of this provision remains with EPA.)

(17) Chemical, Physical, and Biological Treatment [40 CFR 265 Subpart Q]

(a) Applicability [40 CFR 265.400]

The regulations in this paragraph apply to owners and operators of facilities which treat hazardous wastes by chemical, physical, or biological methods in other than tanks, surface impoundments, and land treatment facilities, except as ~~subparagraph~~ paragraph (1) of this rule

provides otherwise. Chemical, physical, and biological treatment of hazardous waste in tanks, surface impoundments, and land treatment facilities must be conducted in accordance with paragraphs (10), (11) and (13) of this rule, respectively.

(b) General Operating Requirements [40 CFR 265.401]

1. Chemical, physical, or biological treatment of hazardous waste must comply with part (2)(h)2 of this rule.

2. Hazardous wastes or treatment reagents must not be placed in the treatment process or equipment if they could cause the treatment process or equipment to rupture, leak, corrode, or otherwise fail before the end of its intended life.

3. Where hazardous waste is continuously fed into a treatment process or equipment, the process or equipment must be equipped with a means to stop this inflow (e.g., a waste feed cut-off system or by-pass system to a standby containment device).

   (Comment: These systems are intended to be used in the event of a malfunction in the treatment process or equipment.)

(c) Waste Analysis and Trial Tests [40 CFR 265.402]

In addition to the waste analysis required by subparagraph (2)(d) of this rule, whenever a hazardous waste which is substantially different from waste previously treated in a treatment process or equipment at the facility is to be treated in that process or equipment or whenever a substantially different process from any previously used at the facility is to be used chemically to treat hazardous waste, before treating the different waste or using the different process or equipment, the owner or operator must:

1. Conduct waste analyses and trial treatment tests (e.g., bench scale or pilot plant scale tests); or

2. Obtain written, documented information on similar treatment of similar waste under similar operating conditions to show that this proposed treatment will meet all applicable requirements of parts (b)1 and 2 of this paragraph.

(Comment: As required by subparagraph (2)(d) of this rule, the waste analysis plan must include analyses needed to comply with subparagraphs (f) and (g) of this paragraph. As required by subparagraph (5)(d) of this rule, the owner or operator must place the results from each waste analysis and trial test, or the documented information, in the operating record of the facility.)

(d) Inspections [40 CFR 265.403]

1. The owner or operator of a treatment facility must inspect, where present:

   (i) Discharge control and safety equipment (e.g., waste feed cut-off systems, by-pass systems, drainage systems, and pressure relief systems) at least once each operating day, to ensure that it is in good working order;

   (ii) Data gathered from monitoring equipment (e.g., pressure and temperature gauges), at least once each operating day, to ensure that the treatment process or equipment is being operated according to its design;

   (iii) The construction materials of the treatment process or equipment, at least weekly, to detect corrosion or leaking of fixtures or seams; and

   (iv) The construction materials of, and the area immediately surrounding, discharge confinement structures (e.g., dikes), at least weekly, to detect erosion or obvious signs of leakage (e.g., wet spots or dead vegetation).

(Comment: As required by subparagraph (2)(f)3 of this rule, the owner or operator must remedy any deterioration or malfunction he finds.)

(e) Closure [40 CFR 265.404]

At closure, all hazardous waste and hazardous waste residues must be removed from treatment processes or equipment, discharge control equipment, and discharge confinement structures.

(Comment: At closure, as throughout the operating period, unless the owner or operator can demonstrate, in accordance with Rule ~~1200-01-11-.02~~ 0400-12-01-.02(1)(c)3 or 4, that any solid waste removed from his treatment process or equipment is not a hazardous waste, the owner or operator becomes a generator of hazardous waste and must manage it in accordance with all applicable requirements of this rule and Rules ~~1200-01-11-.03~~ 0400-12-01-.03 and .04.)

(f) Special Requirements for Ignitable or Reactive Waste [40 CFR 265.405]

1. Ignitable or reactive waste must not be placed in a treatment process or equipment unless:

(i) The waste is treated, rendered, or mixed before or immediately after placement in the treatment process or equipment so that

(I) the resulting waste, mixture, or dissolution of material no longer meets the definition of ignitable or reactive waste under Rule ~~1200-01-11-.02~~ 0400-12-01-.02(3)(b) or (d), and

(II) part (2)(h)2 of this rule is complied with; or

(ii) The waste is treated in such a way that it is protected from any material or conditions which may cause the waste to ignite or react.

(g) Special Requirements for Incompatible Wastes [40 CFR 265.406]

1. Incompatible wastes, or incompatible wastes and materials, (see Appendix V in paragraph (53) of this rule for examples) must not be placed in the same treatment process or equipment, unless part (2)(h)2 of this rule is complied with.

2. Hazardous waste must not be placed in unwashed treatment equipment which previously held an incompatible waste or material, unless part (2)(h)2 of this rule is complied with.

(18) Underground Injection [40 CFR 265 Subpart R]

(a) Applicability [40 CFR 265.430]

Except as subparagraph (1)(b) of this rule provides otherwise:

1. The owner or operator of a facility which disposes of hazardous waste by underground injection is excluded from the requirements of paragraphs (7) and (8) of this rule.

(19) through (22) (RESERVED) [40 CFR 265 Subpart S through V]

(23) Drip Pads [40 CFR 265 Subpart W]

(a) Applicability [40 CFR 265.440]

1. The requirements of this paragraph apply to owners and operators of facilities that use new or existing drip pads to convey treated wood drippage, precipitation, and/or surface water run-off to an associated collection system. Existing drip pads are those constructed

before February 14, 1992 and those for which the owner or operator has a design and has entered into binding financial or other agreements for construction prior to February 14, 1992. All other drip pads are new drip pads. The requirement at subpart (d)2(iii) of this paragraph to install a leak collection system applies only to those drip pads that are constructed after December 24, 1992 except for those constructed after December 24, 1992 for which the owner or operator has a design and has entered into binding financial or other agreements for construction prior to December 24, 1992.

(Note: Implementation of these provisions between December 6, 1990 and February 14, 1992 remains with EPA.)

2. The owner or operator of any drip pad that is inside or under a structure that provides protection from precipitation so that neither run-off nor run-on is generated is not subject to regulation under part (d)5 or 6 of this paragraph as appropriate.

3. The requirements of this subpart are not applicable to the management of infrequent and incidental drippage in storage yards provided that:

   (i) The owner or operator maintains and complies with a written contingency plan that describes how the owner or operator will respond immediately to the discharge of such infrequent and incidental drippage. At a minimum, the contingency plan must describe how the facility will do the following:

      (I) Clean up the drippage;

      (II) Document the cleanup of the drippage;

      (III) Retain documents regarding cleanup for three years; and

      (IV) Manage the contaminated media in a manner consistent with Federal regulations.

(b) Assessment of Existing Drip Pad Integrity [40 CFR 265.441]

1. For each existing drip pad as defined in subparagraph (a) of this paragraph, the owner or operator must evaluate the drip pad and determine that it meets all of the requirements of this paragraph, except the requirements for liners and leak detection systems of part (d)2 of this paragraph. No later than the effective date of this rule, the owner or operator must obtain and keep on file at the facility a written assessment of the drip pad, reviewed and certified by a qualified Professional Engineer that attests to the results of the evaluation. The assessment must be reviewed, updated and re-certified annually until all upgrades, repairs, or modifications necessary to achieve compliance with all of the standards of subparagraph (d) of this paragraph are complete. The evaluation must document the extent to which the drip pad meets each of the design and operating standards of subparagraph (d) of this paragraph, except the standards for liners and leak detection systems, specified in part (d)2 of this paragraph.

2. The owner or operator must develop a written plan for upgrading, repairing, and modifying the drip pad to meet the requirements of part (d)2 of this paragraph, and submit the plan to the Commissioner no later than 2 years before the date that all repairs, upgrades, and modifications are complete. This written plan must describe all changes to be made to the drip pad in sufficient detail to document compliance with all the requirements of subparagraph (d) of this paragraph. The plan must be reviewed and certified by a qualified Professional Engineer.

3. Upon completion of all repairs, and modifications, the owner or operator must submit to the Commissioner, the as-built drawings for the drip pad together with a certification by a qualified Professional Engineer attesting that the drip pad conforms to the drawings.

4. If the drip pad is found to be leaking or unfit for use, the owner or operator must comply with the provisions of part (d)13 of this paragraph or close the drip pad in accordance with subparagraph (f) of this paragraph.

(c) Design and Installation of New Drip Pads [40 CFR 265.442]

Owners and operators of new drip pads must ensure that the pads are designed, installed, and operated in accordance with one of the following:

1. All of the applicable requirements of subparagraphs (d) (except subpart (d)1(iv)), (e), and (f) of this paragraph, or

2. All of the applicable requirements of subparagraphs (d) (except part (d)2), (e) and (f) of this paragraph.

(d) Design and Operating Requirements [40 CFR 265.443]

1. Drip pads must:

(i) Be constructed of non-earthen materials, excluding wood and non-structurally supported asphalt;

(ii) Be sloped to free-drain treated wood drippage, rain and other waters, or solutions of drippage and water or other wastes to the associated collection system;

(iii) Have a curb or berm around the perimeter;

(iv) (I) Have a hydraulic conductivity of less than or equal to 1×10^{-7} centimeters per second, e.g., existing concrete drip pads must be sealed, coated, or covered with a surface material with a hydraulic conductivity of less than or equal to 1×10^{-7} centimeters per second such that the entire surface where drippage occurs or may run across is capable of containing such drippage and mixtures of drippage and precipitation, materials, or other wastes while being routed to an associated collection system. This surface material must be maintained free of cracks and gaps that could adversely affect its hydraulic conductivity, and the material must be chemically compatible with the preservatives that contact the drip pad. The requirements of this provision apply only to existing drip pads and those drip pads for which the owner or operator elects to comply with part (c)2 of this paragraph instead of part (c)1 of this paragraph.

(II) The owner or operator must obtain and keep on file at the facility a written assessment of the drip pad, reviewed and certified by a qualified Professional Engineer that attests to the results of the evaluation. The assessment must be reviewed, updated and recertified annually. The evaluation must document the extent to which the drip pad meets the design and operating standards of this subparagraph, except for part 2.

(v) Be of sufficient structural strength and thickness to prevent failure due to physical contact, climatic conditions, the stress of installation, and the stress of daily operations, e.g., variable and moving loads such as vehicle traffic, movement of wood, etc.

(Note: The Commissioner will generally consider applicable standards established by professional organizations generally recognized by industry such as the American Concrete Institute (ACI) and the American Society of Testing Materials (ASTM) in judging the structural integrity requirement of this subpart.)

2. If an owner/operator elects to comply with part (c)1 of this paragraph instead of part (c)2

of this paragraph, the drip pad must have:

(i) A synthetic liner installed below the drip pad that is designed, constructed, and installed to prevent leakage from the drip pad into the adjacent subsurface soil or groundwater or surface water at any time during the active life (including the closure period) of the drip pad. The liner must be constructed of materials that will prevent waste from being absorbed into the liner and prevent releases into the adjacent subsurface soil or ground water or surface water during the active life of the facility. The liner must be:

(I) Constructed of materials that have appropriate chemical properties and sufficient strength and thickness to prevent failure due to pressure gradients (including static head and external hydrogeologic forces), physical contact with the waste or drip pad leakage to which they are exposed, climatic conditions, the stress of installation, and the stress of daily operation (including stresses from vehicular traffic on the drip pad);

(II) Placed upon a foundation or base capable of providing support to the liner and resistance to pressure gradients above and below the liner to prevent failure of the liner due to settlement, compression or uplift; and

(III) Installed to cover all surrounding earth that could come in contact with the waste or leakage; and

(ii) A leakage detection system immediately above the liner that is designed, constructed, maintained and operated to detect leakage from the drip pad. The leakage detection system must be:

(I) Constructed of materials that are:

I. Chemically resistant to the waste managed in the drip pad and the leakage that might be generated; and

II. Of sufficient strength and thickness to prevent collapse under the pressures exerted by overlaying materials and by any equipment used at the drip pad; and

(II) Designed and operated to function without clogging through the scheduled closure of the drip pad.

(III) Designed so that it will detect the failure of the drip pad or the presence of a release of hazardous waste or accumulated liquid at the earliest practicable time.

(iii) A leakage collection system immediately above the liner that is designed, constructed, maintained and operated to collect leakage from the drip pad such that it can be removed from below the drip pad. The date, time, and quantity of any leakage collected in this system and removed must be documented in the operating log.

3. Drip pads must be maintained such that they remain free of cracks, gaps, corrosion, or other deterioration that could cause hazardous waste to be released from the drip pad.

(Note: See part 13 of this subparagraph for remedial action required if deterioration or leakage is detected.)

4. The drip pad and associated collection system must be designed and operated to convey, drain, and collect liquid resulting from drippage or precipitation in order to prevent run-off.

5. Unless protected by a structure, as described in part (a)2 of this paragraph, the owner or operator must design, construct, operate and maintain a run-on control system capable of preventing flow onto the drip pad during peak discharge from at least a 24-hour, 25-year storm unless the system has sufficient excess capacity to contain any run-on that might enter the system, or the drip pad is protected by a structure or cover, as described in part (a)2 of this paragraph.

6. Unless protected by a structure or cover, as described in part (a)2 of this paragraph, the owner or operator must design, construct, operate and maintain a run-off management system to collect and control at least the water volume resulting from a 24-hour, 25-year storm.

7. The drip pad must be evaluated to determine that it meets the requirements of parts 1 through 6 of this subparagraph and the owner or operator must obtain a statement from a qualified Professional Engineer certifying that the drip pad design meets the requirements of this subparagraph.

8. Drippage and accumulated precipitation must be removed from the associated collection system as necessary to prevent overflow onto the drip pad.

9. The drip pad surface must be cleaned thoroughly in a manner and frequency such that accumulated residues of hazardous waste or other materials are removed, with residues being properly managed as hazardous waste, so as to allow weekly inspections of the entire drip pad surface without interference or hindrance from accumulated residues of hazardous waste or other materials on the drip pad. The owner or operator must document the date and time of each cleaning and the cleaning procedure used in the facility's operating log.

10. Drip pads must be operated and maintained in a manner to minimize tracking of hazardous waste or hazardous waste constituents off the drip pad as a result of activities by personnel or equipment.

11. After being removed from the treatment vessel, treated wood from pressure and non-pressure processes must be held on the drip pad until drippage has ceased. The owner or operator must maintain records sufficient to document that all treated wood is held on the pad following treatment in accordance with this requirement.

12. Collection and holding units associated with run-on and run-off control systems must be emptied or otherwise managed as soon as possible after storms to maintain design capacity of the system.

13. Throughout the active life of the drip pad, if the owner or operator detects a condition that may have caused or has caused a release of hazardous waste, the condition must be repaired within a reasonably prompt period of time following discovery, in accordance with the following procedures:

    (i) Upon detection of a condition that may have caused or has caused a release of hazardous waste (e.g., upon detection of leakage by the leak detection system), the owner or operator must:

        (I) Enter a record of the discovery in the facility operating log;

        (II) Immediately remove the portion of the drip pad affected by the condition from service;

        (III) Determine what steps must be taken to repair the drip pad, remove any leakage from below the drip pad, and establish a schedule for accomplishing the clean up and repairs;

(IV) Within 24 hours after discovery of the condition, notify the Commissioner of the condition and, within 10 working days, provide a written notice to the Commissioner with a description of the steps that will be taken to repair the drip pad, and clean up any leakage, and the schedule for accomplishing this work.

(ii) The Commissioner will review the information submitted, make a determination regarding whether the pad must be removed from service completely or partially until repairs and clean up are complete, and notify the owner or operator of the determination and the underlying rationale in writing.

(iii) Upon completing all repairs and clean up, the owner or operator must notify the Commissioner in writing and provide a certification, signed by an independent qualified, registered professional engineer, that the repairs and clean up have been completed according to the written plan submitted in accordance with item (i)(IV) of this part.

14. The owner or operator must maintain, as part of the facility operating log, documentation of past operating and waste handling practices. This must include identification of preservative formulations used in the past, a description of drippage management practices, and a description of treated wood storage and handling practices.

(e) Inspections [40 CFR 265.444]

1. During construction or installation, liners and cover systems (e.g., membranes, sheets, or coatings) must be inspected for uniformity, damage, and imperfections (e.g., holes, cracks, thin spots, or foreign materials). Immediately after construction or installation, liners must be inspected and certified as meeting the requirements of subparagraph (d) of this paragraph by a qualified Professional Engineer. This certification must be maintained at the facility as part of the facility operating record. After installation, liners and covers must be inspected to ensure tight seams and joints and the absence of tears, punctures, or blisters.

2. While a drip pad is in operation, it must be inspected weekly and after storms to detect evidence of any of the following:

(i) Deterioration, malfunctions or improper operation of run-on and run-off control systems;

(ii) The presence of leakage in and proper functioning of leakage detection system;

(iii) Deterioration or cracking of the drip pad surface.

(Note: See part (d)13 of this paragraph for remedial action required if deterioration or leakage is detected.)

(f) Closure [40 CFR 265.445]

1. At closure, the owner or operator must remove or decontaminate all waste residues, contaminated containment system components (pad, liners, etc.), contaminated subsoils, and structures and equipment contaminated with waste and leakage, and manage them as hazardous waste.

2. If, after removing or decontaminating all residues and making all reasonable efforts to effect removal or decontamination of contaminated components, subsoils, structures, and equipment as required in part 1 of this subparagraph, the owner or operator finds that not all contaminated subsoils can be practically removed or decontaminated, he must close the facility and perform post-closure care in accordance with closure and post-closure

care requirements that apply to landfills (subparagraph (14)(k) of this rule). For permitted units, the requirement to have a permit continues throughout the post-closure period.

3. (i) The owner or operator of an existing drip pad, as defined in subparagraph (a) of this paragraph, that does not comply with the liner requirements of subpart (d)2(i) of this paragraph must:

(I) Include in the closure plan for the drip pad under subparagraph (7)(c) of this rule both a plan for complying with part 1 of this subparagraph and a contingent plan for complying with part 2 of this subparagraph in case not all contaminated subsoils can be practicably removed at closure; and

(II) Prepare a contingent post-closure plan under subparagraph (7)(i) of this rule for complying with part 2 of this subparagraph in case not all contaminated subsoils can be practicably removed at closure.

(ii) The cost estimates calculated under subparagraphs (7)(c) and (8)(e) of this rule for closure and post-closure care of a drip pad subject to this part must include the cost of complying with the contingent closure plan and the contingent post-closure plan, but are not required to include the cost of expected closure under part 1 of this subparagraph.

(24) through (26) (RESERVED) [40 CFR 265 Subparts X through Z]

(27) Air Emission Standards for Process Vents [40 CFR 265 Subpart AA]

(a) Applicability [40 CFR 265. 1030]

1. The regulations in this paragraph apply to owners and operators of facilities that treat, store, or dispose of hazardous wastes (except as provided in subparagraph (1)(b) of this rule).

2. Except for parts (e)4 and ~~(e)~~5 of this paragraph, this paragraph applies to process vents associated with distillation, fractionation, thin-film evaporation, solvent extraction, or air or steam stripping operations that manage hazardous wastes with organic concentrations of at least 10 ppmw, if these operations are conducted in one of the following:

(i) A unit that is subject to the permitting requirements of Rule ~~1200-01-11-.07~~ 0400-12-01-.07, or

(ii) A unit (including a hazardous waste recycling unit) that is not exempt from permitting under the provisions of Rule ~~1200-01-11-.03~~ 0400-12-01-.03(4)(e)2 (i.e., a hazardous waste recycling unit that is not a 90-day tank or container) and that is located at a hazardous waste management facility otherwise subject to the permitting requirements of Rule ~~1200-01-11-.07~~ 0400-12-01-.07, or

(iii) A unit that is exempt from permitting under the provisions of Rule 0400-12-01-.03(4)(e)2 (i.e., a "90-day" tank or container) and is not a recycling unit under the requirements of Rule ~~1200-01-11-.02~~ 0400-12-01-.02(1)(f).

3. (Reserved) [40 CFR 265.1030(c)]

4. The requirements of this paragraph do not apply to the process vents at a facility where the facility owner or operator certifies that all of the process vents that would otherwise be subject to this paragraph are equipped with and operating air emission controls in accordance with the process vent requirements of an applicable Clean Air Act regulation codified under 40 CFR Part 60, Part 61, or Part 63. The documentation of compliance under regulations at 40 CFR Part 60, Part 61, or Part 63 shall be kept with, or made readily available with, the facility operating record.

(Note: The requirements of subparagraphs (c) through (f) of this paragraph apply to process vents on hazardous waste recycling units previously exempt under Rule ~~1200-01-11-.02~~ 0400-12-01-.02(1)(f)3(i). Other exemptions under Rules ~~1200-01-11-.02~~ 0400-12-01-.02(1)(d) and ~~.05~~ part (1)(b)2 of this rule are not affected by these requirements.)

(b) Definitions [40 CFR 265.1031]

As used in this paragraph, all terms shall have the meaning given them in Rule ~~1200-01-11-.06~~ 0400-12-01-.06(30)(b), Tennessee Code Annotated §§68-212-101 et seq., Rules ~~1200-01-11-.01~~ 0400-12-01-.01 through .06, and Rule ~~1200-01-11-.09~~ 0400-12-01-.09.

(c) Standards: Process Vents [40 CFR 265.1032]

1. The owner or operator of a facility with process vents associated with distillation, fractionation, thin-film evaporation, solvent extraction or air or steam stripping operations managing hazardous wastes with organic concentrations at least 10 ppmw shall either:

   (i) Reduce total organic emissions from all affected process vents at the facility below 1.4 kg/h (3 lb/h) and 2.8 Mg/yr (3.1 tons/yr), or

   (ii) Reduce, by use of a control device, total organic emissions from all affected process vents at the facility by 95 weight percent.

2. If the owner or operator installs a closed-vent system and control device to comply with the provisions of part 1 of this subparagraph, the closed-vent system and control device must meet the requirements of subparagraph (d) of this paragraph.

3. Determinations of vent emissions and emission reductions or total organic compound concentrations achieved by add-on control devices may be based on engineering calculations or performance tests. If performance tests are used to determine vent emissions, emission reductions, or total organic compound concentrations achieved by add-on control devices, the performance tests must conform with the requirements of part (e)3 of this paragraph.

4. When an owner or operator and the Commissioner do not agree on determinations of vent emissions and/or emission reductions or total organic compound concentrations achieved by add-on control devices based on engineering calculations, the test methods in part (e)3 of this paragraph shall be used to resolve the disagreement.

(d) Standards: Closed-Vent Systems and Control Devices [40 CFR 265.1033]

1. (i) Owners or operators of closed-vent systems and control devices used to comply with provisions of this rule shall comply with the provisions of this subparagraph.

   (ii) (I) The owner or operator of an existing facility who cannot install a closed-vent system and control device to comply with the requirements of this paragraph on the effective date that the facility becomes subject to the provisions of this paragraph must prepare an implementation schedule that includes dates by which the closed-vent system and control device will be installed and in operation. The controls must be installed as soon as possible, but the implementation schedule may allow up to 30 months after the effective date that the facility becomes subject to this paragraph for installation and startup.

   (II) Any unit that begins operation after December 21, 1990, and is subject to the requirements of this paragraph when operation begins, must comply with the rules immediately (i.e., must have control devices installed and operating on startup of the affected unit); the 30-month implementation

schedule does not apply.

(III) The owner or operator of any facility in existence on the effective date of a statutory or regulatory amendment that renders the facility subject to this paragraph shall comply with all requirements of this paragraph as soon as practicable but no later than 30 months after the amendment's effective date. When control equipment required by this paragraph can not be installed and begin operation by the effective date of the amendment, the facility owner or operator shall prepare an implementation schedule that includes the following information: Specific calendar dates for award of contracts or issuance of purchase orders for the control equipment, initiation of on-site installation of the control equipment, completion of the control equipment installation, and performance of any testing to demonstrate that the installed equipment meets the applicable standards of this paragraph. The owner or operator shall enter the implementation schedule in the operating record or in a permanent, readily available file located at the facility.

(IV) Owners and operators of facilities and units that become newly subject to the requirements of this paragraph after December 8, 1997, due to an action other than those described in item ~~4(ii)~~ (III) of this ~~subparagraph~~ subpart must comply with all applicable requirements immediately (i.e., must have control devices installed and operating on the date the facility or unit becomes subject to this paragraph; the 30-month implementation schedule does not apply).

2. A control device involving vapor recovery (e.g., a condenser or adsorber) shall be designed and operated to recover the organic vapors vented to it with an efficiency of 95 weight percent or greater unless the total organic emission limits of subpart (c)1(i) of this paragraph for all affected process vents can be attained at an efficiency less than 95 weight percent.

3. An enclosed combustion device (e.g., a vapor incinerator, boiler, or process heater) shall be designed and operated to reduce the organic emissions vented to it by 95 weight percent or greater; to achieve a total organic compound concentration of 20 ppmv, expressed as the sum of the actual compounds, not carbon equivalents, on a dry basis corrected to 3 percent oxygen; or to provide a minimum residence time of 0.50 seconds at a minimum temperature of 760 °C. If a boiler or process heater is used as the control device, then the vent stream shall be introduced into the flame combustion zone of the boiler or process heater.

4. (i) A flare shall be designed for and operated with no visible emissions as determined by the methods specified in subpart 5(i) of this subparagraph, except for periods not to exceed a total of 5 minutes during any 2 consecutive hours.

(ii) A flare shall be operated with a flame present at all times, as determined by the methods specified in item 6(ii)(III) of this subparagraph.

(iii) A flare shall be used only if the net heating value of the gas being combusted is 11.2 MJ/scm (300 Btu/scf) or greater, if the flare is steam-assisted or air-assisted; or if the net heating value of the gas being combusted is 7.45 MJ/scm (200 Btu/scf) or greater if the flare is nonassisted. The net heating value of the gas being combusted shall be determined by the methods specified in subpart 5(ii) of this subparagraph.

(iv) (I) A steam-assisted or nonassisted flare shall be designed for and operated with an exit velocity, as determined by the methods specified in subpart 5(iii) of this subparagraph, of less than 18.3 m/s (60 ft/s), except as provided in items ~~4(iv)~~ (II) and (III) of this ~~subparagraph~~ subpart.

(II) A steam-assisted or nonassisted flare designed for and operated with an exit velocity, as determined by the methods specified in subpart 5(iii) of this subparagraph, equal to or greater than 18.3 m/s (60 ft/s) but less than 122 m/s (400 ft/s) is allowed if the net heating value of the gas being combusted is greater than 37.3 MJ/scm (1,000 Btu/scf).

(III) A steam-assisted or nonassisted flare designed for and operated with an exit velocity, as determined by the methods specified in subpart 5(iii) of this subparagraph, less than the velocity, V_{max}, as determined by the method specified in subpart 5(iv) of this subparagraph, and less than 122 m/s (400 ft/s) is allowed.

(v) An air-assisted flare shall be designed and operated with an exit velocity less than the velocity, V_{max}, as determined by the method specified in subpart 5(v) of this subparagraph.

(vi) A flare used to comply with this subparagraph shall be steam-assisted, air-assisted, or nonassisted.

5. (i) Reference Method 22 in 40 CFR part 60 shall be used to determine the compliance of a flare with the visible emission provisions of this paragraph. The observation period is 2 hours and shall be used according to Method 22.

(ii) The net heating value of the gas being combusted in a flare shall be calculated using the following equation:

$$H_t = K \left[\sum_{i=1}^{n} C_i H_i \right]$$

where:

H_t = Net heating value of the sample, MJ/scm; where the net enthalpy per mole of offgas is based on combustion at 25 °C and 760 mm Hg, but the standard temperature for determining the volume corresponding to 1 mol is 20 °C;

K = Constant, 1.74×10^{-7} (1/ppm) (g mol/scm) (MJ/kcal) where standard temperature for (g mol/scm) is 20 °C;

C_i = Concentration of sample component i in ppm on a wet basis, as measured for organics by Reference Method 18 in 40 CFR part 60 and measured for hydrogen and carbon monoxide by ASTM D 1946-82 (listed in Rule ~~1200-01-11-.01~~ 0400-12-01-.01(2)(b)); and

H_i = Net heat of combustion of sample component i, kcal/g mol at 25 °C and 760 mm Hg. The heats of combustion may be determined using ASTM D 2382-83 (listed in Rule ~~1200-01-11-.01~~ 0400-12-01-.01(2)(b)) if published values are not available or cannot be calculated.

(iii) The actual exit velocity of a flare shall be determined by dividing the volumetric flow rate (in units of standard temperature and pressure), as determined by

Reference Methods 2, 2A, 2C, or 2D in 40 CFR part 60 as appropriate, by the unobstructed (free) cross-sectional area of the flare tip.

(iv) The maximum allowed velocity in m/s, V_{max}, for a flare complying with item 4(iv)(III) of this subparagraph shall be determined by the following equation:

$$\text{Log}_{10}(V_{max}) = (H_T + 28.8) \div 31.7$$

where:

H_T = The net heating value as determined in subpart 5(ii) of this subparagraph,

28.8 = Constant,

31.7 = Constant.

(v) The maximum allowed velocity in m/s, $V_{max\ for}$ an air-assisted flare shall be determined by the following equation:

V_{max} = $V_{max} = 8.706 + 0.7084\ (H_T)$

where:

8.706 = Constant,

0.7084 = Constant,

H_T = The net heating value as determined in subpart 5(ii) of this subparagraph.

6. The owner or operator shall monitor and inspect each control device required to comply with this ~~section~~ subparagraph to ensure proper operation and maintenance of the control device by implementing the following requirements:

(i) Install, calibrate, maintain, and operate according to the manufacturer's specifications a flow indicator that provides a record of vent stream flow from each affected process vent to the control device at least once every hour. The flow indicator sensor shall be installed in the vent stream at the nearest feasible point to the control device inlet, but before being combined with other vent streams.

(ii) Install, calibrate, maintain, and operate according to the manufacturer's specifications a device to continuously monitor control device operation as specified below:

(I) For a thermal vapor incinerator, a temperature monitoring device equipped with a continuous recorder. The device shall have an accuracy of ±1 percent of the temperature being monitored in °C or ±0.5 °C, whichever is greater. The temperature sensor shall be installed at a location in the combustion chamber downstream of the combustion zone.

(II) For a catalytic vapor incinerator, a temperature monitoring device equipped with a continuous recorder. The device shall be capable of monitoring temperature at two locations and have an accuracy of ±1 percent of the temperature being monitored in °C or ±0.5 °C, whichever is greater. One temperature sensor shall be installed in the vent stream at the nearest feasible point to the catalyst bed inlet and a second temperature sensor shall be installed in the vent stream at the nearest

feasible point to the catalyst bed outlet.

(III) For a flare, a heat sensing monitoring device equipped with a continuous recorder that indicates the continuous ignition of the pilot flame.

(IV) For a boiler or process heater having a design heat input capacity less than 44 MW, a temperature monitoring device equipped with a continuous recorder. The device shall have an accuracy of ±1 percent of the temperature being monitored in °C or ±0.5 °C, whichever is greater. The temperature sensor shall be installed at a location in the furnace downstream of the combustion zone.

(V) For a boiler or process heater having a design heat input capacity greater than or equal to 44 MW, a monitoring device equipped with a continuous recorder to measure a parameter(s) that indicates good combustion operating practices are being used.

(VI) For a condenser, either:

I. A monitoring device equipped with a continuous recorder to measure the concentration level of the organic compounds in the exhaust vent stream from the condenser; or

II. A temperature monitoring device equipped with a continuous recorder. The device shall be capable of monitoring temperature with an accuracy of ±1 percent of the temperature being monitored in degrees Celsius (°C) or ±0.5 °C, whichever is greater. The temperature sensor shall be installed at a location in the exhaust vent stream from the condenser exit (i.e., product side).

(VII) For a carbon adsorption system such as a fixed-bed carbon adsorber that regenerates the carbon bed directly in the control device, either:

I. A monitoring device equipped with a continuous recorder to measure the concentration level of the organic compounds in the exhaust vent stream from the carbon bed, or

II. A monitoring device equipped with a continuous recorder to measure a parameter that indicates the carbon bed is regenerated on a regular, predetermined time cycle.

(iii) Inspect the readings from each monitoring device required by subparts 6 (i) and 6 (ii) of this ~~subparagraph~~ part at least once each operating day to check control device operation and, if necessary, immediately implement the corrective measures necessary to ensure the control device operates in compliance with the requirements of this subparagraph.

7. An owner or operator using a carbon adsorption system such as a fixed-bed carbon adsorber that regenerates the carbon bed directly onsite in the control device, shall replace the existing carbon in the control device with fresh carbon at a regular, predetermined time interval that is no longer than the carbon service life established as a requirement of subitem (f)2(iv)(III)VI of this paragraph.

8. An owner or operator using a carbon adsorption system such as a carbon canister that does not regenerate the carbon bed directly onsite in the control device shall replace the existing carbon in the control device with fresh carbon on a regular basis by using one of the following procedures:

(i) Monitor the concentration level of the organic compounds in the exhaust vent stream from the carbon adsorption system on a regular schedule and replace the existing carbon with fresh carbon immediately when carbon breakthrough is indicated. The monitoring frequency shall be daily or at an interval no greater than 20 percent of the time required to consume the total carbon working capacity established as a requirement of subitem (f)2(iv)(III)VII of this paragraph, whichever is longer.

(ii) Replace the existing carbon with fresh carbon at a regular, predetermined time interval that is less than the design carbon replacement interval established as a requirement of subitem (f)2(iv)(III)VII of this paragraph.

9. An owner or operator of an affected facility seeking to comply with the provisions of this rule by using a control device other than a thermal vapor incinerator, catalytic vapor incinerator, flare, boiler, process heater, condenser, or carbon adsorption system is required to develop documentation including sufficient information to describe the control device operation and identify the process parameter or parameters that indicate proper operation and maintenance of the control device.

10. A closed-vent system shall meet either of the following design requirements:

(i) A closed-vent system shall be designed to operate with no detectable emissions, as indicated by an instrument reading of less than 500 ppmv above background as determined by the procedure in part (e)2 of this paragraph, and by visual inspections; or

(ii) A closed-vent system shall be designed to operate at a pressure below atmospheric pressure. The system shall be equipped with at least one pressure gauge or other pressure measurement device that can be read from a readily accessible location to verify that negative pressure is being maintained in the closed-vent system when the control device is operating.

11. The owner or operator shall monitor and inspect each closed-vent system required to comply with this subparagraph to ensure proper operation and maintenance of the closed-vent system by implementing the following requirements:

(i) Each closed-vent system that is used to comply with subpart 10(i) of this ~~paragraph~~ subparagraph shall be inspected and monitored in accordance with the following requirements:

(I) An initial leak detection monitoring of the closed-vent system shall be conducted by the owner or operator on or before the date that the system becomes subject to this subparagraph. The owner or operator shall monitor the closed-vent system components and connections using the procedures specified in part (e)2 of this paragraph to demonstrate that the closed-vent system operates with no detectable emissions, as indicated by an instrument reading of less than 500 ppmv above background.

(II) After initial leak detection monitoring required in item ~~11(i)~~ (I) of this ~~subparagraph~~ subpart, the owner or operator shall inspect and monitor the closed-vent system as follows:

I. Closed-vent system joints, seams, or other connections that are permanently or semi-permanently sealed (e.g., a welded joint between two sections of hard piping or a bolted and gasketed ducting flange) shall be visually inspected at least once per year to check for defects that could result in air pollutant emissions. The owner or operator shall monitor a component or connection

using the procedures specified in part (e)2 of this paragraph to demonstrate that it operates with no detectable emissions following any time the component is repaired or replaced (e.g., a section of damaged hard piping is replaced with new hard piping) or the connection is unsealed (e.g., a flange is unbolted).

II. Closed-vent system components or connections other than those specified in subitem ~~11(i)(II)~~ I of this ~~subparagraph~~ item shall be monitored annually and at other times as requested by the Commissioner, except as provided for in part 14 of this subparagraph, using the procedures specified in part (e)2 of this paragraph to demonstrate that the components or connections operate with no detectable emissions.

(III) In the event that a defect or leak is detected, the owner or operator shall repair the defect or leak in accordance with the requirements of subpart ~~11~~ (iii) of this ~~subparagraph~~ part.

(IV) The owner or operator shall maintain a record of the inspection and monitoring in accordance with the requirements specified in subparagraph (f) of this paragraph.

(ii) Each closed-vent system that is used to comply with subpart 10(ii) of this subparagraph shall be inspected and monitored in accordance with the following requirements:

(I) The closed-vent system shall be visually inspected by the owner or operator to check for defects that could result in air pollutant emissions. Defects include, but are not limited to, visible cracks, holes, or gaps in ductwork or piping or loose connections.

(II) The owner or operator shall perform an initial inspection of the closed-vent system on or before the date that the system becomes subject to this subparagraph. Thereafter, the owner or operator shall perform the inspections at least once every year.

(III) In the event that a defect or leak is detected, the owner or operator shall repair the defect in accordance with the requirements of subpart ~~11~~ (iii) of this ~~subparagraph~~ part.

(IV) The owner or operator shall maintain a record of the inspection and monitoring in accordance with the requirements specified in subparagraph (f) of this paragraph.

(iii) The owner or operator shall repair all detected defects as follows:

(I) Detectable emissions, as indicated by visual inspection, or by an instrument reading greater than 500 ppmv above background, shall be controlled as soon as practicable, but not later than 15 calendar days after the emission is detected, except as provided for in item ~~11(iii)~~ (III) of this ~~subparagraph~~ subpart.

(II) A first attempt at repair shall be made no later than 5 calendar days after the emission is detected.

(III) Delay of repair of a closed-vent system for which leaks have been detected is allowed if the repair is technically infeasible without a process unit shutdown, or if the owner or operator determines that emissions resulting from immediate repair would be greater than the fugitive

emissions likely to result from delay of repair. Repair of such equipment shall be completed by the end of the next process unit shutdown.

(IV) The owner or operator shall maintain a record of the defect repair in accordance with the requirements specified in subparagraph (f) of this paragraph.

12. Closed-vent systems and control devices used to comply with provisions of this paragraph shall be operated at all times when emissions may be vented to them.

13. The owner or operator using a carbon adsorption system to control air pollutant emissions shall document that all carbon that is a hazardous waste and that is removed from the control device is managed in one of the following manners, regardless of the volatile organic concentration of the carbon:

(i) Regenerated or reactivated in a thermal treatment unit that meets one of the following:

(I) The owner or operator of the unit has been issued a final permit under Rule ~~1200-01-11-.07~~ 0400-12-01-.07 which implements the requirements of Rule ~~1200-01-11-.06~~ 0400-12-01-.06(27); or

(II) The unit is equipped with and operating air emission controls in accordance with the applicable requirements of either paragraphs (27) and (29) of this Rule ~~0400-12-01-.05~~ or paragraphs (30) and (32) of Rule ~~1200-01-11-.06~~ 0400-12-01-.06; or

(III) The unit is equipped with and operating air emission controls in accordance with a national emission standard for hazardous air pollutants under 40 CFR Part 61 or 40 CFR Part 63.

(ii) Incinerated in a hazardous waste incinerator for which the owner or operator either:

(I) Has been issued a final permit under Rule ~~1200-01-11-.07~~ 0400-12-01-.07 which implements the requirements of Rule ~~1200-01-11-.06~~ 0400-12-01-.06(15); or

(II) Has designed and operates the incinerator in accordance with the interim status requirements of paragraph (15) of this rule.

(iii) Burned in a boiler or industrial furnace for which the owner or operator either:

(I) Has been issued a final permit under Rule ~~1200-01-11-.07~~ 0400-12-01-.07 which implements the requirements of Rule ~~1200-01-11-.09~~ 0400-12-01-.09(8); or

(II) Has designed and operates the boiler or industrial furnace in accordance with the interim status requirements of Rule ~~1200-01-11-.09~~ 0400-12-01-.09(8).

14. Any components of a closed-vent system that are designated, as described in subpart (f)3(ix) of this paragraph, as unsafe to monitor are exempt from the requirements of subitem 11(i)(II)II of this subparagraph if:

(i) The owner or operator of the closed-vent system determines that the components of the closed-vent system are unsafe to monitor because monitoring personnel would be exposed to an immediate danger as a consequence of complying with subitem 11(i)(II)II of this subparagraph; and

(ii) The owner or operator of the closed-vent system adheres to a written plan that requires monitoring the closed-vent system components using the procedure specified in subitem 11(i)(II)II of this subparagraph as frequently as practicable during safe-to-monitor times.

15. The Reference Methods cited in preceding parts of this subparagraph are applicable as those methods exist on the effective date of this regulation.

(e) Test Methods and Procedures [40 CFR 265.1034]

1. Each owner or operator subject to the provisions of this paragraph shall comply with the test methods and procedures requirements provided in this subparagraph.

2. When a closed-vent system is tested for compliance with no detectable emissions, as required in part (d)11 of this paragraph, the test shall comply with the following requirements:

(i) Monitoring shall comply with Reference Method 21 in 40 CFR part 60.

(ii) The detection instrument shall meet the performance criteria of Reference Method 21.

(iii) The instrument shall be calibrated before use on each day of its use by the procedures specified in Reference Method 21.

(iv) Calibration gases shall be:

(I) Zero air (less than 10 ppm of hydrocarbon in air).

(II) A mixture of methane or n-hexane and air at a concentration of approximately, but less than, 10,000 ppm methane or n-hexane.

(v) The background level shall be determined as set forth in Reference Method 21.

(vi) The instrument probe shall be traversed around all potential leak interfaces as close to the interface as possible as described in Reference Method 21.

(vii) The arithmetic difference between the maximum concentration indicated by the instrument and the background level is compared with 500 ppm for determining compliance.

3. Performance tests to determine compliance with part (c)1 of this paragraph and with the total organic compound concentration limit of part (d)3 of this paragraph shall comply with the following:

(i) Performance tests to determine total organic compound concentrations and mass flow rates entering and exiting control devices shall be conducted and data reduced in accordance with the following reference methods and calculation procedures:

(I) Method 2 in 40 CFR part 60 for velocity and volumetric flow rate.

(II) Method 18 or Method 25A in 40 CFR part 60, Appendix A, for organic content. If Method 25A is used, the organic HAP used as the calibration gas must be the single organic HAP representing the largest percent by volume of the emissions. The use of Method 25A is acceptable if the response from the high-level calibration gas is at least 20 times the standard deviation of the response from the zero calibration gas when

the instrument is zeroed on the most sensitive scale.

(III) Each performance test shall consist of three separate runs; each run conducted for at least 1 hour under the conditions that exist when the hazardous waste management unit is operating at the highest load or capacity level reasonably expected to occur. For the purpose of determining total organic compound concentrations and mass flow rates, the average of results of all runs shall apply. The average shall be computed on a time-weighted basis.

(IV) Total organic mass flow rates shall be determined by the following equation:

I. For sources utilizing Method 18.

$$E_h = Q_{2sd}\left[\sum_{i=1}^{n}\right] C_i MW_i \ (0.0416)\ (10^{-6})$$

where:

E_h = Total organic mass flow rate, kg/h;

Q_{2sd} = Volumetric flow rate of gases entering or exiting control device, as determined by Method 2, dscm/h;

n = Number of organic compounds in the vent gas;

C_i = Organic concentration in ppm, dry basis, of compound i in the vent gas, as determined by Method 18;

MW_i = Molecular weight of organic compound i in the vent gas, kg/kg-mol;

0.0416 = Conversion factor for molar volume, kg-mol/m^3 (@ 293 K and 760 mm Hg);

10^{-6} = Conversion from ppm.

II. For sources utilizing Method 25A.

$E_h = (Q)(C)(MW)(0.0416)(10^{-6})$

where:

E_h = Total organic mass flow rate, kg/h;

Q = Volumetric flow rate of gases entering or exiting control device, as determined by Method 2, dscm/h;

C = Organic concentration in ppm, dry basis, as determined by Method 25A;

MW = Molecular weight of propane, 44;

0.0416 = Conversion factor for molar volume, kg-mol/m3 (@ 293 K and 760 mm Hg);

10^{-6} = Conversion from ppm.

(V) The annual total organic emission rate shall be determined by the following equation:

$E_A = (E_h)(H)$

where:

E_A = Total organic mass emission rate, kg/y;

E_h = Total organic mass flow rate for the process vent, kg/h;

H = Total annual hours of operations for the affected unit, h.

(VI) Total organic emissions from all affected process vents at the facility shall be determined by summing the hourly total organic mass emission rates (E_h, as determined in item (IV) of this subpart) and by summing the annual total organic mass emission rates (E_A, as determined in item (V) of this subpart) for all affected process vents at the facility.

(ii) The owner or operator shall record such process information as may be necessary to determine the conditions of the performance tests. Operations during periods of startup, shutdown, and malfunction shall not constitute representative conditions for the purpose of a performance test.

(iii) The owner or operator of an affected facility shall provide, or cause to be provided, performance testing facilities as follows:

(I) Sampling ports adequate for the test methods specified in subpart ~~3~~ (i) of this ~~subparagraph~~ part.

(II) Safe sampling platform(s).

(III) Safe access to sampling platform(s).

(IV) Utilities for sampling and testing equipment.

(iv) For the purpose of making compliance determinations, the time-weighted average of the results of the three runs shall apply. In the event that a sample is accidentally lost or conditions occur in which one of the three runs must be discontinued because of forced shutdown, failure of an irreplaceable portion of the sample train, extreme meteorological conditions, or other circumstances beyond the owner or operator's control, compliance may, upon the Commissioner's approval, be determined using the average of the results of the two other runs.

4. To show that a process vent associated with a hazardous waste distillation, fractionation, thin-film evaporation, solvent extraction, or air or steam stripping operation is not subject to the requirements of this paragraph, the owner or operator must make an initial determination that the time-weighted, annual average total organic concentration of the waste managed by the waste management unit is less than 10 ppmw using one of the following two methods:

(i) Direct measurement of the organic concentration of the waste using the following

procedures:

(I) The owner or operator must take a minimum of four grab samples of waste for each waste stream managed in the affected unit under process conditions expected to cause the maximum waste organic concentration.

(II) For waste generated onsite, the grab samples must be collected at a point before the waste is exposed to the atmosphere such as in an enclosed pipe or other closed system that is used to transfer the waste after generation to the first affected distillation fractionation, thin-film evaporation, solvent extraction, or air or steam stripping operation. For waste generated offsite, the grab samples must be collected at the inlet to the first waste management unit that receives the waste provided the waste has been transferred to the facility in a closed system such as a tank truck and the waste is not diluted or mixed with other waste.

(III) Each sample shall be analyzed and the total organic concentration of the sample shall be computed using Method 9060A of "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA Publication SW-846 (see 40 CFR 260.11; Rule ~~1200-01-11-.01~~ 0400-12-01-.01(2)(b)1) or analyzed for its individual organic constituents.

(IV) The arithmetic mean of the results of the analyses of the four samples shall apply for each waste stream managed in the unit in determining the time-weighted, annual average total organic concentration of the waste. The time-weighted average is to be calculated using the annual quantity of each waste stream processed and the mean organic concentration of each waste stream managed in the unit.

(ii) Using knowledge of the waste to determine that its total organic concentration is less than 10 ppmw. Documentation of the waste determination is required. Examples of documentation that shall be used to support a determination under this provision include production process information documenting that no organic compounds are used, information that the waste is generated by a process that is identical to a process at the same or another facility that has previously been demonstrated by direct measurement to generate a waste stream having a total organic content less than 10 ppmw, or prior speciation analysis results on the same waste stream where it can also be documented that no process changes have occurred since that analysis that could affect the waste total organic concentration.

5. The determination that distillation fractionation, thin-film evaporation, solvent extraction, or air or steam stripping operations manage hazardous wastes with time-weighted annual average total organic concentrations less than 10 ppmw shall be made as follows:

(i) By the effective date that the facility becomes subject to the provisions of this paragraph or by the date when the waste is first managed in a waste management unit, whichever is later; and

(ii) For continuously generated waste, annually; or

(iii) Whenever there is a change in the waste being managed or a change in the process that generates or treats the waste.

6. When an owner or operator and the Commissioner do not agree on whether a distillation, fractionation, thin-film evaporation, solvent extraction, or air or steam stripping operation manages a hazardous waste with organic concentrations of at least 10 ppmw based on knowledge of the waste, the dispute may be resolved using direct measurement as specified at subpart 4(i) ~~of part 4~~ of this subparagraph.

7. The Reference Methods cited in preceding parts of this subparagraph are applicable as those methods exist on the effective date of this regulation.

(f) Recordkeeping Requirements [40 CFR 265.1035]

1. (i) Each owner or operator subject to the provisions of this paragraph shall comply with the recordkeeping requirements of this subparagraph.

(ii) An owner or operator of more than one hazardous waste management unit subject to the provisions of this paragraph may comply with the recordkeeping requirements for these hazardous waste management units in one recordkeeping system if the system identifies each record by each hazardous waste management unit.

2. Owners and operators must record the following information in the facility operating record:

(i) For facilities that comply with the provisions of subpart (d)1(ii) of this paragraph, an implementation schedule that includes dates by which the closed-vent system and control device will be installed and in operation. The schedule must also include a rationale of why the installation cannot be completed at an earlier date. The implementation schedule must be in the facility operating record by the effective date that the facility becomes subject to the provisions of this paragraph.

(ii) Up-to-date documentation of compliance with the process vent standards in subparagraph (c) of this paragraph, including:

(I) Information and data identifying all affected process vents, annual throughput and operating hours of each affected unit, estimated emission rates for each affected vent and for the overall facility (i.e., the total emissions for all affected vents at the facility), and the approximate location within the facility of each affected unit (e.g., identify the hazardous waste management units on a facility plot plan); and

(II) Information and data supporting determinations of vent emissions and emission reductions achieved by add-on control devices based on engineering calculations or source tests. For the purpose of determining compliance, determinations of vent emissions and emission reductions must be made using operating parameter values (e.g., temperatures, flow rates or vent stream organic compounds and concentrations) that represent the conditions that result in maximum organic emissions, such as when the waste management unit is operating at the highest load or capacity level reasonably expected to occur. If the owner or operator takes any action (e.g., managing a waste of different composition or increasing operating hours of affected waste management units) that would result in an increase in total organic emissions from affected process vents at the facility, then a new determination is required.

(iii) Where an owner or operator chooses to use test data to determine the organic removal efficiency or total organic compound concentration achieved by the control device, a performance test plan. The test plan must include:

(I) A description of how it is determined that the planned test is going to be conducted when the hazardous waste management unit is operating at the highest load or capacity level reasonably expected to occur. This shall include the estimated or design flow rate and organic content of each vent stream and define the acceptable operating ranges of key

process and control device parameters during the test program.

(II) A detailed engineering description of the closed-vent system and control device including:

I. Manufacturer's name and model number of control device.

II. Type of control device.

III. Dimensions of the control device.

IV. Capacity.

V. Construction materials.

(III) A detailed description of sampling and monitoring procedures, including sampling and monitoring locations in the system, the equipment to be used, sampling and monitoring frequency, and planned analytical procedures for sample analysis.

(iv) Documentation of compliance with subparagraph (d) of this paragraph shall include the following information:

(I) A list of all information references and sources used in preparing the documentation.

(II) Records, including the dates, of each compliance test required by part (d)10 of this paragraph.

(III) If engineering calculations are used, a design analysis, specifications, drawings, schematics, and piping and instrumentation diagrams based on the appropriate sections of "APTI Course 415: Control of Gaseous Emissions" (listed in Rule ~~1200-01-11-.01~~ 0400-12-01-.01(2)(b)) or other engineering texts acceptable to the Commissioner that present basic control device design information. Documentation provided by the control device manufacturer or vendor that describes the control device design in accordance with subitem ~~2(iv)(III)~~ I through ~~subitem 2(iv)(III)~~ VIII of this ~~subparagraph~~ item may be used to comply with this requirement. The design analysis shall address the vent stream characteristics and control device operation parameters as specified below.

I. For a thermal vapor incinerator, the design analysis shall consider the vent stream composition, constituent concentrations, and flow rate. The design analysis shall also establish the design minimum and average temperature in the combustion zone and the combustion zone residence time.

II. For a catalytic vapor incinerator, the design analysis shall consider the vent stream composition, constituent concentrations, and flow rate. The design analysis shall also establish the design minimum and average temperatures across the catalyst bed inlet and outlet.

III. For a boiler or process heater, the design analysis shall consider the vent stream composition, constituent concentrations, and flow rate. The design analysis shall also establish the design minimum and average flame zone temperatures, combustion zone residence time, and description of method and location where the vent stream is introduced into the combustion zone.

IV. For a flare, the design analysis shall consider the vent stream composition, constituent concentrations, and flow rate. The design analysis shall also consider the requirements specified in part (d)4 of this paragraph.

V. For a condenser, the design analysis shall consider the vent stream composition, constituent concentrations, flow rate, relative humidity, and temperature. The design analysis shall also establish the design outlet organic compound concentration level, design average temperature of the condenser exhaust vent stream, and design average temperatures of the coolant fluid at the condenser inlet and outlet.

VI. For a carbon adsorption system such as a fixed-bed adsorber that regenerates the carbon bed directly onsite in the control device, the design analysis shall consider the vent stream composition, constituent concentrations, flow rate, relative humidity, and temperature. The design analysis shall also establish the design exhaust vent stream organic compound concentration level, number and capacity of carbon beds, type and working capacity of activated carbon used for carbon beds, design total steam flow over the period of each complete carbon bed regeneration cycle, duration of the carbon bed steaming and cooling/drying cycles, design carbon bed temperature after regeneration, design carbon bed regeneration time, and design service life of carbon.

VII. For a carbon adsorption system such as a carbon canister that does not regenerate the carbon bed directly onsite in the control device, the design analysis shall consider the vent stream composition, constituent concentrations, flow rate, relative humidity, and temperature. The design analysis shall also establish the design outlet organic concentration level, capacity of carbon bed, type and working capacity of activated carbon used for carbon bed, and design carbon replacement interval based on the total carbon working capacity of the control device and source operating schedule.

(IV) A statement signed and dated by the owner or operator certifying that the operating parameters used in the design analysis reasonably represent the conditions that exist when the hazardous waste management unit is or would be operating at the highest load or capacity level reasonably expected to occur.

(V) A statement signed and dated by the owner or operator certifying that the control device is designed to operate at an efficiency of 95 percent or greater unless the total organic concentration limit of part (c)1 of this paragraph is achieved at an efficiency less than 95 weight percent or the total organic emission limits of part (c)1 of this paragraph for affected process vents at the facility can be attained by a control device involving vapor recovery at an efficiency less than 95 weight percent. A statement provided by the control device manufacturer or vendor certifying that the control equipment meets the design specifications may be used to comply with this requirement.

(VI) If performance tests are used to demonstrate compliance, all test results.

3. Design documentation and monitoring, operating, and inspection information for each

closed-vent system and control device required to comply with the provisions of this rule shall be recorded and kept up-to-date in the facility operating record. The information shall include:

(i) Description and date of each modification that is made to the closed-vent system or control device design.

(ii) Identification of operating parameter, description of monitoring device, and diagram of monitoring sensor location or locations used to comply with subparts (d)6(i) and ~~(d)~~6 (ii) of this paragraph.

(iii) Monitoring, operating and inspection information required by parts (d)6 through ~~(d)~~11 of this paragraph.

(iv) Date, time, and duration of each period that occurs while the control device is operating when any monitored parameter exceeds the value established in the control device design analysis as specified below:

(I) For a thermal vapor incinerator designed to operate with a minimum residence time of 0.50 seconds at a minimum temperature of 760 °C, period when the combustion temperature is below 760 °C.

(II) For a thermal vapor incinerator designed to operate with an organic emission reduction efficiency of 95 percent or greater, period when the combustion zone temperature is more than 28 °C below the design average combustion zone temperature established as a requirement of subitem 2(iv)(III)I of this subparagraph.

(III) For a catalytic vapor incinerator, period when:

I. Temperature of the vent stream at the catalyst bed inlet is more than 28 °C below the average temperature of the inlet vent stream established as a requirement of subitem 2(iv)(III)II of this subparagraph; or

II. Temperature difference across the catalyst bed is less than 80 percent of the design average temperature difference established as a requirement of subitem 2(iv)(III)II of this subparagraph.

(IV) For a boiler or process heater, period when:

I. Flame zone temperature is more than 28 °C below the design average flame zone temperature established as a requirement of subitem 2(iv)(III)III of this subparagraph; or

II. Position changes where the vent stream is introduced to the combustion zone from the location established as a requirement of subitem 2(iv)(III)III of this subparagraph.

(V) For a flare, period when the pilot flame is not ignited.

(VI) For a condenser that complies with subitem (d)6(ii)(VI)I of this paragraph, period when the organic compound concentration level or readings of organic compounds in the exhaust vent stream from the condenser are more than 20 percent greater than the design outlet organic compound concentration level established as a requirement of subitem 2(iv)(III)V of this subparagraph.

(VII) For a condenser that complies with subitem (d)6(ii)(VI)II of this paragraph, period when:

I. Temperature of the exhaust vent stream from the condenser is more than 6 °C above the design average exhaust vent stream temperature established as a requirement of subitem 2(iv)(III)V of this subparagraph; or

II. Temperature of the coolant fluid exiting the condenser is more than 6 °C above the design average coolant fluid temperature at the condenser outlet established as a requirement of subitem 2(iv)(III)V of this subparagraph.

(VIII) For a carbon adsorption system such as a fixed-bed carbon adsorber that regenerates the carbon bed directly onsite in the control device and complies with subitem (d)6(ii)(VII)I of this paragraph, period when the organic compound concentration level or readings of organic compounds in the exhaust vent stream from the carbon bed are more than 20 percent greater than the design exhaust vent stream organic compound concentration level established as a requirement of subitem 2(iv)(III)VI of this subparagraph.

(IX) For a carbon adsorption system such as a fixed-bed carbon adsorber that regenerates the carbon bed directly onsite in the control device and complies with subitem (d)6(ii)(VII)II of this paragraph, period when the vent stream continues to flow through the control device beyond the predetermined carbon bed regeneration time established as a requirement of subitem 2(iv)(III)VI of this subparagraph.

(v) Explanation for each period recorded under subpart (iv) of this part of the cause for control device operating parameter exceeding the design value and the measures implemented to correct the control device operation.

(vi) For carbon adsorption systems operated subject to requirements specified in part (d)7 or subpart (d)8(ii) of this paragraph, date when existing carbon in the control device is replaced with fresh carbon.

(vii) For carbon adsorption systems operated subject to requirements specified in subpart (d)8(i) of this paragraph, a log that records:

(I) Date and time when control device is monitored for carbon breakthrough and the monitoring device reading.

(II) Date when existing carbon in the control device is replaced with fresh carbon.

(viii) Date of each control device startup and shutdown.

(ix) An owner or operator designating any components of a closed-vent system as unsafe to monitor pursuant to part (d)14 of this paragraph shall record in a log that is kept in the facility operating record the identification of closed-vent system components that are designated as unsafe to monitor in accordance with the requirements of part (d)14 of this paragraph, an explanation for each closed-vent system component stating why the closed-vent system component is unsafe to monitor, and the plan for monitoring each closed-vent system component.

(x) When each leak is detected as specified in part (d)11 of this paragraph, the following information shall be recorded:

(I) The instrument identification number, the closed-vent system component identification number, and the operator name, initials, or identification number.

(II) The date the leak was detected and the date of first attempt to repair the leak.

(III) The date of successful repair of the leak.

(IV) Maximum instrument reading measured by Method 21 of 40 CFR part 60, appendix A after it is successfully repaired or determined to be nonrepairable.

(V) "Repair delayed" and the reason for the delay if a leak is not repaired within 15 calendar days after discovery of the leak.

I. The owner or operator may develop a written procedure that identifies the conditions that justify a delay of repair. In such cases, reasons for delay of repair may be documented by citing the relevant sections of the written procedure.

II. If delay of repair was caused by depletion of stocked parts, there must be documentation that the spare parts were sufficiently stocked on-site before depletion and the reason for depletion.

4. Records of the monitoring, operating, and inspection information required by subparts 3(iii) through 3(x) of this subparagraph shall be maintained by the owner or operator for at least 3 years following the date of each occurrence, measurement, maintenance, corrective action, or record.

5. For a control device other than a thermal vapor incinerator, catalytic vapor incinerator, flare, boiler, process heater, condenser, or carbon adsorption system, monitoring and inspection information indicating proper operation and maintenance of the control device must be recorded in the facility operating record.

6. Up-to-date information and data used to determine whether or not a process vent is subject to the requirements in subparagraph (c) of this paragraph including supporting documentation as required by subpart (e)4(ii) of this paragraph when application of the knowledge of the nature of the hazardous waste stream or the process by which it was produced is used, shall be recorded in a log that is kept in the facility operating record.

(28) Air Emission Standards for Equipment Leaks [40 CFR 265 Subpart BB]

(a) Applicability [40 CFR 265.1050]

1. The regulations in this paragraph apply to owners and operators of facilities that treat, store, or dispose of hazardous wastes (except as provided in subparagraph (1)(b) of this rule).

2. Except as provided in part (o)11 of this paragraph, this paragraph applies to equipment that contains or contacts hazardous wastes with organic concentrations of at least 10 percent by weight that are managed in one of the following:

(i) A unit that is subject to the permitting requirements of Rule ~~1200-01-11-.07~~ 0400-12-01-.07;

(ii) A unit (including a hazardous waste recycling unit) that is not exempt from permitting under the provisions of part (4)(e)2 of Rule ~~1200-01-11-.03~~ 0400-12-01-.03 (i.e., a hazardous waste recycling unit that is not a 90-day tank or

container) and that is located at a hazardous waste management facility otherwise subject to the permitting requirements of Rule ~~1200-01-11-.07~~ 0400-12-01-.07; or

(iii) A unit that is exempt from permitting under the provisions of part (4)(e)2 of Rule ~~1200-01-11-.03~~ 0400-12-01-.03 (i.e., a "90-day" tank or container) and is not a recycling unit under the provisions of Rule ~~1200-01-11-.02~~ 0400-12-01-.02(1)(f).

3. Each piece of equipment to which this paragraph applies shall be marked in such a manner that it can be distinguished readily from other pieces of equipment.

4. Equipment that is in vacuum service is excluded from the requirements of subparagraph (c) to (k) of this paragraph if it is identified as required in subpart (o)7(v) of this paragraph.

5. Equipment that contains or contacts hazardous waste with an organic concentration of at least 10 percent by weight for less than 300 hours per calendar year is excluded from the requirements of subparagraphs (c) through (k) of this paragraph if it is identified as required in subpart (o)7(vi) of this paragraph.

6. (Reserved) [40 CFR 265.1050(f)]

7. Purged coatings and solvents from surface coating operations subject to the national emission standards for hazardous air pollutants (NESHAP) for the surface coating of automobiles and light-duty trucks at 40 CFR part 63, subpart IIII, are not subject to the requirements of this paragraph.

(Note: The requirements of subparagraphs (c) through (o) of this paragraph apply to equipment associated with hazardous waste recycling units previously exempt under Rule ~~1200-01-11-.02~~ 0400-12-01-.02(1)(f)3(i). Other exemptions under Rule ~~1200-01-11-.02~~ 0400-12-01-.02(1)(d) and part (1)(b)2 of this rule are not affected by these requirements.)

(b) Definitions [40 CFR 265.1051]

As used in this subpart, all terms shall have the meaning given them in Rule ~~1200-01-11-.06~~ 0400-12-01-.06(30)(b), Tennessee Code Annotated §§68-212-101 et seq., Rules ~~1200-01-11-.01~~ 0400-12-01-.01 through .06, and Rule ~~1200-01-11-.09~~ 0400-12-01-.09.

(c) Standards: Pumps in Light Liquid Service [40 CFR 265.1052]

1. (i) Each pump in light liquid service shall be monitored monthly to detect leaks by the methods specified in part (n)2 of this paragraph, except as provided in parts 4, 5, and 6 of this subparagraph.

(ii) Each pump in light liquid service shall be checked by visual inspection each calendar week for indications of liquids dripping from the pump seal.

2. (i) If an instrument reading of 10,000 ppm or greater is measured, a leak is detected.

(ii) If there are indications of liquids dripping from the pump seal, a leak is detected.

3. (i) When a leak is detected, it shall be repaired as soon as practicable, but not later than 15 calendar days after it is detected, except as provided in subparagraph (j) of this paragraph.

(ii) A first attempt at repair (e.g., tightening the packing gland) shall be made no later than 5 calendar days after each leak is detected.

4. Each pump equipped with a dual mechanical seal system that includes a barrier fluid

system is exempt from the requirements of part 1 of this subparagraph, provided the following requirements are met:

(i) Each dual mechanical seal system must be:

(I) Operated with the barrier fluid at a pressure that is at all times greater than the pump stuffing box pressure, or

(II) Equipped with a barrier fluid degassing reservoir that is connected by a closed-vent system to a control device that complies with the requirements of subparagraph (k) of this paragraph, or

(III) Equipped with a system that purges the barrier fluid into a hazardous waste stream with no detectable emissions to the atmosphere.

(ii) The barrier fluid system must not be a hazardous waste with organic concentrations 10 percent or greater by weight.

(iii) Each barrier fluid system must be equipped with a sensor that will detect failure of the seal system, the barrier fluid system or both.

(iv) Each pump must be checked by visual inspection, each calendar week, for indications of liquids dripping from the pump seals.

(v) (I) Each sensor as described in subpart 4 (iii) of this ~~subparagraph~~ part must be checked daily or be equipped with an audible alarm that must be checked monthly to ensure that it is functioning properly.

(II) The owner or operator must determine, based on design considerations and operating experience, a criterion that indicates failure of the seal system, the barrier fluid system, or both.

(vi) (I) If there are indications of liquids dripping from the pump seal or the sensor indicates failure of the seal system, the barrier fluid system, or both based on the criterion determined in item 4 (v)(II) of this ~~subparagraph~~ part, a leak is detected.

(II) When a leak is detected, it shall be repaired as soon as practicable, but not later than 15 calendar days after it is detected, except as provided in subparagraph (j) of this paragraph.

(III) A first attempt at repair (e.g., relapping the seal) shall be made no later than 5 calendar days after each leak is detected.

5. Any pump that is designated, as described in subpart (o)7(ii) of this paragraph, for no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, is exempt from the requirements of parts 1, 3, and 4 of this ~~paragraph~~ subparagraph if the pump meets the following requirements:

(i) Must have no externally actuated shaft penetrating the pump housing.

(ii) Must operate with no detectable emissions as indicated by an instrument reading of less than 500 ppm above background as measured by the methods specified in part (n)3 of this paragraph.

(iii) Must be tested for compliance with subpart (ii) of this part initially upon designation, annually, and at other times as requested by the Commissioner.

6. If any pump is equipped with a closed-vent system capable of capturing and transporting

any leakage from the seal or seals to a control device that complies with the requirements of subparagraph (k) of this paragraph, it is exempt from the requirements of parts 1 through 5 of this subparagraph.

(d) Standards: Compressors [40 CFR 265.1053]

1. Each compressor shall be equipped with a seal system that includes a barrier fluid system and that prevents leakage of total organic emissions to the atmosphere, except as provided in parts 8 and 9 of this subparagraph.

2. Each compressor seal system as required in part 1 of this subparagraph shall be:

   (i) Operated with the barrier fluid at a pressure that is at all times greater than the compressor stuffing box pressure, or

   (ii) Equipped with a barrier fluid system that is connected by a closed-vent system to a control device that complies with the requirements of subparagraph (k) of this paragraph, or

   (iii) Equipped with a system that purges the barrier fluid into a hazardous waste stream with no detectable emissions to atmosphere.

3. The barrier fluid must not be a hazardous waste with organic concentrations 10 percent or greater by weight.

4. Each barrier fluid system as described in parts 1 through 3 of this subparagraph shall be equipped with a sensor that will detect failure of the seal system, barrier fluid system, or both.

5. (i) Each sensor as required in part 4 of this subparagraph shall be checked daily or shall be equipped with an audible alarm that must be checked monthly to ensure that it is functioning properly unless the compressor is located within the boundary of an unmanned plant site, in which case the sensor must be checked daily.

   (ii) The owner or operator shall determine, based on design considerations and operating experience, a criterion that indicates failure of the seal system, the barrier fluid system or both.

6. If the sensor indicates failure of the seal system, the barrier fluid system, or both based on the criterion determined under subpart 5(ii) of this subparagraph, a leak is detected.

7. (i) When a leak is detected, it shall be repaired as soon as practicable, but not later than 15 calendar days after it is detected, except as provided in subparagraph (j) of this paragraph.

   (ii) A first attempt at repair (e.g., tightening the packing gland) shall be made no later than 5 calendar days after each leak is detected.

8. A compressor is exempt from the requirements of parts 1 and 2 of this subparagraph if it is equipped with a closed-vent system capable of capturing and transporting any leakage from the seal to a control device that complies with the requirements of subparagraph (k) of this paragraph, except as provided in part 9 of this subparagraph.

9. Any compressor that is designated, as described in subpart (o)7(ii) of this paragraph, for no detectable emission as indicated by an instrument reading of less than 500 ppm above background is exempt from the requirements of parts 1 through 8 of this subparagraph if the compressor:

(i) Is determined to be operating with no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, as measured by the method specified in part (n)3 of this paragraph.

(ii) Is tested for compliance with subpart 9 (i) of this ~~subparagraph~~ part initially upon designation, annually, and at other times as requested by the Commissioner.

(e) Standards: Pressure Relief Devices in Gas/Vapor Service [40 CFR 265.1054]

1. Except during pressure releases, each pressure relief device in gas/vapor service shall be operated with no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, as measured by the method specified in part (n)3 of this paragraph.

2. (i) After each pressure release, the pressure relief device shall be returned to a condition of no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, as soon as practicable, but no later than 5 calendar days after each pressure release, except as provided in subparagraph (j) of this paragraph.

(ii) No later than 5 calendar days after the pressure release, the pressure relief device shall be monitored to confirm the condition of no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, as measured by the method specified in part (n)3 of this paragraph.

3. Any pressure relief device that is equipped with a closed-vent system capable of capturing and transporting leakage from the pressure relief device to a control device as described in subparagraph (k) of this paragraph is exempt from the requirements of parts 1 and 2 of this subparagraph.

(f) Standards: Sampling Connecting Systems [40 CFR 265.1055]

1. Each sampling connection system shall be equipped with a closed-purge, closed-loop, or closed-vent system. This system shall collect the sample purge for return to the process or for routing to the appropriate treatment system. Gases displaced during filling of the sample container are not required to be collected or captured.

2. Each closed-purge, closed-loop, or closed-vent system as required in part 1 of this subparagraph shall:

(i) Return the purged process fluid directly to the process line; or

(ii) Collect and recycle the purged process fluid; or

(iii) Be designed and operated to capture and transport all the purged process fluid to a waste management unit that complies with the applicable requirements of subparagraphs (29)(f) through (h) of this rule or a control device that complies with the requirements of subparagraph (k) of this paragraph.

3. In situ sampling systems and sampling systems without purges are exempt from the requirements of parts 1 and 2 of this subparagraph.

(g) Standards: Open-ended Valves or Lines [40 CFR 265.1056]

1. (i) Each open-ended valve or line shall be equipped with a cap, blind flange, plug, or a second valve.

(ii) The cap, blind flange, plug, or second valve shall seal the open end at all times except during operations requiring hazardous waste stream flow through the

open-ended valve or line.

2. Each open-ended valve or line equipped with a second valve shall be operated in a manner such that the valve on the hazardous waste stream end is closed before the second valve is closed.

3. When a double block and bleed system is being used, the bleed valve or line may remain open during operations that require venting the line between the block valves but shall comply with part 1 of this subparagraph at all other times.

(h) Standards: Valves in Gas/vapor Service or in Light Liquid Service [40 CFR 265.1057]

1. Each valve in gas/vapor or light liquid service shall be monitored monthly to detect leaks by the methods specified in part (n)2 of this paragraph and shall comply with parts 2 through 5 of this subparagraph, except as provided in parts 6, 7, and 8 of this subparagraph and subparagraphs (l) and (m) of this paragraph.

2. If an instrument reading of 10,000 ppm or greater is measured, a leak is detected.

3. (i) Any valve for which a leak is not detected for two successive months may be monitored the first month of every succeeding quarter, beginning with the next quarter, until a leak is detected.

(ii) If a leak is detected, the valve shall be monitored monthly until a leak is not detected for 2 successive months.

4. (i) When a leak is detected, it shall be repaired as soon as practicable, but no later than 15 calendar days after the leak is detected, except as provided in subparagraph (j) of this paragraph.

(ii) A first attempt at repair shall be made no later than 5 calendar days after each leak is detected.

5. First attempts at repair include, but are not limited to, the following best practices where practicable:

(i) Tightening of bonnet bolts.

(ii) Replacement of bonnet bolts.

(iii) Tightening of packing gland nuts.

(iv) Injection of lubricant into lubricated packing.

6. Any valve that is designated, as described in subpart (o)7(ii) of this paragraph, for no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, is exempt from the requirements of part 1 of this subparagraph if the valve:

(i) Has no external actuating mechanism in contact with the hazardous waste stream.

(ii) Is operated with emissions less than 500 ppm above background as determined by the method specified in part (n)3 of this paragraph.

(iii) Is tested for compliance with subpart 6(ii) of this subparagraph initially upon designation, annually, and at other times as requested by the Commissioner.

7. Any valve that is designated, as described in subpart (o)8(i) of this paragraph, as an unsafe-to-monitor valve is exempt from the requirements of part 1 of this subparagraph if:

(i) The owner or operator of the valve determines that the valve is unsafe to monitor because monitoring personnel would be exposed to an immediate danger as a consequence of complying with part 1 of this subparagraph.

(ii) The owner or operator of the valve adheres to a written plan that requires monitoring of the valve as frequently as practicable during safe-to-monitor times.

8. Any valve that is designated, as described in subpart (o)8(ii) of this paragraph, as a difficult-to-monitor valve is exempt from the requirements of part 1 of this subparagraph if:

(i) The owner or operator of the valve determines that the valve cannot be monitored without elevating the monitoring personnel more than 2 meters above a support surface.

(ii) The hazardous waste management unit within which the valve is located was in operation before June 21, 1990.

(iii) The owner or operator of the valve follows a written plan that requires monitoring of the valve at least once per calendar year.

(i) Standards: Pumps and Valves in Heavy Liquid Service, Pressure Relief Devices in Light Liquid or Heavy Liquid Service, and Flanges and Other Connectors [40 CFR 265.1058]

1. Pumps and valves in heavy liquid service, pressure relief devices in light liquid or heavy liquid service, and flanges and other connectors shall be monitored within 5 days by the method specified in part (n)2 of this paragraph if evidence of a potential leak is found by visual, audible, olfactory, or any other detection method.

2. If an instrument reading of 10,000 ppm or greater is measured, a leak is detected.

3. (i) When a leak is detected, it shall be repaired as soon as practicable, but not later than 15 calendar days after it is detected, except as provided in subparagraph (j) of this paragraph.

(ii) The first attempt at repair shall be made no later than 5 calendar days after each leak is detected.

4. First attempts at repair include, but are not limited to, the best practices described under part (h)5 of this paragraph.

5. Any connector that is inaccessible or is ceramic or ceramic-lined (e.g., porcelain, glass, or glass-lined) is exempt from the monitoring requirements of part 1 of this subparagraph and from the recordkeeping requirements of subparagraph (k) of this paragraph.

(j) Standards: Delay of Repair [40 CFR 265.1059]

1. Delay of repair of equipment for which leaks have been detected will be allowed if the repair is technically infeasible without a hazardous waste management unit shutdown. In such a case, repair of this equipment shall occur before the end of the next hazardous waste management unit shutdown.

2. Delay of repair of equipment for which leaks have been detected will be allowed for equipment that is isolated from the hazardous waste management unit and that does not continue to contain or contact hazardous waste with organic concentrations at least 10 percent by weight.

3. Delay of repair for valves will be allowed if:

(i) The owner or operator determines that emissions of purged material resulting from immediate repair are greater than the emissions likely to result from delay of repair.

(ii) When repair procedures are effected, the purged material is collected and destroyed or recovered in a control device complying with subparagraph (k) of this paragraph.

4. Delay of repair for pumps will be allowed if:

(i) Repair requires the use of a dual mechanical seal system that includes a barrier fluid system.

(ii) Repair is completed as soon as practicable, but not later than 6 months after the leak was detected.

5. Delay of repair beyond a hazardous waste management unit shutdown will be allowed for a valve if valve assembly replacement is necessary during the hazardous waste management unit shutdown, valve assembly supplies have been depleted, and valve assembly supplies had been sufficiently stocked before the supplies were depleted. Delay of repair beyond the next hazardous waste management unit shutdown will not be allowed unless the next hazardous waste management unit shutdown occurs sooner than 6 months after the first hazardous waste management unit shutdown.

(k) Standards: Closed-vent Systems and Control Devices [40 CFR 265.1060]

1. Owners and operators of closed-vent systems and control devices subject to this paragraph shall comply with the provisions of subparagraph (27)(d) of this rule.

2. (i) The owner or operator of an existing facility who cannot install a closed-vent system and control device to comply with the provisions of this paragraph on the effective date that the facility becomes subject to the provisions of this paragraph must prepare an implementation schedule that includes dates by which the closed-vent system and control device will be installed and in operation. The controls must be installed as soon as possible, but the implementation schedule may allow up to 30 months after the effective date that the facility becomes subject to this paragraph for installation and startup.

(ii) Any units that begin operation after December 21, 1990, and are subject to the provisions of this paragraph when operation begins, must comply with the rules immediately (i.e., must have control devices installed and operating on startup of the affected unit); the 30-month implementation schedule does not apply.

(iii) The owner or operator of any facility in existence on the effective date of a statutory or regulatory amendment that renders the facility subject to this paragraph shall comply with all requirements of this paragraph as soon as practicable but no later than 30 months after the amendment's effective date. When control equipment required by this paragraph can not be installed and begin operation by the effective date of the amendment, the facility owner or operator shall prepare an implementation schedule that includes the following information: Specific calendar dates for award or contracts or issuance of purchase orders for the control equipment, initiation of on-site installation of the control equipment, completion of the control equipment installation, and performance of any testing to demonstrate that the installed equipment meets the applicable standards of this paragraph. The owner or operator shall enter the implementation schedule in the operating record or in a permanent, readily available file located at the facility.

(iv) Owners and operators of facilities and units that become newly subject to the

requirements of this paragraph after December 8, 1997, due to an action other than those described in subpart ~~2~~ (iii) of this ~~subparagraph~~ part must comply with all applicable requirements immediately (i.e., must have control devices installed and operating on the date the facility or unit becomes subject to this paragraph; the 30-month implementation schedule does not apply).

(l) Alternative Standards for Valves in Gas/Vapor Service or in Light Liquid Service: Percentage of Valves Allowed to Leak [40 CFR 265.1061]

1. An owner or operator subject to the requirements of subparagraph (h) of this paragraph may elect to have all valves within a hazardous waste management unit comply with an alternative standard which allows no greater than 2 percent of the valves to leak.

2. The following requirements shall be met if an owner or operator decides to comply with the alternative standard of allowing 2 percent of valves to leak:

   (i) A performance test as specified in part 3 of this subparagraph shall be conducted initially upon designation, annually, and at other times requested by the Commissioner.

   (ii) If a valve leak is detected, it shall be repaired in accordance with parts (h)4 and (h)5 of this paragraph.

3. Performance tests shall be conducted in the following manner:

   (i) All valves subject to the requirements in subparagraph (h) of this paragraph within the hazardous waste management unit shall be monitored within 1 week by the methods specified in part (n)2 of this paragraph.

   (ii) If an instrument reading of 10,000 ppm or greater is measured, a leak is detected.

   (iii) The leak percentage shall be determined by dividing the number of valves subject to the requirements in subparagraph (h) of this paragraph for which leaks are detected by the total number of valves subject to the requirements in subparagraph (h) of this paragraph within the hazardous waste management unit.

(m) Alternative Standards for Valves in Gas/Vapor Service or in Light Liquid Service: Skip Period Leak Detection and Repair [40 CFR 265.1062]

1. An owner or operator subject to the requirements of subparagraph (h) of this paragraph may elect for all valves within a hazardous waste management unit to comply with one of the alternative work practices specified in subparts 2(ii) and 2(iii) of this subparagraph.

2. (i) An owner or operator shall comply with the requirements for valves, as described in subparagraph (h) of this paragraph, except as described in subparts ~~2~~(ii) and ~~2~~(iii) of this ~~subparagraph~~ part.

   (ii) After two consecutive quarterly leak detection periods with the percentage of valves leaking equal to or less than 2 percent, an owner or operator may begin to skip one of the quarterly leak detection periods (i.e., monitor for leaks once every six months) for the valves subject to the requirements in subparagraph (h) of this paragraph.

   (iii) After five consecutive quarterly leak detection periods with the percentage of valves leaking equal to or less than 2 percent, an owner or operator may begin to skip three of the quarterly leak detection periods (i.e., monitor for leaks once every year) for the valves subject to the requirements in subparagraph (h) of this

paragraph.

(iv) If the percentage of valves leaking is greater than 2 percent, the owner or operators shall monitor monthly in compliance with the requirements in subparagraph (h) of this paragraph, but may again elect to use this ~~section~~ subparagraph after meeting the requirements of subpart (h)3(i) of this paragraph.

(n) Test Methods and Procedures [40 CFR 265.1063]

1. Each owner or operator subject to the provisions of this paragraph shall comply with the test methods and procedures requirements provided in this subparagraph.

2. Leak detection monitoring, as required in subparagraphs (c) through (m), shall comply with the following requirements:

(i) Monitoring shall comply with Reference Method 21 in 40 CFR part 60.

(ii) The detection instrument shall meet the performance criteria of Reference Method 21.

(iii) The instrument shall be calibrated before use on each day of its use by the procedures specified in Reference Method 21.

(iv) Calibration gases shall be:

(I) Zero air (less than 10 ppm of hydrocarbon in air).

(II) A mixture of methane or n-hexane and air at a concentration of approximately, but less than, 10,000 ppm methane or n-hexane.

(v) The instrument probe shall be traversed around all potential leak interfaces as close to the interface as possible as described in Reference Method 21.

3. When equipment is tested for compliance with no detectable emissions, as required in part (c)5, part (d)9, subparagraph (e), and part (h)6 of this paragraph, the test shall comply with the following requirements:

(i) The requirements of subparts 2(i) through ~~2~~(iv) of this subparagraph shall apply.

(ii) The background level shall be determined, as set forth in Reference Method 21.

(iii) The instrument probe shall be traversed around all potential leak interfaces as close to the interface as possible as described in Reference Method 21.

(iv) The arithmetic difference between the maximum concentration indicated by the instrument and the background level is compared with 500 ppm for determining compliance.

4. In accordance with the waste analysis plan required by part (2)(d)2 of this rule, an owner or operator of a facility must determine, for each piece of equipment, whether the equipment contains or contacts a hazardous waste with organic concentration that equals or exceeds 10 percent by weight using the following:

(i) Methods described in ASTM Methods D 2267-88, E 169-87, E 168-88, E 260-85 (see 40 CFR 260.11; Rule ~~1200-01-11-.01~~ 0400-12-01-.01(2)(b)1).

(ii) Method 9060A of "Test Methods for Evaluating Solid Waste", EPA Publication SW-846 (see 40 CFR 260.11; Rule ~~1200-01-11-.01~~ 0400-12-01-.01(2)(b)1) or analyzed for its individual organic constituents; or

(iii) Application of the knowledge of the nature of the hazardous waste stream or the process by which it was produced. Documentation of a waste determination by knowledge is required. Examples of documentation that shall be used to support a determination under this provision include production process information documenting that no organic compounds are used, information that the waste is generated by a process that is identical to a process at the same or another facility that has previously been demonstrated by direct measurement to have a total organic content less than 10 percent, or prior speciation analysis results on the same waste stream where it can also be documented that no process changes have occurred since that analysis that could affect the waste total organic concentration.

5. If an owner or operator determines that a piece of equipment contains or contacts a hazardous waste with organic concentrations at least 10 percent by weight, the determination can be revised only after following the procedures in subpart 4(i) or 4 (ii) of this subparagraph.

6. When an owner or operator and the Commissioner do not agree on whether a piece of equipment contains or contacts a hazardous waste with organic concentrations at least 10 percent by weight, the procedures in subpart 4(i) or 4 (ii) of this subparagraph can be used to resolve the dispute.

7. Samples used in determining the percent organic content shall be representative of the highest total organic content hazardous waste that is expected to be contained in or contact the equipment.

8. To determine if pumps or valves are in light liquid service, the vapor pressures of constituents may be obtained from standard reference texts or may be determined by ASTM D-2879-86 (see 40 CFR 260.11; Rule ~~1200-01-11-.01~~ 0400-12-01-.01(2)(b)1).

9. Performance tests to determine if a control device achieves 95 weight percent organic emission reduction shall comply with the procedures of subparts (27)(e)3(i) through (iv) of this rule.

10. The Reference methods cited in preceding parts of this subparagraph are applicable as those methods exist on the effective date of these regulations.

(o) Recordkeeping Requirements [40 CFR 265.1064]

1. (i) Each owner or operator subject to the provisions of this paragraph shall comply with the recordkeeping requirements of this subparagraph.

(ii) An owner or operator of more than one hazardous waste management unit subject to the provisions of this paragraph may comply with the recordkeeping requirements for these hazardous waste management units in one recordkeeping system if the system identifies each record by each hazardous waste management unit.

2. Owners and operators must record the following information in the facility operating record:

(i) For each piece of equipment to which this paragraph ~~(28) of this Rule~~ applies:

(I) Equipment identification number and hazardous waste management unit identification.

(II) Approximate locations within the facility (e.g., identify the

hazardous waste management unit on a facility plot plan).

(III) Type of equipment (e.g., a pump or pipeline valve).

(IV) Percent-by-weight total organics in the hazardous waste stream at the equipment.

(V) Hazardous waste state at the equipment (e.g., gas/vapor or liquid).

(VI) Method of compliance with the standard (e.g., "monthly leak detection and repair" or "equipped with dual mechanical seals").

(ii) For facilities that comply with the provisions of subpart (27)(d)1(ii) of this rule, an implementation schedule as specified in subpart (27)(d)1(ii) of this rule.

(iii) Where an owner or operator chooses to use test data to demonstrate the organic removal efficiency or total organic compound concentration achieved by the control device, a performance test plan as specified in subpart (27)(f)2(iii) of this rule.

(iv) Documentation of compliance with subparagraph (k) of this paragraph, including the detailed design documentation or performance test results specified in subpart (27)(f)2(iv) of this rule.

3. When each leak is detected as specified in subparagraphs (c), (d), (h), and (i) of this paragraph, the following requirements apply:

(i) A weatherproof and readily visible identification, marked with the equipment identification number, the date evidence of a potential leak was found in accordance with part (i)1 of this paragraph, and the date the leak was detected, shall be attached to the leaking equipment.

(ii) The identification on equipment, except on a valve, may be removed after it has been repaired.

(iii) The identification on a valve may be removed after it has been monitored for 2 successive months as specified in part (h)3 of this paragraph and no leak has been detected during those 2 months.

4. When each leak is detected as specified in subparagraphs (c), (d), (h), and (i) of this paragraph, the following information shall be recorded in an inspection log and shall be kept in the facility operating record:

(i) The instrument and operator identification numbers and the equipment identification number.

(ii) The date evidence of a potential leak was found in accordance with part (i)1 of this paragraph.

(iii) The date the leak was detected and the dates of each attempt to repair the leak.

(iv) Repair methods applied in each attempt to repair the leak.

(v) "Above 10,000" if the maximum instrument reading measured by the methods specified in pat (n)2 of this paragraph after each repair attempt is equal to or greater than 10,000 ppm.

(vi) "Repair delayed" and the reason for the delay if a leak is not repaired within 15 calendar days after discovery of the leak.

(vii) Documentation supporting the delay of repair of a valve in compliance with part (j)3 of this paragraph.

(viii) The signature of the owner or operator (or designate) whose decision it was that repair could not be effected without a hazardous waste management unit shutdown.

(ix) The expected date of successful repair of the leak if a leak is not repaired within 15 calendar days.

(x) The date of successful repair of the leak.

5. Design documentation and monitoring, operating, and inspection information for each closed-vent system and control device required to comply with the provisions of subparagraph (k) of this paragraph shall be recorded and kept up-to-date in the facility operating record as specified in ~~part~~ subparagraph (27)(f) of this rule. Design documentation is specified in subparts (27)(f)3(i) and ~~3~~ (ii) of this rule and monitoring, operating, and inspection information in subparts (27)(f)3(iii) through (viii) of this rule.

6. For a control device other than a thermal vapor incinerator, catalytic vapor incinerator, flare, boiler, process heater, condenser, or carbon adsorption system, monitoring and inspection information indicating proper operation and maintenance of the control device must be recorded in the facility operating record.

7. The following information pertaining to all equipment subject to the requirements in subparagraphs (c) through (k) of this paragraph shall be recorded in a log that is kept in the facility operating record:

(i) A list of identification numbers for equipment (except welded fittings) subject to the requirements of this paragraph.

(ii) (I) A list of identification numbers for equipment that the owner or operator elects to designate for no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, under the provisions of parts (c)5, (d)9, and (h)6 of this paragraph.

(II) The designation of this equipment as subject to the requirements of parts (c)5, (d)9, or (h)6 of this paragraph shall be signed by the owner or operator.

(iii) A list of equipment identification numbers for pressure relief devices required to comply with part (e)1 of this paragraph.

(iv) (I) The dates of each compliance test required in parts (c)5, (d)9, subparagraph (e) and part (h)6 of this paragraph.

(II) The background level measured during each compliance test.

(III) The maximum instrument reading measured at the equipment during each compliance test.

(v) A list of identification numbers for equipment in vacuum service.

(vi) Identification, either by list or location (area or group) of equipment that contains or contacts hazardous waste with an organic concentration of at least 10 percent by weight for less than 300 hours per calendar year.

8. The following information pertaining to all valves subject to the requirements of parts (h)7 and ~~(h)~~ 8 of this paragraph shall be recorded in a log that is kept in the facility operating record:

   (i) A list of identification numbers for valves that are designated as unsafe to monitor, an explanation for each valve stating why the valve is unsafe to monitor, and the plan for monitoring each valve.

   (ii) A list of identification numbers for valves that are designated as difficult to monitor, an explanation for each valve stating why the valve is difficult to monitor, and the planned schedule for monitoring each valve.

9. The following information shall be recorded in the facility operating record for valves complying with subparagraph (m) of this paragraph:

   (i) A schedule of monitoring.

   (ii) The percent of valves found leaking during each monitoring period.

10. The following information shall be recorded in a log that is kept in the facility operating record:

   (i) Criteria required in item (c)4(v)(II) and subpart (d)5(ii) of this paragraph and an explanation of the criteria.

   (ii) Any changes to these criteria and the reasons for the changes.

11. The following information shall be recorded in a log that is kept in the facility operating record for use in determining exemptions as provided in the applicability subparagraph of this paragraph and other specific paragraphs:

   (i) An analysis determining the design capacity of the hazardous waste management unit.

   (ii) A statement listing the hazardous waste influent to and effluent from each hazardous waste management unit subject to the requirements in subparagraphs (c) through (k) of this paragraph and an analysis determining whether these hazardous wastes are heavy liquids.

   (iii) An up-to-date analysis and the supporting information and data used to determine whether or not equipment is subject to the requirements in subparagraphs (c) through (k) of this paragraph. The record shall include supporting documentation as required by subpart (n)4(iii) of this paragraph when application of the knowledge of the nature of the hazardous waste stream or the process by which it was produced is used. If the owner or operator takes any action (e.g., changing the process that produced the waste) that could result in an increase in the total organic content of the waste contained in or contacted by equipment determined not to be subject to the requirements in subparagraphs (c) through (k) of this paragraph, then a new determination is required.

12. Records of the equipment leak information required by part 4 of this subparagraph and the operating information required by part 5 of this subparagraph need be kept only 3 years.

13. The owner or operator of any facility with equipment that is subject to this paragraph and to leak detection, monitoring, and repair requirements under regulations at 40 CFR Part 60, Part 61, or Part 63 may elect to determine compliance with this paragraph either by documentation pursuant to this subparagraph ~~(c) of this paragraph~~, or by documentation

of compliance with the regulations at 40 CFR Part 60, Part 61, or Part 63 pursuant to the relevant provisions of regulations at 40 CFR Part 60, Part 61, or Part 63. The documentation of compliance under regulation at 40 CFR Part 60, Part 61, or Part 63 shall be kept with or made readily available with the facility operating record.

(29) Air Emission Standards for Tanks, Surface Impoundments, and Containers [40 CFR 265 Subpart CC]

(a) Applicability [40 CFR 265.1080]

1. The requirements of this paragraph apply to owners and operators of all facilities that treat, store, or dispose of hazardous waste in tanks, surface impoundments, or containers subject to either paragraph (9), (10), or (11) of this rule except as subparagraph (1)(b) of this rule and part 2 of this subparagraph provide otherwise.

2. The requirements of this paragraph do not apply to the following waste management units at the facility:

(i) A waste management unit that holds hazardous waste placed in the unit before December 6, 1996, and in which no hazardous waste is added to the unit on or after December 6, 1996.

(ii) A container that has a design capacity less than or equal to 0.1 m^3.

(iii) A tank in which an owner or operator has stopped adding hazardous waste and the owner or operator has begun implementing or completed closure pursuant to an approved closure plan.

(iv) A surface impoundment in which an owner or operator has stopped adding hazardous waste (except to implement an approved closure plan) and the owner or operator has begun implementing or completed closure pursuant to an approved closure plan.

(v) A waste management unit that is used solely for on-site treatment or storage of hazardous waste that is placed in the unit as the result of implementing remedial activities required under the corrective action authorities of T.C.A. §§ 68-212-108(l), 68-212-111 or 68-212-201 et seq. authorities.

(vi) A waste management unit that is used solely for the management of radioactive mixed waste in accordance with all applicable regulations under the authority of the Atomic Energy Act and the Nuclear Waste Policy Act.

(vii) A hazardous waste management unit that the owner or operator certifies is equipped with and operating air emission controls in accordance with the requirements of an applicable Clean Air Act regulation codified under 40 CFR part 60, part 61, or part 63. For the purpose of complying with this paragraph, a tank for which the air emission control includes an enclosure, as opposed to a cover, must be in compliance with the enclosure and control device requirements of part (f)9 of this paragraph, except as provided in subpart (d)3(v) of this paragraph.

(viii) A tank that has a process vent as defined in Rule ~~1200-01-11-.06~~ 0400-12-01-.06 (30)(a).

(ix) Wastewater treatment units as defined in Rule ~~1200-01-11-.01~~ 0400-12-01-.01(2)(a).

3. For the owner and operator of a facility subject to this paragraph who has received a final permit under T.C.A. §68-212-108 prior to December 6, 1996, the following requirements apply:

(i) The requirements of Rule ~~1200-01-11-.06~~ 0400-12-01-.06(32) shall be incorporated into the permit when the permit is reissued in accordance with the requirements of Rule ~~1200-01-11-.07~~ 0400-12-01-.07(7)(i) or reviewed in accordance with the requirements of Rule ~~1200-01-11-.07~~ 0400-12-01-.07(8)(c).

(ii) Until the date when the permit is reissued in accordance with the requirements of Rule ~~1200-01-11-.07~~ 0400-12-01-.07(7)(i) or reviewed in accordance with the requirements of Rule ~~1200-01-11-.07~~ 0400-12-01-.07(8)(c), the owner and operator is subject to the requirements of this paragraph.

4. The requirements of this paragraph, except for the recordkeeping requirements specified in part (k)9 of this paragraph, are administratively stayed for a tank or a container used for the management of hazardous waste generated by organic peroxide manufacturing and its associated laboratory operations when the owner or operator of the unit meets all of the following conditions:

(i) The owner or operator identifies that the tank or container receives hazardous waste generated by an organic peroxide manufacturing process producing more than one functional family of organic peroxides or multiple organic peroxides within one functional family, that one or more of these organic peroxides could potentially undergo self-accelerating thermal decomposition at or below ambient temperatures, and that organic peroxides are the predominant products manufactured by the process. For the purpose of meeting the conditions of this paragraph, "organic peroxide" means an organic compound that contains the bivalent -O-O- structure and which may be considered to be a structural derivative of hydrogen peroxide where one or both of the hydrogen atoms has been replaced by an organic radical.

(ii) The owner or operator prepares documentation, in accordance with the requirements of part (k)9 of this paragraph, explaining why an undue safety hazard would be created if air emission controls specified in subparagraphs (f) through (i) of this paragraph are installed and operated on the tanks and containers used at the facility to manage the hazardous waste generated by the organic peroxide manufacturing process or processes meeting the conditions of subpart 4 (i) of this ~~subparagraph~~ part

(iii) The owner or operator notifies the Commissioner in writing that hazardous waste generated by an organic peroxide manufacturing process or processes meeting the conditions of subpart 4 (i) of this ~~subparagraph~~ part are managed at the facility in tanks or containers meeting the conditions of subpart 4 (ii) of this ~~subparagraph~~ part. The notification shall state the name and address of the facility, and be signed and dated by an authorized representative of the facility owner or operator.

5. (Reserved) [40 CFR 265.1080(e)]

(b) Definitions [40 CFR 265.1081]

As used in this paragraph, all terms not defined herein shall have the meaning given to them in the Act and Rules ~~1200-01-11-.01~~ 0400-12-01-.01 through .06 and .09.

"Average volatile organic concentration" or "average VO concentration" means the mass-weighted average volatile organic concentration of a hazardous waste as determined in accordance with the requirements of subparagraph (e) of this paragraph.

"Closure device" means a cap, hatch, lid, plug, seal, valve, or other type of fitting that blocks an opening in a cover such that when the device is secured in the closed position it prevents or reduces air pollutant emissions to the atmosphere. Closure devices include devices that are

detachable from the cover (e.g., a sampling port cap), manually operated (e.g., a hinged access lid or hatch), or automatically operated (e.g., a spring-loaded pressure relief valve).

"Continuous seal" means a seal that forms a continuous closure that completely covers the space between the edge of the floating roof and the wall of a tank. A continuous seal may be a vapor-mounted seal, liquid-mounted seal, or metallic shoe seal. A continuous seal may be constructed of fastened segments so as to form a continuous seal.

"Cover" means a device that provides a continuous barrier over the hazardous waste managed in a unit to prevent or reduce air pollutant emissions to the atmosphere. A cover may have openings (such as access hatches, sampling ports, gauge wells) that are necessary for operation, inspection, maintenance, and repair of the unit on which the cover is used. A cover may be a separate piece of equipment which can be detached and removed from the unit or a cover may be formed by structural features permanently integrated into the design of the unit.

"Enclosure" means a structure that surrounds a tank or container, captures organic vapors emitted from the tank or container, and vents the captured vapors through a closed vent system to a control device.

"External floating roof" means a pontoon-type or double-deck type cover that rests on the surface of the material managed in a tank with no fixed roof.

"Fixed roof" means a cover that is mounted on a unit in a stationary position and does not move with fluctuations in the level of the material managed in the unit.

"Floating membrane cover" means a cover consisting of a synthetic flexible membrane material that rests upon and is supported by the hazardous waste being managed in a surface impoundment.

"Floating roof" means a cover consisting of a double deck, pontoon single deck, or internal floating cover which rests upon and is supported by the material being contained, and is equipped with a continuous seal.

"Hard-piping" means pipe or tubing that is manufactured and properly installed in accordance with relevant standards and good engineering practices.

"In light material service" means the container is used to manage a material for which both of the following conditions apply: The vapor pressure of one or more of the organic constituents in the material is greater than 0.3 kilopascals (kPa) at 20 °C; and the total concentration of the pure organic constituents having a vapor pressure greater than 0.3 kPa at 20 °C is equal to or greater than 20 percent by weight.

"Internal floating roof" means a cover that rests or floats on the material surface (but not necessarily in complete contact with it) inside a tank that has a fixed roof.

"Liquid-mounted seal" means a foam or liquid-filled primary seal mounted in contact with the hazardous waste between the tank wall and the floating roof continuously around the circumference of the tank.

"Malfunction" means any sudden, infrequent, and not reasonably preventable failure of air pollution control equipment, process equipment, or a process to operate in a normal or usual manner. Failures that are caused in part by poor maintenance or careless operation are not malfunctions.

"Maximum organic vapor pressure" means the sum of the individual organic constituent partial pressures exerted by the material contained in a tank, at the maximum vapor pressure-causing conditions (i.e., temperature, agitation, pH effects of combining wastes, etc.) reasonably expected to occur in the tank. For the purpose of this subpart, maximum organic vapor pressure is determined using the procedures specified in part (e)3 of this paragraph.

"Metallic shoe seal" means a continuous seal that is constructed of metal sheets which are held vertically against the wall of the tank by springs, weighted levers, or other mechanisms and is connected to the floating roof by braces or other means. A flexible coated fabric (envelope) spans the annular space between the metal sheet and the floating roof.

"No detectable organic emissions" means no escape of organics to the atmosphere as determined using the procedure specified in part (e)4 of this paragraph.

"Point of waste origination" means as follows:

~~(1)~~ 1. When the facility owner or operator is the generator of the hazardous waste, the point of waste origination means the point where a solid waste produced by a system, process, or waste management unit is determined to be a hazardous waste as defined in Rule ~~1200-01-11-.02~~ 0400-12-01-.02.

(Note: In this case, this term is being used in a manner similar to the use of the term "point of generation" in air standards established for waste management operations under authority of the Clean Air Act in 40 CFR Parts 60, 61, and 63.)

~~(2)~~ 2. When the facility owner and operator are not the generator of the hazardous waste, point of waste origination means the point where the owner or operator accepts delivery or takes possession of the hazardous waste.

"Point of waste treatment" means the point where a hazardous waste to be treated in accordance with subpart (d)3(ii) of this paragraph exits the treatment process. Any waste determination shall be made before the waste is conveyed, handled, or otherwise managed in a manner that allows the waste to volatilize to the atmosphere.

"Safety device" means a closure device such as a pressure relief valve, frangible disc, fusible plug, or any other type of device which functions exclusively to prevent physical damage or permanent deformation to a unit or its air emission control equipment by venting gases or vapors directly to the atmosphere during unsafe conditions resulting from an unplanned, accidental, or emergency event. For the purpose of this subpart, a safety device is not used for routine venting of gases or vapors from the vapor headspace underneath a cover such as during filling of the unit or to adjust the pressure in this vapor headspace in response to normal daily diurnal ambient temperature fluctuations. A safety device is designed to remain in a closed position during normal operations and open only when the internal pressure, or another relevant parameter, exceeds the device threshold setting applicable to the air emission control equipment as determined by the owner or operator based on manufacturer recommendations, applicable regulations, fire protection and prevention codes, standard engineering codes and practices, or other requirements for the safe handling of flammable, ignitable, explosive, reactive, or hazardous materials.

"Single-seal system" means a floating roof having one continuous seal. This seal may be vapor-mounted, liquid-mounted, or a metallic shoe seal.

"Vapor-mounted seal" means a continuous seal that is mounted such that there is a vapor space between the hazardous waste in the unit and the bottom of the seal.

"Volatile organic concentration" or "VO concentration" means the fraction by weight of the volatile organic compounds contained in a hazardous waste expressed in terms of parts per million (ppmw) as determined by direct measurement or by knowledge of the waste in accordance with the requirements of subparagraph (e) of this paragraph. For the purpose of determining the VO concentration of a hazardous waste, organic compounds with a Henry's law constant value of at least 0.1 mole-fraction-in-the-gas-phase/mole-fraction-in-the-liquid-phase (0.1 Y/X) (which can also be expressed as 1.8×10^{-6} atmospheres/ gram-mole/m^3) at 25 degrees Celsius must be included. Appendix VI of paragraph (53) of this rule presents a list of compounds known to have a Henry's law constant value less than the cutoff level.

"Waste determination" means performing all applicable procedures in accordance with the requirements of subparagraph (e) of this paragraph to determine whether a hazardous waste meets standards specified in this paragraph. Examples of a waste determination include performing the procedures in accordance with the requirements of subparagraph (e) of this paragraph to determine the average VO concentration of a hazardous waste at the point of waste origination; the average VO concentration of a hazardous waste at the point of waste treatment and comparing the results to the exit concentration limit specified for the process used to treat the hazardous waste; the organic reduction efficiency and the organic biodegradation efficiency for a biological process used to treat a hazardous waste and comparing the results to the applicable standards; or the maximum volatile organic vapor pressure for a hazardous waste in a tank and comparing the results to the applicable standards.

"Waste stabilization process" means any physical or chemical process used to either reduce the mobility of hazardous constituents in a hazardous waste or eliminate free liquids as determined by Test Method 9095B (Paint Filter Liquids Test) in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA Publication No. SW-846, (see CFR 260.11; Rule ~~1200-01-11-.01~~ 0400-12-01-.01(2)(b)1). A waste stabilization process includes mixing the hazardous waste with binders or other materials, and curing the resulting hazardous waste and binder mixture. Other synonymous terms used to refer to this process are "waste fixation" or "waste solidification." This does not include the adding of absorbent materials to the surface of a waste, without mixing, agitation, or subsequent curing, to absorb free liquid.

(c) Schedule for Implementation of Air Emission Standards [40 CFR 265.1082]

1. Owners or operators of facilities existing on December 6, 1996 and subject to paragraphs (9), (10) and (11) of this rule shall meet the following requirements:

(i) Install and begin operation of all control equipment or waste management units required to comply with this paragraph and complete modifications of production or treatment processes to satisfy exemption criteria in accordance with part (d)3 of this paragraph by December 6, 1996, except as provided for in subpart ~~1~~ (ii) of this ~~subparagraph~~ part.

(ii) When control equipment or waste management units required to comply with this paragraph cannot be installed and in operation or modifications of production or treatment processes to satisfy exemption criteria in accordance with part (d)3 of this paragraph cannot be completed by December 6, 1996, the owner or operator shall:

(I) Install and begin operation of the control equipment and waste management units, and complete modifications of production or treatment processes as soon as possible but no later than December 8, 1997.

(II) Prepare an implementation schedule that includes the following information: specific calendar dates for award of contracts or issuance of purchase orders for control equipment, waste management units, and production or treatment process modifications; initiation of on-site installation of control equipment or waste management units, and modifications of production or treatment processes; completion of control equipment or waste management unit installation, and production or treatment process modifications; and performance of testing to demonstrate that the installed equipment or waste management units and modified production or treatment processes meet the applicable standards of this paragraph.

(III) For facilities subject to the recordkeeping requirements of subparagraph (5)(d) of this rule, the owner or operator shall enter the implementation

schedule specified in item ~~1(ii)~~ (II) of this ~~subparagraph~~ subpart in the operating record no later than December 6, 1996.

(IV) For facilities not subject to subparagraph (5)(d) of this rule, the owner or operator shall enter the implementation schedule specified in item ~~1(ii)~~ (II) of this ~~subparagraph~~ subpart in a permanent, readily available file located at the facility no later than December 6, 1996.

2. Owners or operators of facilities and units in existence on the effective date of a statutory or regulatory amendment that renders the facility subject to paragraph (9), (10), or (11) of this rule shall meet the following requirements:

(i) Install and begin operation of control equipment or waste management units required to comply with this paragraph, and complete modifications of production or treatment processes to satisfy exemption criteria of part (d)3 of this paragraph by the effective date of the amendment, except as provided for in subpart ~~2~~ (ii) of this ~~subparagraph~~ part.

(ii) When control equipment or waste management units required to comply with this paragraph cannot be installed and begin operation, or when modifications of production or treatment processes to satisfy exemption criteria of part (d)3 of this paragraph cannot be completed by the effective date of the amendment, the owner or operator shall:

(I) Install and begin operation of the control equipment or waste management unit, and complete modification of production or treatment processes as soon as possible but no later than 30 months after the effective date of the amendment.

(II) For facilities subject to the recordkeeping requirements of subparagraph (5)(d) of this rule, enter and maintain the implementation schedule specified in item 1(ii)(II) of this subparagraph in the operating record no later than the effective date of the amendment, or

(III) For facilities not subject to subparagraph (5)(d) of this rule, the owner or operator shall enter and maintain the implementation schedule specified in item 1(ii)(II) of this subparagraph in a permanent, readily available file located at the facility site no later than the effective date of the amendment.

3. Owners and operators of facilities and units that become newly subject to the requirements of this paragraph after December 8, 1997 due to an action other than those described in part 2 of this subparagraph must comply with all applicable requirements immediately (i.e., must have control devices installed and operating on the date the facility or unit becomes subject to this paragraph; the 30-month implementation schedule does not apply).

4. The Commissioner may elect to extend the implementation date for control equipment at a facility, on a case by case basis, to a date later than December 8, 1997, when special circumstances that are beyond the facility owner's or operator's control delay installation or operation of control equipment, and the owner or operator has made all reasonable and prudent attempts to comply with the requirements of this paragraph.

(d) Standards: General [40 CFR 265.1083]

1. This subparagraph applies to the management of hazardous waste in tanks, surface impoundments, and containers subject to this paragraph.

2. The owner or operator shall control air pollutant emissions from each hazardous waste management unit in accordance with standards specified in subparagraphs (f) through (i) of this paragraph, as applicable to the hazardous waste management unit, except as provided for in part 3 of this subparagraph.

3. A tank, surface impoundment, or container is exempt from standards specified in subparagraph (f) through (i) of this paragraph, as applicable, provided that the waste management unit is one of the following:

(i) A tank, surface impoundment, or container for which all hazardous waste entering the unit has an average VO concentration at the point of waste origination of less than 500 parts per million by weight (ppmw). The average VO concentration shall be determined using the procedures specified in part (e)1 of this paragraph. The owner or operator shall review and update, as necessary, this determination at least once every 12 months following the date of the initial determination for the hazardous waste streams entering the unit.

(ii) A tank, surface impoundment, or container for which the organic content of all the hazardous waste entering the waste management unit has been reduced by an organic destruction or removal process that achieves any one of the following conditions:

(I) A process that removes or destroys the organics contained in the hazardous waste to a level such that the average VO concentration of the hazardous waste at the point of waste treatment is less than the exit concentration limit (C_t) established for the process. The average VO concentration of the hazardous waste at the point of waste treatment and the exit concentration limit for the process shall be determined using the procedures specified in part (e)2 of this paragraph.

(II) A process that removes or destroys the organics contained in the hazardous waste to a level such that the organic reduction efficiency (R) for the process is equal to or greater than 95 percent, and the average VO concentration of the hazardous waste at the point of waste treatment is less than 100 ppmw. The organic reduction efficiency for the process and the average VO concentration of the hazardous waste at the point of waste treatment shall be determined using the procedures specified in part (e)2 of this paragraph.

(III) A process that removes or destroys the organics contained in the hazardous waste to a level such that the actual organic mass removal rate (MR) for the process is equal to or greater than the required organic mass removal rate (RMR) established for the process. The required organic mass removal rate and the actual organic mass removal rate for the process shall be determined using the procedures specified in part (e)2 of this paragraph.

(IV) A biological process that destroys or degrades the organics contained in the hazardous waste, such that either of the following conditions is met:

I. The organic reduction efficiency (R) for the process is equal to or greater than 95 percent, and the organic biodegradation efficiency (R_{bio}) for the process is equal to or greater than 95 percent. The organic reduction efficiency and the organic biodegradation efficiency for the process shall be determined using the procedures specified in part (e)2 of this paragraph.

II. The total actual organic mass biodegradation rate (MR_{bio}) for all hazardous waste treated by the process is equal to or greater

than the required organic mass removal rate (RMR). The required organic mass removal rate and the actual organic mass biodegradation rate for the process shall be determined using the procedures specified in part (e)2 of this paragraph.

(V) A process that removes or destroys the organics contained in the hazardous waste and meets all of the following conditions:

I. From the point of waste origination through the point where the hazardous waste enters the treatment process, the hazardous waste is continuously managed in waste management units which use air emission controls in accordance with the standards specified in subparagraphs (f) through (i) of this paragraph, as applicable to the waste management unit.

II. From the point of waste origination through the point where the hazardous waste enters the treatment process, any transfer of the hazardous waste is accomplished through continuous hard-piping or other closed system transfer that does not allow exposure of the waste to the atmosphere. The Department considers a drain system that meets the requirements of 40 CFR part 63, subpart RR-National Emission Standards for Individual Drain Systems to be a closed system.

III. The average VO concentration of the hazardous waste at the point of waste treatment is less than the lowest average VO concentration at the point of waste origination determined for each of the individual hazardous waste streams entering the process or 500 ppmw, whichever value is lower. The average VO concentration of each individual hazardous waste stream at the point of waste origination shall be determined using the procedure specified in part (e)1 of this paragraph. The average VO concentration of the hazardous waste at the point of waste treatment shall be determined using the procedure specified in part (e)2 of this paragraph.

(VI) A process that removes or destroys the organics contained in the hazardous waste to a level such that the organic reduction efficiency (R) for the process is equal to or greater than 95 percent and the owner or operator certifies that the average VO concentration at the point of waste origination for each of the individual waste streams entering the process is less than 10,000 ppmw. The organic reduction efficiency for the process and the average VO concentration of the hazardous waste at the point of waste origination shall be determined using the procedures specified in parts (e)2 and (e)1 of this paragraph, respectively.

(VII) A hazardous waste incinerator for which the owner or operator has either:

I. Been issued a final permit under Rule ~~1200-01-11-.07~~ 0400-12-01-.07, and designs and operates the unit in accordance with the requirements of Rule ~~1200-01-11-.06~~ 0400-12-01-.06(15); or

II. Has designed and operates the incinerator in accordance with the interim status requirements of paragraph (15) of this rule.

(VIII) A boiler or industrial furnace for which the owner or operator has either:

I. Been issued a final permit under Rule ~~1200-01-11-.07~~ 0400-12-

01-.07 and which implements the requirements of Rule ~~1200-01-11-.09~~ 0400-12-01-.09(8), or

II. Has designed and operates the boiler or industrial furnace in accordance with the interim status requirements of Rule ~~1200-01-11-.09~~ 0400-12-01-.09(8).

(IX) For the purpose of determining the performance of an organic destruction or removal process in accordance with the conditions in each of items ~~3(ii)~~ (I) through ~~3(ii)~~ (VI) of this ~~subparagraph~~ subpart, the owner or operator shall account for VO concentrations determined to be below the limit of detection of the analytical method by using the following VO concentration:

I. If Method 25D in 40 CFR part 60, appendix A is used for the analysis, one-half the blank value determined in the method at section 4.4 of Method 25D in 40 CFR part 60, appendix A, or a value of 25 ppmw, whichever is less.

II. If any other analytical method is used, one-half the sum of the limits of detection established for each organic constituent in the waste that has a Henry's law constant value at least 0.1 mole-fraction-in-the-gas-phase/mole-fraction-in-the-liquid-phase (0.1 Y/X) [which can also be expressed as 1.8×10^{-6} atmospheres/gram-mole/m^3] at 25 degrees Celsius.

(iii) A tank or surface impoundment used for biological treatment of hazardous waste in accordance with the requirements of item ~~3~~ (ii)(IV) of this ~~subparagraph~~ part.

(iv) A tank, surface impoundment, or container for which all hazardous waste placed in the unit either:

(I) Meets the numerical concentration limits for organic hazardous constituents, applicable to the hazardous waste, as specified in Rule ~~1200-01-11-.10~~ 0400-12-01-.10--Land Disposal Restrictions under Table "Treatment Standards for Hazardous Waste in Rule ~~1200-01-11-.10~~ 0400-12-01-.10(3)(a); or

(II) The organic hazardous constituents in the waste have been treated by the treatment technology established by the Department for the waste in Rule ~~1200-01-11-.10~~ 0400-12-01-.10(3)(c)1, or have been removed or destroyed by an equivalent method of treatment approved by the Department pursuant to Rule ~~1200-01-11-.10~~ 0400-12-01-.10(3)(c)2.

(v) A tank used for bulk feed of hazardous waste to a waste incinerator and all of the following conditions are met:

(I) The tank is located inside an enclosure vented to a control device that is designed and operated in accordance with all applicable requirements specified under 40 CFR part 61, subpart FF--National Emission Standards for Benzene Waste Operations for a facility at which the total annual benzene quantity from the facility waste is equal to or greater than 10 megagrams per year;

(II) The enclosure and control device serving the tank were installed and began operation prior to November 25, 1996 and

(III) The enclosure is designed and operated in accordance with the criteria for a permanent total enclosure as specified in "Procedure T--Criteria for

and Verification of a Permanent or Temporary Total Enclosure" under 40 CFR 52.741, appendix B. The enclosure may have permanent or temporary openings to allow worker access; passage of material into or out of the enclosure by conveyor, vehicles, or other mechanical or electrical equipment; or to direct air flow into the enclosure. The owner or operator shall perform the verification procedure for the enclosure as specified in Section 5.0 to "Procedure T--Criteria for and Verification of a Permanent or Temporary Total Enclosure" annually.

4. The Commissioner may at any time perform or request that the owner or operator perform a waste determination for a hazardous waste managed in a tank, surface impoundment, or container exempted from using air emission controls under the provisions of this subparagraph as follows:

(i) The waste determination for average VO concentration of a hazardous waste at the point of waste origination shall be performed using direct measurement in accordance with the applicable requirements of part (e)1 of this paragraph. The waste determination for a hazardous waste at the point of waste treatment shall be performed in accordance with the applicable requirements of part (e)2 of this paragraph.

(ii) In performing a waste determination pursuant to subpart (i) of this part, the sample preparation and analysis shall be conducted as follows:

(I) In accordance with the method used by the owner or operator to perform the waste analysis, except in the case specified in item ~~(ii)~~ (II) of this ~~part~~ subpart.

(II) If the Commissioner determines that the method used by the owner or operator was not appropriate for the hazardous waste managed in the tank, surface impoundment, or container, then the Commissioner may choose an appropriate method.

(iii) In a case when the owner or operator is requested to perform the waste determination, the Commissioner may elect to have an authorized representative observe the collection of the hazardous waste samples used for the analysis.

(iv) In a case when the results of the waste determination performed or requested by the Commissioner do not agree with the results of a waste determination performed by the owner or operator using knowledge of the waste, then the results of the waste determination performed in accordance with the requirements of subpart 4 (i) of this ~~subparagraph~~ part shall be used to establish compliance with the requirements of this paragraph.

(v) In a case when the owner or operator has used an averaging period greater than 1 hour for determining the average VO concentration of a hazardous waste at the point of waste origination, the Commissioner may elect to establish compliance with this paragraph by performing or requesting that the owner or operator perform a waste determination using direct measurement based on waste samples collected within a 1-hour period as follows:

(I) The average VO concentration of the hazardous waste at the point of waste origination shall be determined by direct measurement in accordance with the requirements of part (e)1 of this paragraph.

(II) Results of the waste determination performed or requested by the Commissioner showing that the average VO concentration of the hazardous waste at the point of waste origination is equal to or greater than 500 ppmw shall constitute noncompliance with this paragraph

except in a case as provided for in item 4~~(v)~~ (III) of this ~~subparagraph~~ subpart.

(III) For the case when the average VO concentration of the hazardous waste at the point of waste origination previously has been determined by the owner or operator using an averaging period greater than 1 hour to be less than 500 ppmw but because of normal operating process variations the VO concentration of the hazardous waste determined by direct measurement for any given 1-hour period may be equal to or greater than 500 ppmw, information that was used by the owner or operator to determine the average VO concentration of the hazardous waste (e.g., test results, measurements, calculations, and other documentation) and recorded in the facility records in accordance with the requirements of part (e)1 and subparagraph (k) of this paragraph shall be considered by the Commissioner together with the results of the waste determination performed or requested by the Commissioner in establishing compliance with this paragraph.

(e) Waste Determination Procedures [40 CFR 265.1084]

1. Waste determination procedure to determine average volatile organic (VO) concentration of a hazardous waste at the point of waste origination.

(i) An owner or operator shall determine the average VO concentration at the point of waste origination for each hazardous waste placed in a waste management unit exempted under the provisions of subpart (d)3(i) of this paragraph from using air emission controls in accordance with standards specified in subparagraph (f) through (i) of this paragraph, as applicable to the waste management unit.

(ii) For a waste determination that is required by subpart ~~1~~ (i) of this ~~subparagraph~~ part, the average VO concentration of a hazardous waste at the point of waste origination shall be determined using either direct measurement as specified in subpart ~~1~~ (iii) of this ~~subparagraph~~ part or by knowledge as specified in subpart ~~1~~ (iv) of this ~~subparagraph~~ part.

(I) An initial determination of the average VO concentration of the waste stream shall be made before the first time any portion of the material in the hazardous waste stream is placed in a waste management unit exempted under the provisions of subpart (d)3(i) of this paragraph from using air emission controls, and thereafter an initial determination of the average VO concentration of the waste stream shall be made for each averaging period that a hazardous waste is managed in the unit; and

(II) Perform a new waste determination whenever changes to the source generating the waste stream are reasonably likely to cause the average VO concentration of the hazardous waste to increase to a level that is equal to or greater than the VO concentration limit specified in subpart (d)3(i) of this paragraph.

(iii) Direct measurement to determine average VO concentration of a hazardous waste at the point of waste origination.

(I) Identification. The owner or operator shall identify and record the point of waste origination for the hazardous waste.

(II) Sampling. Samples of the hazardous waste stream shall be collected at the point of waste origination in a manner such that volatilization of organics contained in the waste and in the subsequent sample is minimized and an adequately representative sample is collected and

maintained for analysis by the selected method.

I. The averaging period to be used for determining the average VO concentration for the hazardous waste stream on a mass-weighted average basis shall be designated and recorded. The averaging period can represent any time interval that the owner or operator determines is appropriate for the hazardous waste stream but shall not exceed 1 year.

II. A sufficient number of samples, but no less than four samples, shall be collected and analyzed for a hazardous waste determination. All of the samples for a given waste determination shall be collected within a one-hour period. The average of the four or more sample results constitutes a waste determination for the waste stream. One or more waste determinations may be required to represent the complete range of waste compositions and quantities that occur during the entire averaging period due to normal variations in the operating conditions for the source or process generating the hazardous waste stream. Examples of such normal variations are seasonal variations in waste quantity or fluctuations in ambient temperature.

III. All samples shall be collected and handled in accordance with written procedures prepared by the owner or operator and documented in a site sampling plan. This plan shall describe the procedure by which representative samples of the hazardous waste stream are collected such that a minimum loss of organics occurs throughout the sample collection and handling process, and by which sample integrity is maintained. A copy of the written sampling plan shall be maintained on-site in the facility operating records. An example of acceptable sample collection and handling procedures for a total volatile organic constituent concentration may be found in Method 25D in 40 CFR part 60, Appendix A.

IV. Sufficient information, as specified in the "site sampling plan" required under subitem ~~1(iii)(II)~~ III of this ~~subparagraph~~ item, shall be prepared and recorded to document the waste quantity represented by the samples, as applicable, the operating conditions for the source or process generating the hazardous waste represented by the samples.

(III) Analysis. Each collected sample shall be prepared and analyzed in accordance with Method 25D in 40 CFR part 60, appendix A for the total concentration of volatile organic constituents, or using one or more methods when the individual organic compound concentrations are identified and summed and the summed waste concentration accounts for and reflects all organic compounds in the waste with Henry's law constant values at least 0.1 mole-fraction-in-the-gas-phase/mole-fraction-in-the-liquid-phase (0.1 Y/X) [which can also be expressed as 1.8×10^{-6} atmospheres/gram-mole/m^3] at 25 degrees Celsius. At the owner or operator's discretion, the owner or operator may adjust test data obtained by any appropriate method to discount any contribution to the total volatile organic concentration that is a result of including a compound with a Henry's law constant value of less than 0.1 Y/X at 25 degrees Celsius. To adjust these data, the measured concentration of each individual chemical constituent contained in the waste is multiplied by the appropriate constituent-specific adjustment factor (f_{m25D}). If the

owner or operator elects to adjust test data, the adjustment must be made to all individual chemical constituents with a Henry's law constant value greater than or equal to 0.1 Y/X at 25 degrees Celsius contained in the waste. Constituent-specific adjustment factors (f_{m25D}) can be obtained by contacting the Waste and Chemical Processes Group, Office of Air Quality Planning and Standards, Research Triangle Park, NC 27711. Other test methods may be used if they meet the requirements in item I or II of this subpart and provided the requirement to reflect all organic compounds in the waste with Henry's law constant values greater than or equal to 0.1 Y/X [which can also be expressed as 1.8×10^{-6} atmospheres/gram-mole/m^3] at 25 degrees Celsius, is met.

I. Any EPA standard method that has been validated in accordance with "Alternative Validation Procedure for EPA Waste and Wastewater Methods", 40 CFR Part 63, Appendix D.

II. Any other analysis method that has been validated in accordance with the procedures specified in Section 5.1 or Section 5.3, and the corresponding calculations in Section 6.1 or Section 6.3, of Method 301 in 40 CFR Part 63, appendix A. The data are acceptable if they meet the criteria specified in Section 6.1.5 or Section 6.3.3 of Method 301. If correction is required under section 6.3.3 of Method 301, the data are acceptable if the correction factor is within the range 0.7 to 1.30. Other sections of Method 301 are not required.

(IV) I. Calculations. The average VO concentration ($\overline{C}$) on a mass-weighted basis shall be calculated by using the results for all waste determinations conducted in accordance with items ~~1(iii)~~ (II) and (III) of this ~~subparagraph~~ subpart and the following equation:

$$\overline{C} = \frac{1}{Q_T} x \sum_{i=1}^{n} (Q_i x C_i)$$

Where:

$\overline{C}$ = Average VO concentration of the hazardous waste at the point of waste origination on a mass-weighted basis, ppmw.

i = Individual waste determination "i" of the hazardous waste.

n = Total number of waste determinations of the hazardous waste conducted for the averaging period (not to exceed 1 year).

Q_i = Mass quantity of hazardous waste stream represented by C_i, kg/hr.

Q_T = Total mass quantity of hazardous waste during the averaging period, kg/hr.

C_i = Measured VO concentration of waste determination "i" as determined in accordance with the requirements of item 1(iii)(III) of this subparagraph, (i.e., the average of the four or

more samples specified in subitem 1(iii)(II)II of this subparagraph), ppmw.

II. For the purposes of determining C_i, for individual waste samples analyzed in accordance with item ~~1(iii)~~ (III) of this ~~subparagraph~~ subpart, the owner or operator shall account for VO concentrations determined to be below the limit of detection of the analytical method by using the following VO concentration:

A. If Method 25D in 40 CFR Part 60, Appendix A is used for the analysis, one-half the blank value determined in the method at section 4.4 of Method 25D in 40 CFR Part 60, Appendix A.

B. If any other analytical method is used, one-half the sum of the limits of detection established for each organic constituent in the waste that has a Henry's law constant value at least 0.1 mole-fraction-in-the-gas-phase/mole-fraction-in-the-liquid-phase (0.1 Y/X) [which can also be expressed as 1.8×10^{-6} atmospheres/gram-mole/m^3] at 25 degrees Celsius.

(V) Provided that the test method is appropriate for the waste as required under item ~~1(iii)~~ (III) of this ~~subparagraph~~ subpart, the Department will determine compliance based on the test method used by the owner or operator as recorded pursuant to subpart (k)6(i) of this paragraph.

(iv) Use of owner or operator knowledge to determine average VO concentration of a hazardous waste at the point of waste origination.

(I) Documentation shall be prepared that presents the information used as the basis for the owner's or operator's knowledge of the hazardous waste stream's average VO concentration. Examples of information that may be used as the basis for knowledge include: Material balances for the source or process generating the hazardous waste stream; constituent-specific chemical test data for the hazardous waste stream from previous testing that are still applicable to the current waste stream; previous test data for other locations managing the same type of waste stream; or other knowledge based on information included in manifests, shipping papers, or waste certification notices.

(II) If test data are used as the basis for knowledge, then the owner or operator shall document the test method, sampling protocol, and the means by which sampling variability and analytical variability are accounted for in the determination of the average VO concentration. For example, an owner or operator may use organic concentration test data for the hazardous waste stream that are validated in accordance with Method 301 in 40 CFR part 63, appendix A as the basis for knowledge of the waste.

(III) An owner or operator using chemical constituent-specific concentration test data as the basis for knowledge of the hazardous waste may adjust the test data to the corresponding average VO concentration value which would have been obtained had the waste samples been analyzed using Method 25D in 40 CFR part 60, appendix A. To adjust these data, the measured concentration for each individual chemical constituent contained in the waste is multiplied by the appropriate constituent-specific adjustment factor (f_{m25D}).

(IV) In the event that the Commissioner and the owner or operator disagree on a determination of the average VO concentration for a hazardous waste stream using knowledge, then the results from a determination of average VO concentration using direct measurement as specified in subpart ~~1~~ (iii) of this ~~subparagraph~~ part shall be used to establish compliance with the applicable requirements of this paragraph. The Commissioner may perform or request that the owner or operator perform this determination using direct measurement. The owner or operator may choose one or more appropriate methods to analyze each collected sample in accordance with the requirements of item ~~1~~ (iii)(III) of this ~~subparagraph~~ part.

2. Waste determination procedures for treated hazardous waste.

(i) An owner or operator shall perform the applicable waste determination for each treated hazardous waste placed in a waste management unit exempted under the provisions of items (d)3(ii)(I) through ~~(d)3(ii)~~ (VI) of this paragraph from using air emission controls in accordance with standards specified in subparagraphs (f) through (i) of this paragraph, as applicable to the waste management unit.

(I) An initial determination of the average VO concentration of the waste stream shall be made before the first time any portion of the material in the treated waste stream is placed in a waste management unit exempted under the provision of subparts (d)3(ii), (iii) or (iv) of this paragraph from using air emission controls, and thereafter update the information used for the waste determination at least once every 12 months following the date of the initial waste determination; and

(II) Perform a new waste determination whenever changes to the process generating or treating the waste stream are reasonably likely to cause the average VO concentration of the hazardous waste to increase to a level such that the applicable treatment conditions specified in subparts (d)3(ii), (iii) or (iv) of this paragraph are not achieved.

(ii) The owner or operator shall designate and record the specific provision in subpart (d)3(ii) of this paragraph under which the waste determination is being performed. The waste determination for the treated hazardous waste shall be performed using the applicable procedures specified in subpart ~~2~~ (iii) through ~~2~~ (ix) of this ~~subparagraph~~ part.

(iii) Procedure to determine the average VO concentration of a hazardous waste at the point of waste treatment.

(I) Identification. The owner or operator shall identify and record the point of waste treatment for the hazardous waste.

(II) Sampling. Samples of the hazardous waste stream shall be collected at the point of waste treatment in a manner such that volatilization of organics contained in the waste and in the subsequent sample is minimized and an adequately representative sample is collected and maintained for analysis by the selected method.

I. The averaging period to be used for determining the average VO concentration for the hazardous waste stream on a mass-weighted average basis shall be designated and recorded. The averaging period can represent any time interval that the owner or operator determines is appropriate for the hazardous waste stream but shall not exceed 1 year.

II. A sufficient number of samples, but no less than four samples, shall be collected and analyzed for a hazardous waste determination. All of the samples for a given waste determination shall be collected within a one-hour period. The average of the four or more sample results constitutes a waste determination for the waste stream. One or more waste determinations may be required to represent the complete range of waste compositions and quantities that occur during the entire averaging period due to normal variations in the operating conditions for the process generating or treating the hazardous waste stream. Examples of such normal variations are seasonal variations in waste quantity or fluctuations in ambient temperature.

III. All samples shall be collected and handled in accordance with written procedures prepared by the owner or operator and documented in a site sampling plan. This plan shall describe the procedure by which representative samples of the hazardous waste stream are collected such that a minimum loss of organics occurs throughout the sample collection and handling process, and by which sample integrity is maintained. A copy of the written sampling plan shall be maintained on-site in the facility operating records. An example of acceptable sample collection and handling procedures for a total volatile organic constituent concentration may be found in Method 25D in 40 CFR part 60, appendix A.

IV. Sufficient information, as specified in the "site sampling plan" required under subitem III of this item, shall be prepared and recorded to document the waste quantity represented by the samples and, as applicable, the operating conditions for the process treating the hazardous waste represented by the samples.

(III) Analysis. Each collected sample shall be prepared and analyzed in accordance with Method 25D in 40 CFR part 60, Appendix A for the total concentration of volatile organic constituents, or using one or more methods when the individual organic compound concentrations are identified and summed and the summed waste concentration accounts for and reflects all organic compounds in the waste with Henry's law constant values at least 0.1 mole-fraction-in-the-gas-phase/mole-fraction-in-the-liquid-phase (0.1 Y/X) [which can also be expressed as 1.8×10^{-6} atmospheres/gram-mole/m^3] at 25 degrees Celsius. When the owner or operator is making a waste determination for a treated hazardous waste that is to be compared to an average VO concentration at the point of waste origination or the point of waste entry to the treatment system to determine if the conditions of items (I) through (VI) of subpart (32)(c)3(i) of Rule ~~1200-01-11-.06~~ 0400-12-01-.06, or items (d)3(ii)(I) through (VI) ~~of subpart (29)(d)3(ii)~~ of this ~~Rule~~ paragraph are met, then the waste samples shall be prepared and analyzed using the same method or methods as were used in making the initial waste determinations at the point of waste origination or at the point of entry to the treatment system. At the owner or operator's discretion, the owner or operator may adjust test data obtained by any appropriate method to discount any contribution to the total volatile organic concentration that is a result of including a compound with a Henry's law constant value less than 0.1 Y/X at 25 degrees Celsius. To adjust these data, the measured concentration of each individual chemical constituent in the waste is multiplied by the appropriate constituent-specific adjustment factor

(f_{m25D}). If the owner or operator elects to adjust test data, the adjustment must be made to all individual chemical constituents with a Henry's law constant value greater than or equal to 0.1 Y/X at 25 degrees Celsius contained in the waste. Constituent-specific adjustment factors (f_{m25D}) can be obtained by contacting the Waste and Chemical Processes Group, Office of Air Quality Planning and Standards, Research Triangle Park, NC 27711. Other test methods may be used if they meet the requirements item I or II of this subpart and provided the requirement to reflect all organic compounds in the waste with Henry's law constant values greater than or equal to 0.1 Y/X [which can also be expressed as 1.8×10^{-6} atmospheres/gram-mole/m^3] at 25 degrees Celsius, is met.

I. Any EPA standard method that has been validated in accordance with "Alternative Validation Procedure for EPA Waste and Wastewater Methods", 40 CFR Part 63, Appendix D.

II. Any other analysis method that has been validated in accordance with the procedures specified in Section 5.1 or Section 5.3, and the corresponding calculations in Section 6.1 or Section 6.3, of Method 301 in 40 CFR Part 63, appendix A. The data are acceptable if they meet the criteria specified in Section 6.1.5 or Section 6.3.3 of Method 301. If correction is required under section 6.3.3 of Method 301, the data are acceptable if the correction factor is within the range 0.7 to 1.30. Other sections of Method 301 are not required.

(IV) Calculations. The average VO concentration ($\overline{C}$) on a mass- weighted basis shall be calculated by using the results for all waste determinations conducted in accordance with items ~~2(iii)~~ (II) and (III) of this ~~subparagraph~~ subpart and the following equation:

$$\overline{C} = \frac{1}{Q_T} x \sum_{i=1}^{n} (Q_i x C_i)$$

Where:

$\overline{C}$ = Average VO concentration of the hazardous waste at the point of waste treatment on a mass-weighted basis, ppmw.

i = Individual waste determination "i" of the hazardous waste.

n = Total number of waste determinations of the hazardous waste conducted for the averaging period (not to exceed 1 year).

Q_i = Mass quantity of hazardous waste stream represented by C_i, kg/hr.

Q_T = Total mass quantity of hazardous waste during the averaging period, kg/hr.

C_i = Measured VO concentration of waste determination "i" as determined in accordance with the requirements of item ~~2(iii)~~ (III) of this ~~subparagraph~~ subpart (i.e. the average of the four or more samples specified in subitem ~~2(iii)~~ (II)II of this ~~subparagraph~~ subpart), ppmw.

(V) Provided that the test method is appropriate for the waste as required under item ~~2(iii)~~ (III) of this ~~subparagraph~~ subpart, compliance shall be determined based on the test method used by the owner or operator as recorded pursuant to subpart (k)6(i) of this paragraph.

(iv) Procedure to determine the exit concentration limit (C_t) for a treated hazardous waste.

(I) The point of waste origination for each hazardous waste treated by the process at the same time shall be identified.

(II) If a single hazardous waste stream is identified in item ~~2(iv)~~ (I) of this ~~subparagraph~~ subpart, then the exit concentration limit (C_t) shall be 500 ppmw.

(III) If more than one hazardous waste stream is identified in item ~~2(iv)~~ (I) of this ~~subparagraph~~ subpart, then the average VO concentration of each hazardous waste stream at the point of waste origination shall be determined in accordance with the requirements of part 1 of this subparagraph. The exit concentration limit (C_t) shall be calculated by using the results determined for each individual hazardous waste stream and the following equation:

$$C_t = \frac{\sum_{x=1}^{m}\left(Q_x x \overline{C_x}\right) + \sum_{y=1}^{n}\left(Q_y x 500\,ppmw\right)}{\sum_{x=1}^{m} Q_x + \sum_{y=1}^{n} Q_y}$$

Where:

C_t = Exit concentration limit for treated hazardous waste, ppmw.

x = Individual hazardous waste stream "x" that has an average VO concentration less than 500 ppmw at the point of waste origination as determined in accordance with the requirements of part (e)1 of this paragraph.

y = Individual hazardous waste stream "y" that has an average VO concentration equal to or greater than 500 ppmw at the point of waste origination as determined in accordance with the requirements of part (e)1 of this paragraph.

m = Total number of "x" hazardous waste streams treated by process.

n = Total number of "y" hazardous waste streams treated by process.

Q_x = Annual mass quantity of hazardous waste stream "x," kg/yr.

Q_y = Annual mass quantity of hazardous waste stream "y," kg/yr.

$\overline{C}$ = Average VO concentration of hazardous waste stream "x" at the point of waste origination as determined in accordance with the requirements of part (e)1 of this paragraph, ppmw.

(v) Procedure to determine the organic reduction efficiency (R) for a treated hazardous waste.

(I) The organic reduction efficiency (R) for a treatment process shall be determined based on results for a minimum of three consecutive runs.

(II) All hazardous waste streams entering the treatment process and all hazardous waste streams exiting the treatment process shall be identified. The owner or operator shall prepare a sampling plan for measuring these streams that accurately reflects the retention time of the hazardous waste in the process.

(III) For each run, information shall be determined for each hazardous waste stream identified in item 2(v)(II) of this subparagraph using the following procedures:

I. The mass quantity of each hazardous waste stream entering the process (Q_b) and the mass quantity of each hazardous waste stream exiting the process (Q_a) be determined.

II. The average VO concentration at the point of waste origination of each hazardous waste stream entering the process ($\overline{C}_b$) during the run shall be determined in accordance with the requirements of subpart 1(iii) of this subparagraph. The average VO concentration at the point of waste treatment of each waste stream exiting the process ($\overline{C}_a$) during the run shall be determined in accordance with the requirements of subpart 2(iii) of this subparagraph.

(IV) The waste volatile organic mass flow entering the process (E_b) and the waste volatile organic mass flow exiting the process (E_a) shall be calculated by using the results determined in accordance with item ~~2(v)~~ (III) of this ~~subparagraph~~ subpart and the following equations:

$$E_b = \frac{1}{10^6}\sum_{j=1}^{m}\left(Q_{bj}x\overline{C_{bj}}\right)$$

$$E_a = \frac{1}{10^6}\sum_{j=1}^{m}\left(Q_{aj}x\overline{C_{aj}}\right)$$

Where:

E_a = Waste volatile organic mass flow exiting process, kg/hr.

E_b = Waste volatile organic mass flow entering process, kg/hr.

m = Total number of runs (at least 3)

j = Individual run "j"

Q_b = Mass quantity of hazardous waste entering process during run "j," kg/hr.

Q_a = Average mass quantity of hazardous waste exiting process during run "j," kg/hr.

$\overline{C}_a$ = Average VO concentration of hazardous waste exiting process during run "j" as determined in accordance with the requirements of subpart (e)2(iii) of this paragraph, ppmw.

$\overline{C}_b$ = Average VO concentration of hazardous waste entering process during run "j" as determined in accordance with the requirements of subpart (e)1(iii) of this paragraph, ppmw.

(V) The organic reduction efficiency of the process shall be calculated by using the results determined in accordance with item ~~2(v)~~ (IV) of this ~~subparagraph~~ subpart and the following equation:

$$R = \frac{E_b - E_a}{E_b} x100\%$$

Where:

R = Organic reduction efficiency, percent.

E_b = Waste volatile organic mass flow entering process as determined in accordance with the requirements of item ~~2(v)~~ (IV) of this ~~subparagraph~~ subpart, kg/hr.

E_a = Waste volatile organic mass flow exiting process as determined in accordance with the requirements of item ~~2(v)~~ (IV) of this ~~subparagraph~~ subpart, kg/hr.

(vi) Procedure to determine the organic biodegradation efficiency (R_{bio}) for a treated hazardous waste.

(I) The fraction of organics biodegraded (F_{bio}) shall be determined using the procedure specified in 40 CFR part 63, appendix C of this chapter.

(II) The R_{bio} shall be calculated by using the following equation:

$R_{bio} = F_{bio} \times 100\%$

Where:

R_{bio} = Organic biodegradation efficiency, percent.

F_{bio} = Fraction of organic biodegraded as determined in accordance with the requirements of item ~~2(vi)~~ (I) of this ~~subparagraph~~ subpart.

(vii) Procedure to determine the required organic mass removal rate (RMR) for a treated hazardous waste.

(I) All of the hazardous waste streams entering the treatment process shall be identified.

(II) The average VO concentration of each hazardous waste stream at the point of waste origination shall be determined in accordance with the requirements of part 1 of this subparagraph.

(III) For each individual hazardous waste stream that has an average VO concentration equal to or greater than 500 ppmw at the point of waste origination, the average volumetric flow rate and the density of the hazardous waste stream at the point of waste origination shall be determined.

(IV) The RMR shall be calculated by using the average VO concentration, average volumetric flow rate, and density determined for each individual hazardous waste stream, and the following equation:

$$RMR = \sum_{y=1}^{n}\left[V_y x k_y x \frac{\left(\overline{C_y} - 500 ppmw\right)}{10^6}\right]$$

Where:

RMR = Required organic mass removal rate, kg/hr.

y = Individual hazardous waste stream "y" that has an average VO concentration equal to or greater than 500 ppmw at the point of waste origination as determined in accordance with the requirements of part (e)1 of this paragraph.

n = Total number of "y" hazardous waste streams treated by process.

V_y = Average volumetric flow rate of hazardous waste stream "y" at the point of waste origination, m^3/hr.

k_y = Density of hazardous waste stream "y," kg/m^3

$\overline{C}_y$ = Average VO concentration of hazardous waste stream "y" at the point of waste origination as determined in accordance with the requirements of part (e)1 of this paragraph, ppmw.

(viii) Procedure to determine the actual organic mass removal rate (MR) for a treated hazardous waste.

(I) The MR shall be determined based on results for a minimum of three consecutive runs. The sampling time for each run shall be 1 hour.

(II) The waste volatile organic mass flow entering the process (E_b) and the waste volatile organic mass flow exiting the process (E_a) shall be determined in accordance with the requirements of item ~~2~~ (v)(IV) of this ~~subparagraph~~ part.

(III) The MR shall be calculated by using the mass flow rate determined in accordance with the requirements of item ~~2(viii)~~ (II) of this ~~subparagraph~~ subpart and the following equation:

$MR = E_b - E_a$

Where:

MR = Actual organic mass removal rate, kg/hr.

E_b = Waste volatile organic mass flow entering process as determined in accordance with the requirements of item ~~2~~ (v)(IV) of this ~~subparagraph~~ part, kg/hr.

E_a = Waste volatile organic mass flow exiting process as determined in accordance with the requirements of item ~~2~~ (v)(IV) of this ~~subparagraph~~ part, kg/hr.

(ix) Procedure to determine the actual organic mass biodegradation rate (MR_{bio}) for a treated hazardous waste.

(I) The MR_{bio} shall be determined based on results for a minimum of three consecutive runs. The sampling time for each run shall be 1 hour.

(II) The waste organic mass flow entering the process (E_b) shall be determined in accordance with the requirements of item ~~2~~ (v)(IV) of this ~~subparagraph~~ part.

(III) The fraction of organic biodegraded (F_{bio}) shall be determined using the procedure specified in 40 CFR Part 63, Appendix C of this chapter.

(IV) The MR_{bio} shall be calculated by using the mass flow rates and fraction of organic biodegraded determined in accordance with the requirements of items ~~2(ix)~~ (II) and ~~2(ix)~~ (III) of this ~~subparagraph~~ subpart, respectively, and the following equation:

$$MR_{bio} = E_b \times F_{bio}$$

Where:

MR_{bio} = Actual organic mass biodegradation rate, kg/hr.

E_b = Waste organic mass flow entering process as determined in accordance with the requirements of item ~~2~~ (v)(IV) of this ~~subparagraph~~ part, kg/hr.

F_{bio} = Fraction of organic biodegraded as determined in accordance with the requirements of item ~~2(ix)~~ (III) of this ~~subparagraph~~ subpart.

3. Procedure to determine the maximum organic vapor pressure of a hazardous waste in a tank.

(i) An owner or operator shall determine the maximum organic vapor pressure for each hazardous waste placed in a tank using Tank Level 1 controls in accordance with the standards specified in part (f)3 of this paragraph.

(ii) An owner or operator shall use either direct measurement as specified in subpart ~~3~~ (iii) of this ~~subparagraph~~ part or knowledge of the waste as specified by subpart ~~3~~ (iv) of this ~~subparagraph~~ part to determine the maximum organic vapor pressure which is representative of the hazardous waste composition stored or treated in the tank.

(iii) Direct measurement to determine the maximum organic vapor pressure of a hazardous waste.

(I) Sampling. A sufficient number of samples shall be collected to be representative of the waste contained in the tank. All samples shall be collected and handled in accordance with written procedures prepared by the owner or operator and documented in a site sampling plan. This plan shall describe the procedure by which representative samples of the hazardous waste are collected such that a minimum loss of organics occurs throughout the sample collection and handling process and by which sample integrity is maintained. A copy of the written sampling plan shall be maintained on-site in the facility operating records. An example of acceptable sample collection and handling procedures may be found in Method 25D in 40 CFR Part 60, Appendix A.

(II) Analysis. Any appropriate one of the following methods may be used to analyze the samples and compute the maximum organic vapor pressure of the hazardous waste:

I. Method 25E in 40 CFR part 60 Appendix A;

II. Methods described in American Petroleum Institute Publication 2517, Third Edition, February 1989, "Evaporative Loss from External Floating-Roof Tanks," (listed in 40 CFR 260.11; Rule ~~1200-01-11-.01~~ 0400-12-01-.01(2)(b)1):

III. Methods obtained from standard reference texts;

IV. ASTM Method 2879-92 (listed in Rule ~~1200-01-11-.01~~ 0400-12-01-.01(2)(b)); and

V. Any other method approved by the Commissioner.

(iv) Use of knowledge to determine the maximum organic vapor pressure of the hazardous waste. Documentation shall be prepared and recorded that presents the information used as the basis for the owner's or operator's knowledge that the maximum organic vapor pressure of the hazardous waste is less than the maximum vapor pressure limit listed in item (f)2(i)(I) of this paragraph for the applicable tank design capacity category. An example of information that may be used is documentation that the hazardous waste is generated by a process for which at other locations it previously has been determined by direct measurement that the waste maximum organic vapor pressure is less than the maximum vapor pressure limit for the appropriate tank design capacity category.

4. Procedure for determining no detectable organic emissions for the purpose of complying with this paragraph:

(i) The test shall be conducted in accordance with the procedures specified in Method 21 of 40 CFR Part 60, Appendix A. Each potential leak interface (i.e., a location where organic vapor leakage could occur) on the cover and associated closure devices shall be checked. Potential leak interfaces that are associated with covers and closure devices include, but are not limited to: The interface of the cover and its foundation mounting; the periphery of any opening on the cover and its associated closure device; and the sealing seat interface on a spring-loaded pressure relief valve.

(ii) The test shall be performed when the unit contains a hazardous waste having an organic concentration representative of the range of concentrations for the hazardous waste expected to be managed in the unit. During the test, the cover and closure devices shall be secured in the closed position.

(iii) The detection instrument shall meet the performance criteria of Method 21 of 40 CFR Part 60, Appendix A, except the instrument response factor criteria in section 3.1.2(a) of Method 21 shall be for the average composition of the organic constituents in the hazardous waste placed in the waste management unit, not for each individual organic constituent.

(iv) The detection instrument shall be calibrated before use on each day of its use by the procedures specified in Method 21 of 40 CFR part 60, appendix A.

(v) Calibration gases shall be as follows:

(I) Zero air (less than 10 ppmv hydrocarbon in air), and

(II) A mixture of methane or n-hexane and air at a concentration of approximately, but less than, 10,000 ppmv methane or n-hexane.

(vi) The background level shall be determined according to the procedures in Method 21 of 40 CFR Part 60, Appendix A.

(vii) Each potential leak interface shall be checked by traversing the instrument probe around the potential leak interface as close to the interface as possible, as described in Method 21 of 40 CFR Part 60, Appendix A. In the case when the configuration of the cover or closure device prevents a complete traverse of the interface, all accessible portions of the interface shall be sampled. In the case when the configuration of the closure device prevents any sampling at the interface and the device is equipped with an enclosed extension or horn (e.g., some pressure relief devices), the instrument probe inlet shall be placed at approximately the center of the exhaust area to the atmosphere.

(viii) The arithmetic difference between the maximum organic concentration indicated by the instrument and the background level shall be compared with the value of 500 ppmv except when monitoring a seal around a rotating shaft that passes through a cover opening, in which case the comparison shall be as specified in subpart 4 (ix) of this ~~subparagraph~~ part. If the difference is less than 500 ppmv, then the potential leak interface is determined to operate with no detectable organic emissions.

(ix) For the seals around a rotating shaft that passes through a cover opening, the arithmetic difference between the maximum organic concentration indicated by the instrument and the background level shall be compared with the value of 10,000 ppmw. If the difference is less than 10,000 ppmw, then the potential leak interface is determined to operate with no detectable organic emissions.

(f) Standards: Tanks [40 CFR 265.1085]

1. The provisions of this subparagraph apply to the control of air pollutant emissions from tanks for which part (d)2 of this paragraph references the use of this subparagraph for such air emission control.

2. The owner or operator shall control air pollutant emissions from each tank subject to this subparagraph in accordance with the following requirements, as applicable:

(i) For a tank that manages hazardous waste that meets all of the conditions specified in items ~~2(i)~~ (I) through ~~2(i)~~ (III) of this ~~subparagraph~~ subpart, the owner or operator shall control air pollutant emissions from the tank in accordance with the Tank Level 1 controls specified in part 3 of this subparagraph or the Tank Level 2 controls specified in part 4 of this subparagraph.

(I) The hazardous waste in the tank has a maximum organic vapor pressure

which is less than the maximum organic vapor pressure limit for the tank's design capacity category as follows:

I. For a tank design capacity equal to or greater than 151 m^3 (40,000 gal.), the maximum organic vapor pressure limit for the tank is 5.2 kPa (0.75 psi).

II. For a tank design capacity equal to or greater than 75 m^3 (20,000 gal.) but less than 151 m^3 (40,000 gal), the maximum organic vapor pressure limit for the tank is 27.6 kPa (4 psi).

III. For a tank design capacity less than 75 m^3 (20,000 gal.), the maximum organic vapor pressure limit for the tank is 76.6 kPa (11.1 psi).

(II) The hazardous waste in the tank is not heated by the owner or operator to a temperature that is greater than the temperature at which the maximum organic vapor pressure of the hazardous waste is determined for the purpose of complying with item ~~2(i)~~ (I) of this ~~subparagraph~~ subpart.

(III) The hazardous waste in the tank is not treated by the owner or operator using a waste stabilization process, as defined in subparagraph (b) of this paragraph.

(ii) For a tank that manages hazardous waste that does not meet all of the conditions specified in items ~~2~~ (i)(I) through ~~2(i)~~ (III) of this ~~subparagraph~~ part, the owner or operator shall control air pollutant emissions from the tank by using Tank Level 2 controls in accordance with the requirements of part 4 of this subparagraph. Examples of tanks required to use Tank Level 2 controls include: A tank used for a waste stabilization process; and a tank for which the hazardous waste in the tank has a maximum organic vapor pressure that is equal to or greater than the maximum organic vapor pressure limit for the tank's design capacity category as specified in item ~~2~~ (i)(I) of this ~~subparagraph~~ part.

3. Owners and operators controlling air pollutant emissions from a tank using Tank Level 1 controls shall meet the requirements specified in subparts ~~3~~ (i) through ~~3~~ (iv) of this ~~subparagraph~~ part:

(i) The owner or operator shall determine the maximum organic vapor pressure for a hazardous waste to be managed in the tank using Tank Level 1 controls before the first time the hazardous waste is placed in the tank. The maximum organic vapor pressure shall be determined using the procedures specified in part (e)3 of this paragraph. Thereafter, the owner or operator shall perform a new determination whenever changes to the hazardous waste managed in the tank could potentially cause the maximum organic vapor pressure to increase to a level that is equal to or greater than the maximum organic vapor pressure limit for the tank design capacity category specified in item 2(i)(I) of this subparagraph, as applicable to the tank.

(ii) The tank shall be equipped with a fixed roof designed to meet the following specifications:

(I) The fixed roof and its closure devices shall be designed to form a continuous barrier over the entire surface area of the hazardous waste in the tank. The fixed roof may be a separate cover installed on the tank (e.g., a removable cover mounted on an open-top tank) or may be an integral part of the tank structural design (e.g., a horizontal cylindrical tank equipped with a hatch).

(II) The fixed roof shall be installed in a manner such that there are no visible cracks, holes, gaps, or other open spaces between roof section joints or between the interface of the roof edge and the tank wall.

(III) Each opening in the fixed roof, and any manifold system associated with the fixed roof, shall be either:

I. Equipped with a closure device designed to operate such that when the closure device is secured in the closed position there are no visible cracks, holes, gaps, or other open spaces in the closure device or between the perimeter of the opening and the closure device; or

II. Connected by a closed-vent system that is vented to a control device. The control device shall remove or destroy organics in the vent stream and shall be operating whenever hazardous waste is managed in the tank, except as provided for in sections ~~3(ii)(III)II~~ A and B of this ~~subparagraph~~ subitem.

A. During periods it is necessary to provide access to the tank for performing the activities of section ~~3(ii)(III)II~~ B of this ~~subparagraph~~ subitem, venting of the vapor headspace underneath the fixed roof to the control device is not required, opening of closure devices is allowed, and removal of the fixed roof is allowed. Following completion of the activity, the owner or operator shall promptly secure the closure device in the closed position or reinstall the cover, as applicable, and resume operation of the control device.

B. During periods of routine inspection, maintenance, or other activities needed for normal operations, and for the removal of accumulated sludge or other residues from the bottom of the tank.

(IV) The fixed roof and its closure devices shall be made of suitable materials that will minimize exposure of the hazardous waste to the atmosphere, to the extent practical, and will maintain the integrity of the fixed roof and closure devices throughout their intended service life. Factors to be considered when selecting the materials for and designing the fixed roof and closure devices shall include: Organic vapor permeability, the effects of any contact with the hazardous waste or its vapors managed in the tank; the effects of outdoor exposure to wind, moisture, and sunlight; and the operating practices used for the tank on which the fixed roof is installed.

(iii) Whenever a hazardous waste is in the tank, the fixed roof shall be installed with each closure device secured in the closed position except as follows:

(I) Opening of closure devices or removal of the fixed roof is allowed at the following times:

I. To provide access to the tank for performing routine inspection, maintenance, or other activities needed for normal operations. Examples of such activities include those times when a worker needs to open a port to sample the liquid in the tank, or when a worker needs to open a hatch to maintain or repair equipment. Following completion of the activity, the owner or operator shall

promptly secure the closure device in the closed position or reinstall the cover, as applicable, to the tank.

II. To remove accumulated sludge or other residues from the bottom of tank.

(II) Opening of a spring-loaded pressure-vacuum relief valve, conservation vent, or similar type of pressure relief device which vents to the atmosphere is allowed during normal operations for the purpose of maintaining the tank internal pressure in accordance with the tank design specifications. The device shall be designed to operate with no detectable organic emissions when the device is secured in the closed position. The settings at which the device opens shall be established such that the device remains in the closed position whenever the tank internal pressure is within the internal pressure operating range determined by the owner or operator based on the tank manufacturer recommendations, applicable regulations, fire protection and prevention codes, standard engineering codes and practices, or other requirements for the safe handling of flammable, ignitable, explosive, reactive, or hazardous materials. Examples of normal operating conditions that may require these devices to open are during those times when the tank internal pressure exceeds the internal pressure operating range for the tank as a result of loading operations or diurnal ambient temperature fluctuations.

(III) Opening of a safety device, as defined in subparagraph (b) of this paragraph, is allowed at any time conditions require doing so to avoid an unsafe condition.

(iv) The owner or operator shall inspect the air emission control equipment in accordance with the following requirements.

(I) The fixed roof and its closure devices shall be visually inspected by the owner or operator to check for defects that could result in air pollutant emissions. Defects include, but are not limited to, visible cracks, holes, or gaps in the roof sections or between the roof and the tank wall; broken, cracked, or otherwise damaged seals or gaskets on closure devices; and broken or missing hatches, access covers, caps, or other closure devices.

(II) The owner or operator shall perform an initial inspection of the fixed roof and its closure devices on or before the date that the tank becomes subject to this subparagraph. Thereafter, the owner or operator shall perform the inspections at least once every year except under the special conditions provided for in part 12 of this subparagraph.

(III) In the event that a defect is detected, the owner or operator shall repair the defect in accordance with the requirements of part 11 of this subparagraph.

(IV) The owner or operator shall maintain a record of the inspection in accordance with the requirements specified in part (k)2 of this paragraph.

4. Owners and operators controlling air pollutant emissions from a tank using Tank Level 2 controls shall use one of the following tanks:

(i) A fixed-roof tank equipped with an internal floating roof in accordance with the requirements specified in part 5 of this subparagraph;

(ii) A tank equipped with an external floating roof in accordance with the requirements specified in part 6 of this subparagraph;

(iii) A tank vented through a closed-vent system to a control device in accordance with the requirements specified in part 7 of this subparagraph;

(iv) A pressure tank designed and operated in accordance with the requirements specified in part 8 of this subparagraph; or

(v) A tank located inside an enclosure that is vented through a closed-vent system to an enclosed combustion control device in accordance with the requirements specified in part 9 of this subparagraph.

5. The owner or operator who controls air pollutant emissions from a tank using a fixed-roof with an internal floating roof shall meet the requirements specified in subpart ~~5~~ (i) through (iii) of this ~~subparagraph~~ part.

(i) The tank shall be equipped with a fixed roof and an internal floating roof in accordance with the following requirements:

(I) The internal floating roof shall be designed to float on the liquid surface except when the floating roof must be supported by the leg supports.

(II) The internal floating roof shall be equipped with a continuous seal between the wall of the tank and the floating roof edge that meets either of the following requirements:

I. A single continuous seal that is either a liquid-mounted seal or a metallic shoe seal, as defined in subparagraph (b) of this paragraph; or

II. Two continuous seals mounted one above the other. The lower seal may be a vapor-mounted seal.

(III) The internal floating roof shall meet the following specifications:

I. Each opening in a noncontact internal floating roof except for automatic bleeder vents (vacuum breaker vents) and the rim space vents is to provide a projection below the liquid surface.

II. Each opening in the internal floating roof shall be equipped with a gasketed cover or a gasketed lid except for leg sleeves, automatic bleeder vents, rim space vents, column wells, ladder wells, sample wells, and stub drains.

III. Each penetration of the internal floating roof for the purpose of sampling shall have a slit fabric cover that covers at least 90 percent of the opening.

IV. Each automatic bleeder vent and rim space vent shall be gasketed.

V. Each penetration of the internal floating roof that allows for passage of a ladder shall have a gasketed sliding cover.

VI. Each penetration of the internal floating roof that allows for passage of a column supporting the fixed roof shall have a flexible fabric sleeve seal or a gasketed sliding cover.

(ii) The owner or operator shall operate the tank in accordance with the following requirements:

(I) When the floating roof is resting on the leg supports, the process of filling, emptying, or refilling shall be continuous and shall be completed as soon as practical.

(II) Automatic bleeder vents are to be set closed at all times when the roof is floating, except when the roof is being floated off or is being landed on the leg supports.

(III) Prior to filling the tank, each cover, access hatch, gauge float well or lid on any opening in the internal floating roof shall be bolted or fastened closed (i.e., no visible gaps). Rim space vents are to be set to open only when the internal floating roof is not floating or when the pressure beneath the rim exceeds the manufacturer's recommended setting.

(iii) The owner or operator shall inspect the internal floating roof in accordance with the procedures specified as follows:

(I) The floating roof and its closure devices shall be visually inspected by the owner or operator to check for defects that could result in air pollutant emissions. Defects include, but are not limited to: The internal floating roof is not floating on the surface of the liquid inside the tank; liquid has accumulated on top of the internal floating roof; any portion of the roof seals have detached from the roof rim; holes, tears, or other openings are visible in the seal fabric; the gaskets no longer close off the hazardous waste surface from the atmosphere; or the slotted membrane has more than 10 percent open area.

(II) The owner or operator shall inspect the internal floating roof components as follows except as provided in item ~~5(iii)~~ (III) of this ~~subparagraph~~ subpart:

I. Visually inspect the internal floating roof components through openings on the fixed-roof (e.g., manholes and roof hatches) at least once every 12 months after initial fill, and

II. Visually inspect the internal floating roof, primary seal, secondary seal (if one is in service), gaskets, slotted membranes, and sleeve seals (if any) each time the tank is emptied and degassed and at least every 10 years.

(III) As an alternative to performing the inspections specified in item ~~5(iii)(III)~~ (II) of this ~~subparagraph~~ subpart for an internal floating roof equipped with two continuous seals mounted one above the other, the owner or operator may visually inspect the internal floating roof, primary and secondary seals, gaskets, slotted membranes, and sleeve seals (if any) each time the tank is emptied and degassed and at least every 5 years.

(IV) Prior to each inspection required by item ~~5(iii)~~ (II) or ~~5(iii)~~ (III) of this ~~subparagraph~~ subpart, the owner or operator shall notify the Commissioner in advance of each inspection to provide the Commissioner with the opportunity to have an observer present during the inspection. The owner or operator shall notify the Commissioner of the date and location of the inspection as follows:

I. Prior to each visual inspection of an internal floating roof in a tank that has been emptied and degassed, written notification

shall be prepared and sent by the owner or operator so that it is received by the Commissioner at least 30 calendar days before refilling the tank except when an inspection is not planned as provided for in subitem ~~5(iii)(IV)~~ II of this ~~subparagraph~~ item.

II. When a visual inspection is not planned and the owner or operator could not have known about the inspection 30 calendar days before refilling the tank, the owner or operator shall notify the Commissioner as soon as possible, but no later than 7 calendar days before refilling of the tank. This notification may be made by telephone and immediately followed by a written explanation for why the inspection is unplanned. Alternatively, written notification, including the explanation for the unplanned inspection, may be sent so that it is received by the Commissioner at least 7 calendar days before refilling the tank.

(V) In the event that a defect is detected, the owner or operator shall repair the defect in accordance with the requirements of part 11 of this subparagraph.

(VI) The owner or operator shall maintain a record of the inspection in accordance with the requirements specified in part (k)2 of this paragraph.

(iv) Safety devices, as defined in subparagraph (b) of this paragraph, may be installed and operated as necessary on any tank complying with the requirements of this part ~~5 of this subparagraph~~.

6. The owner or operator who controls air pollutant emissions from a tank using an external floating roof shall meet the requirements specified in subparts ~~6~~ (iii) of this ~~subparagraph~~ part.

(i) The owner or operator shall design the external floating roof in accordance with the following requirements:

(I) The external floating roof shall be designed to float on the liquid surface except when the floating roof must be supported by the leg supports.

(II) The floating roof shall be equipped with two continuous seals, one above the other, between the wall of the tank and the roof edge. The lower seal is referred to as the primary seal, and the upper seal is referred to as the secondary seal.

I. The primary seal shall be a liquid-mounted seal or a metallic shoe seal, as defined in subparagraph (b) of this paragraph. The total area of the gaps between the tank wall and the primary seal shall not exceed 212 square centimeters (cm^2) per meter of tank diameter, and the width of any portion of these gaps shall not exceed 3.8 centimeters (cm). If a metallic shoe seal is used for the primary seal, the metallic shoe seal shall be designed so that one end extends into the liquid in the tank and the other end extends a vertical distance of at least 61 centimeters above the liquid surface.

II. The secondary seal shall be mounted above the primary seal and cover the annular space between the floating roof and the wall of the tank. The total area of the gaps between the tank wall and the secondary seal shall not exceed 21.2 square centimeters (cm^2) per meter of tank diameter, and the width of any portion of these gaps shall not exceed 1.3 centimeters (cm).

(III) The external floating roof shall meet the following specifications:

I. Except for automatic bleeder vents (vacuum breaker vents) and rim space vents, each opening in a noncontact external floating roof shall provide a projection below the liquid surface.

II. Except for automatic bleeder vents, rim space vents, roof drains, and leg sleeves, each opening in the roof shall be equipped with a gasketed cover, seal, or lid.

III. Each access hatch and each gauge float well shall be equipped with a cover designed to be bolted or fastened when the cover is secured in the closed position.

IV. Each automatic bleeder vent and each rim space vent shall be equipped with a gasket.

V. Each roof drain that empties into the liquid managed in the tank shall be equipped with a slotted membrane fabric cover that covers at least 90 percent of the area of the opening.

VI. Each unslotted and slotted guide pole well shall be equipped with a gasketed sliding cover or a flexible fabric sleeve seal.

VII. Each unslotted guide pole shall be equipped with a gasketed cap on the end of the pole.

VIII. Each slotted guide pole shall be equipped with a gasketed float or other device which closes off the liquid surface from the atmosphere.

IX. Each gauge hatch and each sample well shall be equipped with a gasketed cover.

(ii) The owner or operator shall operate the tank in accordance with the following requirements:

(I) When the floating roof is resting on the leg supports, the process of filling, emptying, or refilling shall be continuous and shall be completed as soon as practical.

(II) Except for automatic bleeder vents, rim space vents, roof drains, and leg sleeves, each opening in the roof shall be secured and maintained in a closed position at all times except when the closure device must be open for access.

(III) Covers on each access hatch and each gauge float well shall be bolted or fastened when secured in the closed position.

(IV) Automatic bleeder vents shall be set closed at all times when the roof is floating, except when the roof is being floated off or is being landed on the leg supports.

(V) Rim space vents shall be set to open only at those times that the roof is being floated off the roof leg supports or when the pressure beneath the rim seal exceeds the manufacturer's recommended setting.

(VI) The cap on the end of each unslotted guide pole shall be secured in the

closed position at all times except when measuring the level or collecting samples of the liquid in the tank.

(VII) The cover on each gauge hatch or sample well shall be secured in the closed position at all times except when the hatch or well must be opened for access.

(VIII) Both the primary seal and the secondary seal shall completely cover the annular space between the external floating roof and the wall of the tank in a continuous fashion except during inspections.

(iii) The owner or operator shall inspect the external floating roof in accordance with the procedures specified as follows:

(I) The owner or operator shall measure the external floating roof seal gaps in accordance with the following requirements:

I. The owner or operator shall perform measurements of gaps between the tank wall and the primary seal within 60 calendar days after initial operation of the tank following installation of the floating roof and, thereafter, at least once every 5 years.

II. The owner or operator shall perform measurements of gaps between the tank wall and the secondary seal within 60 calendar days after initial operation of the tank following installation of the floating roof and, thereafter, at least once every year.

III. If a tank ceases to hold hazardous waste for a period of 1 year or more, subsequent introduction of hazardous waste into the tank shall be considered an initial operation for the purposes of subitems ~~6(iii)(I)~~ I and ~~6(iii)(I)~~ II of this ~~subparagraph~~ item.

IV. The owner or operator shall determine the total surface area of gaps in the primary seal and in the secondary seal individually using the following procedure:

A. The seal gap measurements shall be performed at one or more floating roof levels when the roof is floating off the roof supports.

B. Seal gaps, if any, shall be measured around the entire perimeter of the floating roof in each place where a 0.32-centimeter (cm) diameter uniform probe passes freely (without forcing or binding against the seal) between the seal and the wall of the tank and measure the circumferential distance of each such location.

C. For a seal gap measured under this subpart ~~6(iii) of this subparagraph~~, the gap surface area shall be determined by using probes of various widths to measure accurately the actual distance from the tank wall to the seal and multiplying each such width by its respective circumferential distance.

D. The total gap area shall be calculated by adding the gap surface areas determined for each identified gap location for the primary seal and the secondary seal individually, and then dividing the sum for each seal type by the nominal diameter of the tank. These total gap areas for

the primary seal and secondary seal are then compared to the respective standards for the seal type as specified in item ~~6~~ (i)(II) of this ~~subparagraph~~ part.

V. In the event that the seal gap measurements do not conform to the specifications in item ~~6~~ (i)(II) of this ~~subparagraph~~ part, the owner or operator shall repair the defect in accordance with the requirements of part 11 of this subparagraph.

VI. The owner or operator shall maintain a record of the inspection in accordance with the requirements specified in part (k)2 of this paragraph.

(II) The owner or operator shall visually inspect the external floating roof in accordance with the following requirements:

I. The floating roof and its closure devices shall be visually inspected by the owner or operator to check for defects that could result in air pollutant emissions. Defects include, but are not limited to: Holes, tears, or other openings in the rim seal or seal fabric of the floating roof; a rim seal detached from the floating roof; all or a portion of the floating roof deck being submerged below the surface of the liquid in the tank; broken, cracked, or otherwise damaged seals or gaskets on closure devices; and broken or missing hatches, access covers, caps, or other closure devices.

II. The owner or operator shall perform an initial inspection of the external floating roof and its closure devices on or before the date that the tank becomes subject to this subparagraph. Thereafter, the owner or operator shall perform the inspections at least once every year except for the special conditions provided for in part 12 of this subparagraph.

III. In the event that a defect is detected, the owner or operator shall repair the defect in accordance with the requirements of part 11 of this subparagraph.

IV. The owner or operator shall maintain a record of the inspection in accordance with the requirements specified in part (k)2 of this paragraph.

(III) Prior to each inspection required by item ~~6(iii)~~ (I) or ~~6(iii)~~ (II) of this ~~subparagraph~~ subpart, the owner or operator shall notify the Commissioner in advance of each inspection to provide the Commissioner with the opportunity to have an observer present during the inspection. The owner or operator shall notify the Commissioner of the date and location of the inspection as follows:

I. Prior to each inspection to measure external floating roof seal gaps as required under item ~~6(iii)~~ (I) of this ~~subparagraph~~ subpart, written notification shall be prepared and sent by the owner or operator so that it is received by the Commissioner at least 30 calendar days before the date the measurements are scheduled to be performed.

II. Prior to each visual inspection of an external floating roof in a tank that has been emptied and degassed, written notification shall be prepared and sent by the owner or operator so that it is

received by the Commissioner at least 30 calendar days before refilling the tank except when an inspection is not planned as provided for in subitem ~~6(iii)(III)~~ III of this ~~subparagraph~~ item.

III. When a visual inspection is not planned and the owner or operator could not have known about the inspection 30 calendar days before refilling the tank, the owner or operator shall notify the Commissioner as soon as possible, but no later than 7 calendar days before refilling of the tank. This notification may be made by telephone and immediately followed by a written explanation for why the inspection is unplanned. Alternatively, written notification, including the explanation for the unplanned inspection, may be sent so that it is received by the Commissioner at least 7 calendar days before refilling the tank.

(iv) Safety devices, as defined in subparagraph (b) of this paragraph, may be installed and operated as necessary on any tank complying with the requirements of this part ~~6 of this subparagraph~~.

7. The owner or operator who controls air pollutant emissions from a tank by venting the tank to a control device shall meet the requirements specified in subparts ~~7~~ (i) through ~~7~~ (iii) of this ~~subparagraph~~ part.

(i) The tank shall be covered by a fixed roof and vented directly through a closed-vent system to a control device in accordance with the following requirements:

(I) The fixed roof and its closure devices shall be designed to form a continuous barrier over the entire surface area of the liquid in the tank.

(II) Each opening in the fixed roof not vented to the control device shall be equipped with a closure device. If the pressure in the vapor headspace underneath the fixed roof is less than atmospheric pressure when the control device is operating, the closure devices shall be designed to operate such that when the closure device is secured in the closed position there are no visible cracks, holes, gaps, or other open spaces in the closure device or between the perimeter of the cover opening and the closure device. If the pressure in the vapor headspace underneath the fixed roof is equal to or greater than atmospheric pressure when the control device is operating, the closure device shall be designed to operate with no detectable organic emissions.

(III) The fixed roof and its closure devices shall be made of suitable materials that will minimize exposure of the hazardous waste to the atmosphere, to the extent practical, and will maintain the integrity of the fixed roof and closure devices throughout their intended service life. Factors to be considered when selecting the materials for and designing the fixed roof and closure devices shall include: Organic vapor permeability, the effects of any contact with the liquid and its vapor managed in the tank; the effects of outdoor exposure to wind, moisture, and sunlight; and the operating practices used for the tank on which the fixed roof is installed.

(IV) The closed-vent system and control device shall be designed and operated in accordance with the requirements of subparagraph (i) of this paragraph.

(ii) Whenever a hazardous waste is in the tank, the fixed roof shall be installed with each closure device secured in the closed position and the vapor headspace underneath the fixed roof vented to the control device except as follows:

(I) Venting to the control device is not required, and opening of closure devices or removal of the fixed roof is allowed at the following times:

I. To provide access to the tank for performing routine inspection, maintenance, or other activities needed for normal operations. Examples of such activities include those times when a worker needs to open a port to sample liquid in the tank, or when a worker needs to open a hatch to maintain or repair equipment. Following completion of the activity, the owner or operator shall promptly secure the closure device in the closed position or reinstall the cover, as applicable, to the tank.

II. To remove accumulated sludge or other residues from the bottom of a tank.

(II) Opening of a safety device, as defined in subparagraph (b) of this paragraph, is allowed at any time conditions require doing so to avoid an unsafe condition.

(iii) The owner or operator shall inspect and monitor the air emission control equipment in accordance with the following procedures:

(I) The fixed roof and its closure devices shall be visually inspected by the owner or operator to check for defects that could result in air pollutant emissions. Defects include, but are not limited to, visible cracks, holes, or gaps in the roof sections or between the roof and the tank wall; broken, cracked, or otherwise damaged seals or gaskets on closure devices; and broken or missing hatches, access covers, caps, or other closure devices.

(II) The closed-vent system and control device shall be inspected and monitored by the owner or operator in accordance with the procedures specified in subparagraph (i) of this paragraph.

(III) The owner or operator shall perform an initial inspection of the air emission control equipment on or before the date that the tank becomes subject to this ~~section~~ subparagraph. Thereafter, the owner or operator shall perform the inspections at least once every year except for the special conditions provided for in part 12 of this subparagraph.

(IV) In the event that a defect is detected, the owner or operator shall repair the defect in accordance with the requirements of part 11 of this subparagraph.

(V) The owner or operator shall maintain a record of the inspection in accordance with the requirements specified in part (k)2 of this paragraph.

8. The owner or operator who controls air pollutant emissions by using a pressure tank shall meet the following requirements.

(i) The tank shall be designed not to vent to the atmosphere as a result of compression of the vapor headspace in the tank during filling of the tank to its design capacity.

(ii) All tank openings shall be equipped with closure devices designed to operate with no detectable organic emissions as determined using the procedure specified in part (e)4 of this paragraph.

(iii) Whenever a hazardous waste is in the tank, the tank shall be operated as a

closed system that does not vent to the atmosphere except under either of the following conditions as specified in item (I) or (II) of this subpart:

(I) At those times when opening of a safety device, as defined in subparagraph (b) of this paragraph, is required to avoid an unsafe condition.

(II) At those times when purging of inerts from the tank is required and the purge stream is routed to a closed-vent system and control device designed and operated in accordance with the requirements of subparagraph (i) of this paragraph.

9. The owner or operator who controls air pollutant emissions by using an enclosure vented through a closed-vent system to an enclosed combustion control device shall meet the requirements specified in subparts ~~9~~ (i) through ~~9~~ (iv) of this ~~subparagraph~~ part.

(i) The tank shall be located inside an enclosure. The enclosure shall be designed and operated in accordance with the criteria for a permanent total enclosure as specified in "Procedure T--Criteria for and Verification of a Permanent or Temporary Total Enclosure" under 40 CFR 52.741, Appendix B. The enclosure may have permanent or temporary openings to allow worker access; passage of material into or out of the enclosure by conveyor, vehicles, or other mechanical means; entry of permanent mechanical or electrical equipment; or direct airflow into the enclosure. The owner or operator shall perform the verification procedure for the enclosure as specified in Section 5.0 to "Procedure T--Criteria for and Verification of a Permanent or Temporary Total Enclosure" initially when the enclosure is first installed and, thereafter, annually.

(ii) The enclosure shall be vented through a closed-vent system to an enclosed combustion control device that is designed and operated in accordance with the standards for either a vapor incinerator, boiler, or process heater specified in subparagraph (i) of this paragraph.

(iii) Safety devices, as defined in subparagraph (b) of this paragraph, may be installed and operated as necessary on any enclosure, closed- vent system, or control device used to comply with the requirements of subparts ~~9~~ (i) and ~~9~~ (ii) of this ~~subparagraph~~ part.

(iv) The owner or operator shall inspect and monitor the closed-vent system and control device as specified in subparagraph (i) of this paragraph.

10. The owner or operator shall transfer hazardous waste to a tank subject to this subparagraph in accordance with the following requirements:

(i) Transfer of hazardous waste, except as provided in subpart ~~10~~ (ii) of this ~~subparagraph~~ part, to the tank from another tank subject to this ~~section~~ subparagraph or from a surface impoundment subject to subparagraph (g) of this paragraph shall be conducted using continuous hard-piping or another closed system that does not allow exposure of the hazardous waste to the atmosphere. For the purpose of complying with this provision, an individual drain system is considered to be a closed system when it meets the requirements of 40 CFR Part 63, subpart RR--National Emission Standards for Individual Drain Systems.

(ii) The requirements of subpart ~~10~~ (i) of this ~~subparagraph~~ part do not apply when transferring a hazardous waste to the tank under any of the following conditions:

(I) The hazardous waste meets the average VO concentration conditions specified in subpart (d)3(i) of this paragraph at the point of waste origination.

(II) The hazardous waste has been treated by an organic destruction or removal process to meet the requirements in subpart (d)3(ii) of this paragraph.

(III) The hazardous waste meets the requirements of subpart (d)3(iv) of this paragraph.

11. The owner or operator shall repair each defect detected during an inspection performed in accordance with the requirements of subparts 3(iv), 5(iii), 6(iii), or 7(iii) of this subparagraph as follows:

(i) The owner or operator shall make first efforts at repair of the defect no later than 5 calendar days after detection, and repair shall be completed as soon as possible but no later than 45 calendar days after detection except as provided in subpart ~~11~~ (ii) of this ~~subparagraph~~ part.

(ii) Repair of a defect may be delayed beyond 45 calendar days if the owner or operator determines that repair of the defect requires emptying or temporary removal from service of the tank and no alternative tank capacity is available at the site to accept the hazardous waste normally managed in the tank. In this case, the owner or operator shall repair the defect the next time the process or unit that is generating the hazardous waste managed in the tank stops operation. Repair of the defect shall be completed before the process or unit resumes operation.

12. Following the initial inspection and monitoring of the cover as required by the applicable provisions of this subpart, subsequent inspection and monitoring may be performed at intervals longer than 1 year under the following special conditions:

(i) In the case when inspecting or monitoring the cover would expose a worker to dangerous, hazardous, or other unsafe conditions, then the owner or operator may designate a cover as an "unsafe to inspect and monitor cover" and comply with all of the following requirements:

(I) Prepare a written explanation for the cover stating the reasons why the cover is unsafe to visually inspect or to monitor, if required.

(II) Develop and implement a written plan and schedule to inspect and monitor the cover, using the procedures specified in the applicable ~~section of this subpart~~ subparagraph of this paragraph, as frequently as practicable during those times when a worker can safely access the cover.

(ii) In the case when a tank is buried partially or entirely underground, an owner or operator is required to inspect and monitor, as required by the applicable provisions of this ~~section~~ subparagraph, only those portions of the tank cover and those connections to the tank (e.g., fill ports, access hatches, gauge wells, etc.) that are located on or above the ground surface.

(g) Standards: Surface Impoundments [40 CFR 265.1086]

1. The provisions of this subparagraph apply to the control of air pollutant emissions from surface impoundments for which part (d)2 of this paragraph references the use of this subparagraph for such air emission control.

2. The owner or operator shall control air pollutant emissions from the surface impoundment by installing and operating either of the following:

(i) A floating membrane cover in accordance with the provisions specified in part 3 of this subparagraph; or

(ii) A cover that is vented through a closed-vent system to a control device in accordance with the requirements specified in part 4 of this subparagraph.

3. The owner or operator who controls air pollutant emissions from a surface impoundment using a floating membrane cover shall meet the requirements specified in subparts ~~3~~ (i) through ~~3~~ (iii) of this ~~subparagraph~~ part.

(i) The surface impoundment shall be equipped with a floating membrane cover designed to meet the following specifications:

(I) The floating membrane cover shall be designed to float on the liquid surface during normal operations and form a continuous barrier over the entire surface area of the liquid.

(II) The cover shall be fabricated from a synthetic membrane material that is either:

I. High density polyethylene (HDPE) with a thickness no less than 2.5 millimeters (mm); or

II. A material or a composite of different materials determined to have both organic permeability properties that are equivalent to those of the material listed in subitem ~~3(i)(II)~~ I of this ~~subparagraph~~ item and chemical and physical properties that maintain the material integrity for the intended service life of the material.

(III) The cover shall be installed in a manner such that there are no visible cracks, holes, gaps, or other open spaces between cover section seams or between the interface of the cover edge and its foundation mountings.

(IV) Except as provided for in item ~~3(i)~~ (V) of this ~~subparagraph~~ subpart, each opening in the floating membrane cover shall be equipped with a closure device designed to operate such that when the closure device is secured in the closed position there are no visible cracks, holes, gaps, or other open spaces in the closure device or between the perimeter of the cover opening and the closure device.

(V) The floating membrane cover may be equipped with one or more emergency cover drains for removal of stormwater. Each emergency cover drain shall be equipped with a slotted membrane fabric cover that covers at least 90 percent of the area of the opening or a flexible fabric sleeve seal.

(VI) The closure devices shall be made of suitable materials that will minimize exposure of the hazardous waste to the atmosphere, to the extent practical, and will maintain the integrity of the closure devices throughout their intended service life. Factors to be considered when selecting the materials of construction and designing the cover and closure devices shall include: Organic vapor permeability; the effects of any contact with the liquid and its vapor managed in the surface impoundment; the effects of outdoor exposure to wind, moisture, and sunlight; and the operating practices used for the surface impoundment on which the floating membrane cover is installed.

(ii) Whenever a hazardous waste is in the surface impoundment, the floating

membrane cover shall float on the liquid and each closure device shall be secured in the closed position except as follows:

(I) Opening of closure devices or removal of the cover is allowed at the following times:

I. To provide access to the surface impoundment for performing routine inspection, maintenance, or other activities needed for normal operations. Examples of such activities include those times when a worker needs to open a port to sample the liquid in the surface impoundment, or when a worker needs to open a hatch to maintain or repair equipment. Following completion of the activity, the owner or operator shall promptly replace the cover and secure the closure device in the closed position, as applicable.

II. To remove accumulated sludge or other residues from the bottom of surface impoundment.

(II) Opening of a safety device, as defined in subparagraph (b) of this paragraph, is allowed at any time conditions require doing so to avoid an unsafe condition.

(iii) The owner or operator shall inspect the floating membrane cover in accordance with the following procedures:

(I) The floating membrane cover and its closure devices shall be visually inspected by the owner or operator to check for defects that could result in air pollutant emissions. Defects include, but are not limited to, visible cracks, holes, or gaps in the cover section seams or between the interface of the cover edge and its foundation mountings; broken, cracked, or otherwise damaged seals or gaskets on closure devices; and broken or missing hatches, access covers, caps, or other closure devices.

(II) The owner or operator shall perform an initial inspection of the floating membrane cover and its closure devices on or before the date that the surface impoundment becomes subject to this subparagraph. Thereafter, the owner or operator shall perform the inspections at least once every year except for the special conditions provided for in part 7 of this subparagraph.

(III) In the event that a defect is detected, the owner or operator shall repair the defect in accordance with the requirements of part 6 of this subparagraph.

(IV) The owner or operator shall maintain a record of the inspection in accordance with the requirements specified in part (k)3 of this paragraph.

4. The owner or operator who controls air pollutant emissions from a surface impoundment using a cover vented to a control device shall meet the requirements specified in subparts 4 (i) through 4 (iii) of this ~~subparagraph~~ part.

(i) The surface impoundment shall be covered by a cover and vented directly through a closed-vent system to a control device in accordance with the following requirements:

(I) The cover and its closure devices shall be designed to form a continuous barrier over the entire surface area of the liquid in the surface

impoundment.

(II) Each opening in the cover not vented to the control device shall be equipped with a closure device. If the pressure in the vapor headspace underneath the cover is less than atmospheric pressure when the control device is operating, the closure devices shall be designed to operate such that when the closure device is secured in the closed position there are no visible cracks, holes, gaps, or other open spaces in the closure device or between the perimeter of the cover opening and the closure device. If the pressure in the vapor headspace underneath the cover is equal to or greater than atmospheric pressure when the control device is operating, the closure device shall be designed to operate with no detectable organic emissions using the procedure specified in part (e)4 of this paragraph.

(III) The cover and its closure devices shall be made of suitable materials that will minimize exposure of the hazardous waste to the atmosphere, to the extent practical, and will maintain the integrity of the cover and closure devices throughout their intended service life. Factors to be considered when selecting the materials of construction and designing the cover and closure devices shall include: Organic vapor permeability; the effects of any contact with the liquid or its vapors managed in the surface impoundment; the effects of outdoor exposure to wind, moisture, and sunlight; and the operating practices used for the surface impoundment on which the cover is installed.

(IV) The closed-vent system and control device shall be designed and operated in accordance with the requirements of subparagraph (i) of this paragraph.

(ii) Whenever a hazardous waste is in the surface impoundment, the cover shall be installed with each closure device secured in the closed position and the vapor headspace underneath the cover vented to the control device except as follows:

(I) Venting to the control device is not required, and opening of closure devices or removal of the cover is allowed at the following times:

I. To provide access to the surface impoundment for performing routine inspection, maintenance, or other activities needed for normal operations. Examples of such activities include those times when a worker needs to open a port to sample liquid in the surface impoundment, or when a worker needs to open a hatch to maintain or repair equipment. Following completion of the activity, the owner or operator shall promptly secure the closure device in the closed position or reinstall the cover, as applicable, to the surface impoundment.

II. To remove accumulated sludge or other residues from the bottom of the surface impoundment.

(II) Opening of a safety device, as defined in subparagraph (b) of this paragraph, is allowed at any time conditions require doing so to avoid an unsafe condition.

(iii) The owner or operator shall inspect and monitor the air emission control equipment in accordance with the following procedures:

(I) The surface impoundment cover and its closure devices shall be visually inspected by the owner or operator to check for defects that could result

in air pollutant emissions. Defects include, but are not limited to, visible cracks, holes, or gaps in the cover section seams or between the interface of the cover edge and its foundation mountings; broken, cracked, or otherwise damaged seals or gaskets on closure devices; and broken or missing hatches, access covers, caps, or other closure devices.

(II) The closed-vent system and control device shall be inspected and monitored by the owner or operator in accordance with the procedures specified in subparagraph (i) of this paragraph.

(III) The owner or operator shall perform an initial inspection of the air emission control equipment on or before the date that the surface impoundment becomes subject to this subparagraph. Thereafter, the owner or operator shall perform the inspections at least once every year except for the special conditions provided for in part 7 of this subparagraph.

(IV) In the event that a defect is detected, the owner or operator shall repair the defect in accordance with the requirements of part 6 of this subparagraph.

(V) The owner or operator shall maintain a record of the inspection in accordance with the requirements specified in part (k)3 of this paragraph.

5. The owner or operator shall transfer hazardous waste to a surface impoundment subject to this subparagraph in accordance with the following requirements:

(i) Transfer of hazardous waste, except as provided in subpart ~~5~~ (ii) of this ~~subparagraph~~ part, to the surface impoundment from another surface impoundment subject to this subparagraph or from a tank subject to subparagraph (f) of this paragraph shall be conducted using continuous hard-piping or another closed system that does not allow exposure of the waste to the atmosphere. For the purpose of complying with this provision, an individual drain system is considered to be a closed system when it meets the requirements of 40 CFR Part 63, subpart RR-- National Emission Standards for Individual Drain Systems.

(ii) The requirements of subpart ~~5~~ (i) of this ~~subparagraph~~ part do not apply when transferring a hazardous waste to the surface impoundment under either of the following conditions:

(I) The hazardous waste meets the average VO concentration conditions specified in subpart (d)3(i) of this paragraph at the point of waste origination.

(II) The hazardous waste has been treated by an organic destruction or removal process to meet the requirements in subpart (d)3(ii) of this paragraph.

(III) The hazardous waste meets the requirements of subpart (d)3(iv) of this paragraph.

6. The owner or operator shall repair each defect detected during an inspection performed in accordance with the requirements of subpart 3(iii) or 4(iii) of this subparagraph as follows:

(i) The owner or operator shall make first efforts at repair of the defect no later than 5 calendar days after detection, and repair shall be completed as soon as

possible but no later than 45 calendar days after detection except as provided in subpart ~~6~~ (ii) of this ~~subparagraph~~ part.

(ii) Repair of a defect may be delayed beyond 45 calendar days if the owner or operator determines that repair of the defect requires emptying or temporary removal from service of the surface impoundment and no alternative capacity is available at the site to accept the hazardous waste normally managed in the surface impoundment. In this case, the owner or operator shall repair the defect the next time the process or unit that is generating the hazardous waste managed in the tank stops operation. Repair of the defect shall be completed before the process or unit resumes operation.

7. Following the initial inspection and monitoring of the cover as required by the applicable provisions of this subpart, subsequent inspection and monitoring may be performed at intervals longer than 1 year in the case when inspecting or monitoring the cover would expose a worker to dangerous, hazardous, or other unsafe conditions. In this case, the owner or operator may designate the cover as an "unsafe to inspect and monitor cover" and comply with all of the following requirements:

(i) Prepare a written explanation for the cover stating the reasons why the cover is unsafe to visually inspect or to monitor, if required.

(ii) Develop and implement a written plan and schedule to inspect and monitor the cover using the procedures specified in the applicable subparagraph of this paragraph as frequently as practicable during those times when a worker can safely access the cover.

(h) Standards: Containers [40 CFR 265.1087]

1. The provisions of this subparagraph apply to the control of air pollutant emissions from containers for which part (d)2 of this paragraph references the use of this subparagraph for such air emission control.

2. General requirements.

(i) The owner or operator shall control air pollutant emissions from each container subject to this subparagraph in accordance with the following requirements, as applicable to the container, except when the special provisions for waste stabilization processes specified in subpart ~~2~~ (ii) of this ~~subparagraph~~ part apply to the container.

(I) For a container having a design capacity greater than 0.1 m^3 (26 gal.) and less than or equal to 0.46 m^3 (119 gal.), the owner or operator shall control air pollutant emissions from the container in accordance with the Container Level 1 standards specified in part 3 of this subparagraph.

(II) For a container having a design capacity greater than 0.46 m^3 (119 gal.) that is not in light material service, the owner or operator shall control air pollutant emissions from the container in accordance with the Container Level 1 standards specified in part 3 of this subparagraph.

(III) For a container having a design capacity greater than 0.46 m^3 (119 gal.) that is in light material service, the owner or operator shall control air pollutant emissions from the container in accordance with the Container Level 2 standards specified in part 4 of this subparagraph.

(ii) When a container having a design capacity greater than 0.1 m^3 (26 gal.) is used for treatment of a hazardous waste by a waste stabilization process, the owner or operator shall control air pollutant emissions from the container in accordance

with the Container Level 3 standards specified in part 5 of this subparagraph at those times during the waste stabilization process when the hazardous waste in the container is exposed to the atmosphere.

3. Container Level 1 standards.

(i) A container using Container Level 1 controls is one of the following:

(I) A container that meets the applicable U.S. Department of Transportation (DOT) regulations on packaging hazardous materials for transportation as specified in part 6 of this subparagraph.

(II) 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 (e.g., a lid on a drum or a suitably secured tarp on a roll-off box) or may be an integral part of the container structural design (e.g., a "portable tank" or bulk cargo container equipped with a screw-type cap).

(III) An open-top container in which an organic-vapor suppressing barrier is placed on or over the hazardous waste in the container such that no hazardous waste is exposed to the atmosphere. One example of such a barrier is application of a suitable organic-vapor suppressing foam.

(ii) A container used to meet the requirements of item ~~3~~ (i)(II) or ~~3(i)~~ (III) of this ~~subparagraph~~ part shall be equipped with covers and closure devices, as applicable to the container, that are composed of suitable materials to minimize exposure of the hazardous waste to the atmosphere and to maintain the equipment integrity for as long as it is in service. Factors to be considered in selecting the materials of construction and designing the cover and closure devices shall include: Organic vapor permeability, the effects of contact with the hazardous waste or its vapor managed in the container; the effects of outdoor exposure of the closure device or cover material to wind, moisture, and sunlight; and the operating practices for which the container is intended to be used.

(iii) Whenever a hazardous waste is in a container using Container Level 1 controls, the owner or operator shall install all covers and closure devices for the container, as applicable to the container, and secure and maintain each closure device in the closed position except as follows:

(I) Opening of a closure device or cover is allowed for the purpose of adding hazardous waste or other material to the container as follows:

I. In the case when the container is filled to the intended final level in one continuous operation, the owner or operator shall promptly secure the closure devices in the closed position and install the covers, as applicable to the container, upon conclusion of the filling operation.

II. In the case when discrete quantities or batches of material intermittently are added to the container over a period of time, the owner or operator shall promptly secure the closure devices in the closed position and install covers, as applicable to the container, upon either the container being filled to the intended final level; the completion of a batch loading after which no additional material will be added to the container within 15 minutes; the person performing the loading operation leaving the

immediate vicinity of the container; or the shutdown of the process generating the material being added to the container, whichever condition occurs first.

(II) Opening of a closure device or cover is allowed for the purpose of removing hazardous waste from the container as follows:

I. For the purpose of meeting the requirements of this subparagraph, an empty container as defined in Rule ~~1200-01-11-.02~~ 0400-12-01-.02(1)(g)2 may be open to the atmosphere at any time (i.e., covers and closure devices are not required to be secured in the closed position on an empty container).

II. In the case when discrete quantities or batches of material are removed from the container but the container does not meet the conditions to be an empty container as defined in Rule ~~1200-01-11-.02~~ 0400-12-01-.02(1)(g)2, the owner or operator shall promptly secure the closure devices in the closed position and install covers, as applicable to the container, upon the completion of a batch removal after which no additional material will be removed from the container within 15 minutes or the person performing the unloading operation leaves the immediate vicinity of the container, whichever condition occurs first.

(III) Opening of a closure device or cover is allowed when access inside the container is needed to perform routine activities other than transfer of hazardous waste. Examples of such activities include those times when a worker needs to open a port to measure the depth of or sample the material in the container, or when a worker needs to open a manhole hatch to access equipment inside the container. Following completion of the activity, the owner or operator shall promptly secure the closure device in the closed position or reinstall the cover, as applicable to the container.

(IV) Opening of a spring-loaded, pressure-vacuum relief valve, conservation vent, or similar type of pressure relief device which vents to the atmosphere is allowed during normal operations for the purpose of maintaining the container internal pressure in accordance with the design specifications of the container. The device shall be designed to operate with no detectable organic emissions when the device is secured in the closed position. The settings at which the device opens shall be established such that the device remains in the closed position whenever the internal pressure of the container is within the internal pressure operating range determined by the owner or operator based on container manufacturer recommendations, applicable regulations, fire protection and prevention codes, standard engineering codes and practices, or other requirements for the safe handling of flammable, ignitable, explosive, reactive, or hazardous materials. Examples of normal operating conditions that may require these devices to open are during those times when the internal pressure of the container exceeds the internal pressure operating range for the container as a result of loading operations or diurnal ambient temperature fluctuations.

(V) Opening of a safety device, as defined in subparagraph (b) of this paragraph, is allowed at any time conditions require doing so to avoid an unsafe condition.

(iv) The owner or operator of containers using Container Level 1 controls shall inspect the containers and their covers and closure devices as follows:

(I) In the case when a hazardous waste already is in the container at the time the owner or operator first accepts possession of the container at the facility and the container is not emptied within 24 hours after the container is accepted at the facility (i.e., does not meet the conditions for an empty container as specified in Rule ~~1200-01-11-.02~~ 0400-12-01-.02(1)(g)2), the owner or operator shall visually inspect the container and its cover and closure devices to check for visible cracks, holes, gaps, or other open spaces into the interior of the container when the cover and closure devices are secured in the closed position. The container visual inspection shall be conducted on or before the date that the container is accepted at the facility (i.e., the date the container becomes subject to the container standards of this paragraph ~~(29) of this Rule container standards~~). For purposes of this requirement, the date of acceptance is the date of signature that the facility owner or operator enters on Item 20 of the Uniform Hazardous Waste Manifest in the appendix to Rule ~~1200-01-11-.03~~ 0400-12-01-.03 (EPA Forms 8700-22 and 8700-22A), as required under subparagraph (5)(b) of this rule. If a defect is detected, the owner or operator shall repair the defect in accordance with the requirements of item ~~3(iv)~~ (III) of this ~~subparagraph~~ subpart.

(II) In the case when a container used for managing hazardous waste remains at the facility for a period of 1 year or more, the owner or operator shall visually inspect the container and its cover and closure devices initially and thereafter, at least once every 12 months, to check for visible cracks, holes, gaps, or other open spaces into the interior of the container when the cover and closure devices are secured in the closed position. If a defect is detected, the owner or operator shall repair the defect in accordance with the requirements of item ~~3(iv)~~ (III) of this ~~subparagraph~~ subpart.

(III) When a defect is detected for the container, cover, or closure devices, the owner or operator shall make first efforts at repair of the defect no later than 24 hours after detection, and repair shall be completed as soon as possible but no later than 5 calendar days after detection. If repair of a defect cannot be completed within 5 calendar days, then the hazardous waste shall be removed from the container and the container shall not be used to manage hazardous waste until the defect is repaired.

(v) The owner or operator shall maintain at the facility a copy of the procedure used to determine that containers with capacity of 0.46 m^3 or greater, which do not meet applicable DOT regulations as specified in part 6 of this subparagraph, are not managing hazardous waste in light material service.

4. Container Level 2 standards.

(i) A container using Container Level 2 controls is one of the following:

(I) A container that meets the applicable U.S. Department of Transportation (DOT) regulations on packaging hazardous materials for transportation as specified in part 6 of this subparagraph.

(II) A container that operates with no detectable organic emissions as defined in subparagraph (b) of this paragraph and determined in accordance with the procedure specified in part 7 of this subparagraph.

(III) A container that has been demonstrated within the preceding 12 months to be vapor-tight by using 40 CFR Part 60, Appendix A, Method 27 in

accordance with the procedure specified in part 8 of this subparagraph.

(ii) Transfer of hazardous waste in or out of a container using Container Level 2 controls shall be conducted in such a manner as to minimize exposure of the hazardous waste to the atmosphere, to the extent practical, considering the physical properties of the hazardous waste and good engineering and safety practices for handling flammable, ignitable, explosive, reactive or other hazardous materials. Examples of container loading procedures that the Department considers to meet the requirements of this subpart include using any one of the following: A submerged-fill pipe or other submerged-fill method to load liquids into the container; a vapor-balancing system or a vapor-recovery system to collect and control the vapors displaced from the container during filling operations; or a fitted opening in the top of a container through which the hazardous waste is filled and subsequently purging the transfer line before removing it from the container opening.

(iii) Whenever a hazardous waste is in a container using Container Level 2 controls, the owner or operator shall install all covers and closure devices for the container, and secure and maintain each closure device in the closed position except as follows:

(I) Opening of a closure device or cover is allowed for the purpose of adding hazardous waste or other material to the container as follows:

I. In the case when the container is filled to the intended final level in one continuous operation, the owner or operator shall promptly secure the closure devices in the closed position and install the covers, as applicable to the container, upon conclusion of the filling operation.

II. In the case when discrete quantities or batches of material intermittently are added to the container over a period of time, the owner or operator shall promptly secure the closure devices in the closed position and install covers, as applicable to the container, upon either the container being filled to the intended final level; the completion of a batch loading after which no additional material will be added to the container within 15 minutes; the person performing the loading operation leaving the immediate vicinity of the container; or the shutdown of the process generating the material being added to the container, whichever condition occurs first.

(II) Opening of a closure device or cover is allowed for the purpose of removing hazardous waste from the container as follows:

I. For the purpose of meeting the requirements of this subparagraph, an empty container as defined in Rule ~~1200-01-11-.02~~ 0400-12-01-.02(1)(g)2 may be open to the atmosphere at any time (i.e., covers and closure devices are not required to be secured in the closed position on an empty container).

II. In the case when discrete quantities or batches of material are removed from the container but the container does not meet the conditions to be an empty container as defined in Rule ~~1200-01-11-.02~~ 0400-12-01-.02(1)(g)2, the owner or operator shall promptly secure the closure devices in the closed position and install covers, as applicable to the container, upon the completion of a batch removal after which no additional material will be removed from the container within 15 minutes or the

person performing the unloading operation leaves the immediate vicinity of the container, whichever condition occurs first.

(III) Opening of a closure device or cover is allowed when access inside the container is needed to perform routine activities other than transfer of hazardous waste. Examples of such activities include those times when a worker needs to open a port to measure the depth of or sample the material in the container, or when a worker needs to open a manhole hatch to access equipment inside the container. Following completion of the activity, the owner or operator shall promptly secure the closure device in the closed position or reinstall the cover, as applicable to the container.

(IV) Opening of a spring-loaded, pressure-vacuum relief valve, conservation vent, or similar type of pressure relief device which vents to the atmosphere is allowed during normal operations for the purpose of maintaining the internal pressure of the container in accordance with the container design specifications. The device shall be designed to operate with no detectable organic emission when the device is secured in the closed position. The settings at which the device opens shall be established such that the device remains in the closed position whenever the internal pressure of the container is within the internal pressure operating range determined by the owner or operator based on container manufacturer recommendations, applicable regulations, fire protection and prevention codes, standard engineering codes and practices, or other requirements for the safe handling of flammable, ignitable, explosive, reactive, or hazardous materials. Examples of normal operating conditions that may require these devices to open are during those times when the internal pressure of the container exceeds the internal pressure operating range for the container as a result of loading operations or diurnal ambient temperature fluctuations.

(V) Opening of a safety device, as defined in subparagraph (b) of this paragraph, is allowed at any time conditions require doing so to avoid an unsafe condition.

(iv) The owner or operator of containers using Container Level 2 controls shall inspect the containers and their covers and closure devices as follows:

(I) In the case when a hazardous waste already is in the container at the time the owner or operator first accepts possession of the container at the facility and the container is not emptied within 24 hours after the container is accepted at the facility (i.e., does not meet the conditions for an empty container as specified in Rule ~~1200-01-11-.02~~ 0400-12-01-.02(1)(g)2), the owner or operator shall visually inspect the container and its cover and closure devices to check for visible cracks, holes, gaps, or other open spaces into the interior of the container when the cover and closure devices are secured in the closed position. The container visual inspection shall be conducted on or before the date that the container is accepted at the facility (i.e., the date the container becomes subject to the container standards of this paragraph ~~(29) of this Rule container standards~~). For purposes of this requirement, the date of acceptance is the date of signature that the facility owner or operator enters on Item 20 of the Uniform Hazardous Waste Manifest in the appendix to Rule ~~1200-01-11-.03~~ 0400-12-01-.03 (EPA Forms 8700-22 and 8700-22A), as required under subparagraph (5)(b) of this rule. If a defect is detected, the owner or operator shall repair the defect in accordance with the requirements of item ~~4(iv)~~ (III) of this ~~subparagraph~~ subpart.

(II) In the case when a container used for managing hazardous waste remains at the facility for a period of 1 year or more, the owner or operator shall visually inspect the container and its cover and closure devices initially and thereafter, at least once every 12 months, to check for visible cracks, holes, gaps, or other open spaces into the interior of the container when the cover and closure devices are secured in the closed position. If a defect is detected, the owner or operator shall repair the defect in accordance with the requirements of item ~~4(iv)~~ (III) of this ~~subparagraph~~ subpart.

(III) When a defect is detected for the container, cover, or closure devices, the owner or operator shall make first efforts at repair of the defect no later than 24 hours after detection, and repair shall be completed as soon as possible but no later than 5 calendar days after detection. If repair of a defect cannot be completed within 5 calendar days, then the hazardous waste shall be removed from the container and the container shall not be used to manage hazardous waste until the defect is repaired.

5. Container Level 3 standards.

(i) A container using Container Level 3 controls is one of the following:

(I) A container that is vented directly through a closed-vent system to a control device in accordance with the requirements of item ~~5~~ (ii)(II) of this ~~subparagraph~~ part.

(II) A container that is vented inside an enclosure which is exhausted through a closed-vent system to a control device in accordance with the requirements of items ~~5~~ (ii)(I) and ~~5(ii)~~ (II) of this ~~subparagraph~~ part.

(ii) The owner or operator shall meet the following requirements, as applicable to the type of air emission control equipment selected by the owner or operator:

(I) The container enclosure shall be designed and operated in accordance with the criteria for a permanent total enclosure as specified in "Procedure T--Criteria for and Verification of a Permanent or Temporary Total Enclosure" under 40 CFR 52.741, Appendix B. The enclosure may have permanent or temporary openings to allow worker access; passage of containers through the enclosure by conveyor or other mechanical means; entry of permanent mechanical or electrical equipment; or direct airflow into the enclosure. The owner or operator shall perform the verification procedure for the enclosure as specified in Section 5.0 to "Procedure T--Criteria for and Verification of a Permanent or Temporary Total Enclosure" initially when the enclosure is first installed and, thereafter, annually.

(II) The closed-vent system and control device shall be designed and operated in accordance with the requirements of subparagraph (i) of this paragraph.

(iii) Safety devices, as defined in subparagraph (b) of this paragraph, may be installed and operated as necessary on any container, enclosure, closed-vent system, or control device used to comply with the requirements of subpart ~~5~~ (i) of this ~~subparagraph~~ part.

(iv) Owners and operators using Container Level 3 controls in accordance with the provisions of this paragraph shall inspect and monitor the closed-vent systems and control devices as specified in subparagraph (i) of this paragraph.

(v) Owners and operators that use Container Level 3 controls in accordance with the provisions of this paragraph shall prepare and maintain the records specified in part (k)4 of this paragraph.

(vi) Transfer of hazardous waste in or out of a container using Container Level 3 controls shall be conducted in such a manner as to minimize exposure of the hazardous waste to the atmosphere, to the extent practical, considering the physical properties of the hazardous waste and good engineering and safety practices for handling flammable, ignitable, explosive, reactive, or other hazardous materials. Examples of container loading procedures that the Department considers to meet the requirements of this subpart include using any one of the following: A submerged-fill pipe or other submerged-fill method to load liquids into the container; a vapor-balancing system or a vapor-recovery system to collect and control the vapors displaced from the container during filling operations; or a fitted opening in the top of a container through which the hazardous waste is filled and subsequently purging the transfer line before removing it from the container opening.

6. For the purpose of compliance with item 3(i)(I) or 4(i)(I) of this subparagraph, containers shall be used that meet the applicable U.S. Department of Transportation (DOT) regulations on packaging hazardous materials for transportation as follows:

(i) The container meets the applicable requirements specified in 49 CFR part 178-- Specifications for Packaging or 49 CFR part 179-- Specifications for Tank Cars.

(ii) Hazardous waste is managed in the container in accordance with the applicable requirements specified in 49 CFR part 107, subpart B-- Exemptions; 49 CFR part 172--Hazardous Materials Table, Special Provisions, Hazardous Materials Communications, Emergency Response Information, and Training Requirements; 49 CFR part 173--Shippers-- General Requirements for Shipments and Packages; and 49 CFR part 180-- Continuing Qualification and Maintenance of Packagings.

(iii) For the purpose of complying with this paragraph, no exceptions to the 49 CFR part 178 or part 179 regulations are allowed except as provided for in subpart ~~6~~ (iv) of this ~~subparagraph~~ part.

(iv) For a lab pack that is managed in accordance with the requirements of 49 CFR part 178 for the purpose of complying with this paragraph, an owner or operator may comply with the exceptions for combination packagings specified in 49 CFR 173.12(b).

7. To determine compliance with the no detectable organic emissions requirements of item 4(i)(II) of this subparagraph, the procedure specified in part (e)4 of this paragraph shall be used.

(i) Each potential leak interface (i.e., a location where organic vapor leakage could occur) on the container, its cover, and associated closure devices, as applicable to the container, shall be checked. Potential leak interfaces that are associated with containers include, but are not limited to: The interface of the cover rim and the container wall; the periphery of any opening on the container or container cover and its associated closure device; and the sealing seat interface on a spring-loaded pressure-relief valve.

(ii) The test shall be performed when the container is filled with a material having a volatile organic concentration representative of the range of volatile organic concentrations for the hazardous wastes expected to be managed in this type of container. During the test, the container cover and closure devices shall be

secured in the closed position.

8. Procedure for determining a container to be vapor-tight using Method 27 of 40 CFR Part 60, Appendix A for the purpose of complying with item 4(i)(III) of this subparagraph.

(i) The test shall be performed in accordance with Method 27 of 40 CFR part 60, Appendix A.

(ii) A pressure measurement device shall be used that has a precision of ± 2.5 mm water and that is capable of measuring above the pressure at which the container is to be tested for vapor tightness.

(iii) If the test results determined by Method 27 indicate that the container sustains a pressure change less than or equal to 750 Pascals within 5 minutes after it is pressurized to a minimum of 4,500 Pascals, then the container is determined to be vapor-tight.

(i) Standards: Closed-vent Systems and Control Devices [40 CFR 265.1088]

1. This subparagraph applies to each closed-vent system and control device installed and operated by the owner or operator to control air emissions in accordance with standards of this paragraph.

2. The closed-vent system shall meet the following requirements:

(i) The closed-vent system shall route the gases, vapors, and fumes emitted from the hazardous waste in the waste management unit to a control device that meets the requirements specified in part 3 of this subparagraph.

(ii) The closed-vent system shall be designed and operated in accordance with the requirements specified in part (27)(d)10 of this rule.

(iii) In the case when the closed-vent system includes bypass devices that could be used to divert the gas or vapor stream to the atmosphere before entering the control device, each bypass device shall be equipped with either a flow indicator as specified in item ~~2(iii)~~ (I) of this ~~subparagraph~~ subpart or a seal or locking device as specified in item ~~2(iii)~~ (II) of this ~~subparagraph~~ subpart. For the purpose of complying with this subpart, low leg drains, high point bleeds, analyzer vents, open-ended valves or lines, spring-loaded pressure relief valves, and other fittings used for safety purposes are not considered to be bypass devices.

(I) If a flow indicator is used to comply with this subpart ~~2(iii) of this subparagraph~~, the indicator shall be installed at the inlet to the bypass line used to divert gases and vapors from the closed-vent system to the atmosphere at a point upstream of the control device inlet. For this item, a flow indicator means a device which indicates the presence of either gas or vapor flow in the bypass line.

(II) If a seal or locking device is used to comply with this subpart ~~2(iii) of this subparagraph~~, the device shall be placed on the mechanism by which the bypass device position is controlled (e.g., valve handle, damper lever) when the bypass device is in the closed position such that the bypass device cannot be opened without breaking the seal or removing the lock. Examples of such devices include, but are not limited to, a car-seal or a lock-and-key configuration valve. The owner or operator shall visually inspect the seal or closure mechanism at least once every month to verify that the bypass mechanism is maintained in the closed position.

(iv) The closed-vent system shall be inspected and monitored by the owner or

operator in accordance with the procedure specified in part (27)(d)11 of this rule.

3. The control device shall meet the following requirements:

(i) The control device shall be one of the following devices:

(I) A control device designed and operated to reduce the total organic content of the inlet vapor stream vented to the control device by at least 95 percent by weight;

(II) An enclosed combustion device designed and operated in accordance with the requirements of part (27)(d)3 of this rule; or

(III) A flare designed and operated in accordance with the requirements of part (27)(d)4 of this rule.

(ii) The owner or operator who elects to use a closed-vent system and control device to comply with the requirements of this subparagraph shall comply with the requirements specified in items ~~3(ii)~~ (I) through ~~3(ii)~~ (VI) of this ~~subparagraph~~ subpart.

(I) Periods of planned routine maintenance of the control device, during which the control device does not meet the specifications of items ~~3~~ (i)(I), ~~3(i)~~ (II), or ~~3(i)~~ (III) of this ~~subparagraph~~ part, as applicable, shall not exceed 240 hours per year.

(II) The specifications and requirements in items ~~3~~ (i)(I), ~~3(i)~~ (II), and ~~3(i)~~ (III) of this ~~subparagraph~~ part for control devices do not apply during periods of planned routine maintenance.

(III) The specifications and requirements in items ~~3~~ (i)(I), ~~3(i)~~ (II), and ~~3(i)~~ (III) of this ~~subparagraph~~ part for control devices do not apply during a control device system malfunction.

(IV) The owner or operator shall demonstrate compliance with the requirements of item ~~3(ii)~~ (I) of this ~~subparagraph~~ subpart (i.e., planned routine maintenance of a control device, during which the control device does not meet the specifications of subpart ~~3~~ (i) of this ~~subparagraph~~ part, as applicable, shall not exceed 240 hours per year) by recording the information specified in item (k)5(i)(V) of this paragraph.

(V) The owner or operator shall correct control device system malfunctions as soon as practicable after their occurrence in order to minimize excess emissions of air pollutants.

(VI) The owner or operator shall operate the closed-vent system such that gases, vapors, and/or fumes are not actively vented to the control device during periods of planned maintenance or control device system malfunction (i.e., periods when the control device is not operating or not operating normally) except in cases when it is necessary to vent the gases, vapors, or fumes to avoid an unsafe condition or to implement malfunction corrective actions or planned maintenance actions.

(iii) The owner or operator using a carbon adsorption system to comply with subpart ~~3~~ (i) of this ~~subparagraph~~ part shall operate and maintain the control device in accordance with the following requirements:

(I) Following the initial startup of the control device, all activated carbon in the control device shall be replaced with fresh carbon on a regular basis

in accordance with the requirements of part (27)(d)7 or part (27)(d)8 of this rule.

(II) All carbon that is a hazardous waste and that is removed from the control device shall be managed in accordance with the requirements of part (27)(d)13 of this rule, regardless of the average volatile organic concentration of the carbon.

(iv) An owner or operator using a control device other than a thermal vapor incinerator, flare, boiler, process heater, condenser, or carbon adsorption system to comply with subpart ~~3~~ (i) of this ~~subparagraph~~ part shall operate and maintain the control device in accordance with the requirements of part (27)(d)9 of this rule.

(v) The owner or operator shall demonstrate that a control device achieves the performance requirements of subpart ~~3~~ (i) of this ~~subparagraph~~ part as follows:

(I) An owner or operator shall demonstrate using either a performance test as specified in item ~~3(v)~~ (III) of this ~~subparagraph~~ subpart or a design analysis as specified in item ~~3(v)~~ (IV) of this ~~subparagraph~~ subpart the performance of each control device except for the following:

I. A flare;

II. A boiler or process heater with a design heat input capacity of 44 megawatts or greater;

III. A boiler or process heater into which the vent stream is introduced with the primary fuel;

IV. A boiler or industrial furnace burning hazardous waste for which the owner or operator has been issued a final permit under Rule ~~1200-01-11-.07~~ 0400-12-01-.07 and has designed and operates the unit in accordance with the requirements of Rule ~~1200-01-11-.09~~ 0400-12-01-.09(8); or

V. A boiler or industrial furnace burning hazardous waste for which the owner or operator has designed and operates in accordance with the interim status requirements of Rule ~~1200-01-11-.09~~ 0400-12-01-.09(8).

(II) An owner or operator shall demonstrate the performance of each flare in accordance with the requirements specified in part (27)(d)5 of this rule.

(III) For a performance test conducted to meet the requirements of item ~~3(v)~~ (I) of this ~~subparagraph~~ subpart, the owner or operator shall use the test methods and procedures specified in subparts (27)(e)3(i) through ~~3~~ (iv) of this rule.

(IV) For a design analysis conducted to meet the requirements of item ~~3(v)~~ (I) of this ~~subparagraph~~ subpart, the design analysis shall meet the requirements specified in item (27)(f)2(iv)(III) of this rule.

(V) The owner or operator shall demonstrate that a carbon adsorption system achieves the performance requirements of subpart ~~3~~ (i) of this ~~subparagraph~~ part based on the total quantity of organics vented to the atmosphere from all carbon adsorption system equipment that is used for organic adsorption, organic desorption or carbon regeneration, organic recovery, and carbon disposal.

(vi) If the owner or operator and the Commissioner do not agree on a demonstration of control device performance using a design analysis then the disagreement shall be resolved using the results of a performance test performed by the owner or operator in accordance with the requirements of item 3 (v)(III) of this ~~subparagraph~~ part. The Commissioner may choose to have an authorized representative observe the performance test.

(vii) The closed-vent system and control device shall be inspected and monitored by the owner or operator in accordance with the procedures specified in subpart (27)(d)6(ii) and part (27)(d)11 of this rule. The readings from each monitoring device required by subpart (27)(d)6(ii) of this rule shall be inspected at least once each operating day to check control device operation. Any necessary corrective measures shall be immediately implemented to ensure the control device is operated in compliance with the requirements of this subparagraph.

(j) Inspection and Monitoring Requirements [40 CFR 265.1089]

1. The owner or operator shall inspect and monitor air emission control equipment used to comply with this paragraph in accordance with the applicable requirements specified in subparagraphs (f) through (i) of this paragraph.

2. The owner or operator shall develop and implement a written plan and schedule to perform the inspections and monitoring required part 1 of this subparagraph. The owner or operator shall incorporate this plan and schedule into the facility inspection plan required under subparagraph (2)(f) of this rule.

(k) Recordkeeping Requirements [40 CFR 265.1090]

1. Each owner or operator of a facility subject to requirements in this paragraph shall record and maintain the information specified in parts 2 through 10 of this subparagraph, as applicable to the facility. Except for air emission control equipment design documentation and information required by parts 9 and 10 of this subparagraph, records required by this subparagraph shall be maintained in the operating record for a minimum of 3 years. Air emission control equipment design documentation shall be maintained in the operating record until the air emission control equipment is replaced or otherwise no longer in service. Information required by parts 9 and 10 of this subparagraph shall be maintained in the operating record for as long as the waste management unit is not using air emission controls specified in subparagraphs (f) through (i) of this paragraph in accordance with the conditions specified in part (a)4 or subpart (a)2(vii) of this paragraph, respectively.

2. The owner or operator of a tank using air emission controls in accordance with the requirements of subparagraph (f) of this paragraph shall prepare and maintain records for the tank that include the following information:

(i) For each tank using air emission controls in accordance with the requirements of subparagraph (f) of this paragraph, the owner or operator shall record:

(I) A tank identification number (or other unique identification description as selected by the owner or operator).

(II) A record for each inspection required by subparagraph (f) of this paragraph that includes the following information:

I. Date inspection was conducted.

II. For each defect detected during the inspection: The location of the defect, a description of the defect, the date of detection, and

corrective action taken to repair the defect. In the event that repair of the defect is delayed in accordance with the provisions of subparagraph (f) of this paragraph, the owner or operator shall also record the reason for the delay and the date that completion of repair of the defect is expected.

(ii) In addition to the information required by subpart ~~2~~ (i) of this ~~subparagraph~~ part, the owner or operator shall record the following information, as applicable to the tank:

(I) The owner or operator using a fixed roof to comply with the Tank Level 1 control requirements specified in part (f)3 of this paragraph shall prepare and maintain records for each determination for the maximum organic vapor pressure of the hazardous waste in the tank performed in accordance with the requirements of part (f)3 of this paragraph. The records shall include the date and time the samples were collected, the analysis method used, and the analysis results.

(II) The owner or operator using an internal floating roof to comply with the Tank Level 2 control requirements specified in part (f)5 of this paragraph shall prepare and maintain documentation describing the floating roof design.

(III) Owners and operators using an external floating roof to comply with the Tank Level 2 control requirements specified in part (f)6 of this paragraph shall prepare and maintain the following records:

I. Documentation describing the floating roof design and the dimensions of the tank.

II. Records for each seal gap inspection required by subpart (f)6(iii) of this paragraph describing the results of the seal gap measurements. The records shall include the date that the measurements were performed, the raw data obtained for the measurements, and the calculations of the total gap surface area. In the event that the seal gap measurements do not conform to the specifications in subpart (f)6(i) of this paragraph, the records shall include a description of the repairs that were made, the date the repairs were made, and the date the tank was emptied, if necessary.

(IV) Each owner or operator using an enclosure to comply with the Tank Level 2 control requirements specified in part (f)9 of this paragraph shall prepare and maintain the following records:

I. Records for the most recent set of calculations and measurements performed by the owner or operator to verify that the enclosure meets the criteria of a permanent total enclosure as specified in "Procedure T--Criteria for and Verification of a Permanent or Temporary Total Enclosure" under 40 CFR 52.741, Appendix B.

II. Records required for the closed-vent system and control device in accordance with the requirements of part 5 of this paragraph.

3. The owner or operator of a surface impoundment using air emission controls in accordance with the requirements of subparagraph (g) of this paragraph shall prepare and maintain records for the surface impoundment that include the following information:

(i) A surface impoundment identification number (or other unique identification description as selected by the owner or operator).

(ii) Documentation describing the floating membrane cover or cover design, as applicable to the surface impoundment, that includes information prepared by the owner or operator or provided by the cover manufacturer or vendor describing the cover design, and certification by the owner or operator that the cover meets the specifications listed in part (g)3 of this paragraph.

(iii) A record for each inspection required by subparagraph (g) of this paragraph that includes the following information:

(I) Date inspection was conducted.

(II) For each defect detected during the inspection the following information: The location of the defect, a description of the defect, the date of detection, and corrective action taken to repair the defect. In the event that repair of the defect is delayed in accordance with the provisions of part (g)6 of this paragraph, the owner or operator shall also record the reason for the delay and the date that completion of repair of the defect is expected.

(iv) For a surface impoundment equipped with a cover and vented through a closed-vent system to a control device, the owner or operator shall prepare and maintain the records specified in part 5 of this subparagraph.

4. The owner or operator of containers using Container Level 3 air emission controls in accordance with the requirements of subparagraph (h) of this paragraph shall prepare and maintain records that include the following information:

(i) Records for the most recent set of calculations and measurements performed by the owner or operator to verify that the enclosure meets the criteria of a permanent total enclosure as specified in "Procedure T--Criteria for and Verification of a Permanent or Temporary Total Enclosure" under 40 CFR 52.741, Appendix B.

(ii) Records required for the closed-vent system and control device in accordance with the requirements of part 5 of this subparagraph.

5. The owner or operator using a closed-vent system and control device in accordance with the requirements of subparagraph (i) of this paragraph shall prepare and maintain records that include the following information:

(i) Documentation for the closed-vent system and control device that includes:

(I) Certification that is signed and dated by the owner or operator stating that the control device is designed to operate at the performance level documented by a design analysis as specified in item ~~5(i)~~ (II) of this ~~subparagraph~~ subpart or by performance tests as specified in item ~~5(i)~~ (III) of this ~~subparagraph~~ subpart when the tank, surface impoundment, or container is or would be operating at capacity or the highest level reasonably expected to occur.

(II) If a design analysis is used, then design documentation as specified in subpart (27)(f)2(iv) of this rule. The documentation shall include information prepared by the owner or operator or provided by the control device manufacturer or vendor that describes the control device design in accordance with item (27)(f)2(iv)(III) of this rule and certification by the owner or operator that the control equipment meets the applicable

specifications.

(III) If performance tests are used, then a performance test plan as specified in subpart (27)(f)2(iii) of this rule and all test results.

(IV) Information as required by subparts (27)(f)3(i) and (ii) of this rule, as applicable.

(V) An owner or operator shall record, on a semiannual basis, the information specified in subitems ~~5(i)(V)~~ I and II of this ~~subparagraph~~ item for those planned routine maintenance operations that would require the control device not to meet the requirements of item (i)3(i)(I), (II) or (III) ~~of subparagraph (i)~~ of this paragraph, as applicable.

I. A description of the planned routine maintenance that is anticipated to be performed for the control device during the next 6-month period. This description shall include the type of maintenance necessary, planned frequency of maintenance, and lengths of maintenance periods.

II. A description of the planned routine maintenance that was performed for the control device during the previous 6-month period. This description shall include the type of maintenance performed and the total number of hours during those 6 months that the control device did not meet the requirements of item (i)3(i)(I), (II) or (III) ~~of subparagraph (i)~~ of this paragraph, as applicable, due to planned routine maintenance.

(VI) An owner or operator shall record the information specified in subitems ~~5(i)(VI)~~ I through III of this ~~subparagraph~~ item for those unexpected control device system malfunctions that would require the control device not to meet the requirements of item (i)3(i)(I), (II) or (III) ~~of subparagraph (i)~~ of this paragraph, as applicable.

I. The occurrence and duration of each malfunction of the control device system.

II. The duration of each period during a malfunction when gases, vapors, or fumes are vented from the waste management unit through the closed-vent system to the control device while the control device is not properly functioning.

III. Actions taken during periods of malfunction to restore a malfunctioning control device to its normal or usual manner of operation.

(VII) Records of the management of carbon removed from a carbon adsorption system conducted in accordance with item (i)3(iii)(II) of this paragraph.

6. The owner or operator of a tank, surface impoundment, or container exempted from standards in accordance with the provisions of part (d)3 of this paragraph shall prepare and maintain the following records, as applicable:

(i) For tanks, surface impoundments, or containers exempted under the hazardous waste organic concentration conditions specified in subpart (d)3(i) or items (d)3(ii)(I) through (VI) of this paragraph, the owner or operator shall record the information used for each waste determination (e.g., test results, measurements, calculations, and other documentation) in the facility operating log. If analysis

results for waste samples are used for the waste determination, then the owner or operator shall record the date, time, and location that each waste sample is collected in accordance with applicable requirements of subparagraph (e) of this paragraph.

(ii) For tanks, surface impoundments, or containers exempted under the provisions of item (d)3(ii)(VII) or (VIII) of this paragraph, the owner or operator shall record the identification number for the incinerator, boiler, or industrial furnace in which the hazardous waste is treated.

7. An owner or operator designating a cover as "unsafe to inspect and monitor" pursuant to part (f)12 or (g)7 of this paragraph shall record in a log that is kept in the facility operating record the following information: The identification numbers for waste management units with covers that are designated as "unsafe to inspect and monitor," the explanation for each cover stating why the cover is unsafe to inspect and monitor, and the plan and schedule for inspecting and monitoring each cover.

8. The owner or operator of a facility that is subject to this paragraph and to the control device standards in 40 CFR Part 60, subpart VV, or 40 CFR part 61, subpart V, may elect to demonstrate compliance with the applicable subparagraph of this paragraph by documentation either pursuant to this paragraph, or pursuant to the provisions of 40 CFR part 60, subpart VV or 40 CFR Part 61, subpart V, to the extent that the documentation required by 40 CFR parts 60 or 61 duplicates the documentation required by this subparagraph.

9. For each tank or container not using air emission controls specified in subparagraphs (f) through (i) of this paragraph in accordance with the conditions specified in part (a)4 of this paragraph, the owner or operator shall record and maintain the following information:

(i) A list of the individual organic peroxide compounds manufactured at the facility that meet the conditions specified in subpart (a)4(i) of this paragraph.

(ii) A description of how the hazardous waste containing the organic peroxide compounds identified in subpart 9 (i) of this ~~subparagraph~~ part are managed at the facility in tanks and containers. This description shall include the following information:

(I) For the tanks used at the facility to manage this hazardous waste, sufficient information shall be provided to describe for each tank: A facility identification number for the tank; the purpose and placement of this tank in the management train of this hazardous waste; and the procedures used to ultimately dispose of the hazardous waste managed in the tanks.

(II) For containers used at the facility to manage these hazardous wastes, sufficient information shall be provided to describe: A facility identification number for the container or group of containers; the purpose and placement of this container, or group of containers, in the management train of this hazardous waste; and the procedures used to ultimately dispose of the hazardous waste handled in the containers.

(iii) An explanation of why managing the hazardous waste containing the organic peroxide compounds identified in subpart 9 (i) of this ~~subparagraph~~ part in the tanks and containers as described in subpart 9 (ii) of this ~~subparagraph~~ part would create an undue safety hazard if the air emission controls, as required under subparagraphs (f) through (i) of this paragraph, are installed and operated on these waste management units. This explanation shall include the following information:

(I) For tanks used at the facility to manage these hazardous wastes, sufficient information shall be provided to explain: How use of the required air emission controls on the tanks would affect the tank design features and facility operating procedures currently used to prevent an undue safety hazard during the management of this hazardous waste in the tanks; and why installation of safety devices on the required air emission controls, as allowed under this subpart, will not address those situations in which evacuation of tanks equipped with these air emission controls is necessary and consistent with good engineering and safety practices for handling organic peroxides.

(II) For containers used at the facility to manage these hazardous wastes, sufficient information shall be provided to explain: How use of the required air emission controls on the containers would affect the container design features and handling procedures currently used to prevent an undue safety hazard during the management of this hazardous waste in the containers; and why installation of safety devices on the required air emission controls, as allowed under this paragraph, will not address those situations in which evacuation of containers equipped with these air emission controls is necessary and consistent with good engineering and safety practices for handling organic peroxides.

10. For each hazardous waste management unit not using air emission controls specified in subparagraphs (f) through (i) of this paragraph in accordance with the provisions of subpart (a)2(vii) of this paragraph, the owner and operator shall record and maintain the following information:

(i) Certification that the waste management unit is equipped with and operating air emission controls in accordance with the requirements of an applicable Clean Air Act regulation codified under 40 CFR Part 60, Part 61, or Part 63.

(ii) Identification of the specific requirements codified under 40 CFR Part 60, Part 61, or Part 63 with which the waste management unit is in compliance.

(l) (RESERVED) [40 CFR 265.1091]

(30) Containment Buildings [40 CFR 265 Subpart DD]

(a) Applicability [40 CFR 265.1100]

The requirements of this paragraph apply to owners or operators who store or treat hazardous waste in units designed and operated under subparagraph (b) of this paragraph. The owner or operator is not subject to the definition of land disposal in Rule ~~1200-01-11-.01~~ 0400-12-01-.01(2)(a) provided that the unit:

1. Is a completely enclosed, self-supporting structure that is designed and constructed of manmade materials of sufficient strength and thickness to support themselves, the waste contents, and any personnel and heavy equipment that operate within the units, and to prevent failure due to pressure gradients, settlement, compression, or uplift, physical contact with the hazardous wastes to which they are exposed; climatic conditions; and the stresses of daily operation, including the movement of heavy equipment within the unit and contact of such equipment with containment walls;

2. Has a primary barrier that is designed to be sufficiently durable to withstand the movement of personnel and handling equipment within the unit;

3. If the unit is used to manage liquids, has:

(i) A primary barrier designed and constructed of materials to prevent migration of hazardous constituents into the barrier;

(ii) A liquid collection system designed and constructed of materials to minimize the accumulation of liquid on the primary barrier; and

(iii) A secondary containment system designed and constructed of materials to prevent migration of hazardous constituents into the barrier, with a leak detection and liquid collection system capable of detecting, collecting, and removing leaks of hazardous constituents at the earliest possible time, unless the unit has been granted a variance from the secondary containment system requirements under subpart (b)2(iv) of this paragraph;

4. Has controls as needed to prevent fugitive dust emissions; and

5. Is designed and operated to ensure containment and prevent the tracking of materials from the unit by personnel or equipment.

(b) Design and Operating Standards [40 CFR 265.1101]

1. All containment buildings must comply with the following design standards:

(i) The containment building must be completely enclosed with a floor, walls, and a roof to prevent exposure to the elements, (e.g., precipitation, wind, run-on), and to assure containment of managed wastes.

(ii) The floor and containment walls of the unit, including the secondary containment system if required under part 2 of this subparagraph, must be designed and constructed of materials of sufficient strength and thickness to support themselves, the waste contents, and any personnel and heavy equipment that operate within the unit, and to prevent failure due to pressure gradients, settlement, compression, or uplift, physical contact with the hazardous wastes to which they are exposed; climatic conditions; and the stresses of daily operation, including the movement of heavy equipment within the unit and contact of such equipment with containment walls. The unit must be designed so that it has sufficient structural strength to prevent collapse or other failure. All surfaces to be in contact with hazardous wastes must be chemically compatible with those wastes. The Commissioner will consider standards established by professional organizations generally recognized by the industry such as the American Concrete Institute (ACI) and the American Society of Testing Materials (ASTM) in judging the structural integrity requirements of this part. If appropriate to the nature of the waste management operation to take place in the unit, an exception to the structural strength requirement may be made for light-weight doors and windows that meet these criteria:

(I) They provide an effective barrier against fugitive dust emissions under item 3(i)(IV) of this subparagraph; and

(II) The unit is designed and operated in a fashion that assures that wastes will not actually come in contact with these openings.

(III) Incompatible hazardous wastes or treatment reagents must not be placed in the unit or its secondary containment system if they could cause the unit or secondary containment system to leak, corrode, or otherwise fail.

(IV) A containment building must have a primary barrier designed to withstand the movement of personnel, waste, and handling equipment in the unit during the operating life of the unit and appropriate for the

physical and chemical characteristics of the waste to be managed.

2. For a containment building used to manage hazardous wastes containing free liquids or treated with free liquids (the presence of which is determined by the paint filter test, a visual examination, or other appropriate means), the owner or operator must include:

(i) A primary barrier designed and constructed of materials to prevent the migration of hazardous constituents into the barrier (e.g. a geomembrane covered by a concrete wear surface).

(ii) A liquid collection and removal system to prevent the accumulation of liquid on the primary barrier of the containment building:

(I) The primary barrier must be sloped to drain liquids to the associated collection system; and

(II) Liquids and waste must be collected and removed to minimize hydraulic head on the containment system at the earliest practicable time that protects human health and the environment.

(iii) A secondary containment system including a secondary barrier designed and constructed to prevent migration of hazardous constituents into the barrier, and a leak detection system that is capable of detecting failure of the primary barrier and collecting accumulated hazardous wastes and liquids at the earliest practicable time.

(I) The requirements of the leak detection component of the secondary containment system are satisfied by installation of a system that is, at a minimum:

I. Constructed with a bottom slope of 1 percent or more; and

II. Constructed of a granular drainage material with a hydraulic conductivity of 1×10^{-2} cm/sec or more and a thickness of 12 inches (30.5 cm) or more, or constructed of synthetic or geonet drainage materials with a transmissivity of 3×10^{-5} m^2/sec or more.

(II) If treatment is to be conducted in the building, an area in which such treatment will be conducted must be designed to prevent the release of liquids, wet materials, or liquid aerosols to other portions of the building.

(III) The secondary containment system must be constructed of materials that are chemically resistant to the waste and liquids managed in the containment building and of sufficient strength and thickness to prevent collapse under the pressure exerted by overlaying materials and by any equipment used in the containment building. (Containment buildings can serve as secondary containment systems for tanks placed within the building under certain conditions. A containment building can serve as an external liner system for a tank, provided it meets the requirements of subpart (10)(d)5(i) of this rule. In addition, the containment building must meet the requirements of parts (10)(d)2 and 3 of this rule to be considered an acceptable secondary containment system for a tank.)

(iv) For existing units other than 90-day generator units, the Commissioner may delay the secondary containment requirement for up to two years, based on a demonstration by the owner or operator that the unit substantially meets the standards of this paragraph. In making this demonstration, the owner or operator must:

(I) Provide written notice to the Commissioner of their request by February 18, 1993. This notification must describe the unit and its operating practices with specific reference to the performance of existing containment systems, and specific plans for retrofitting the unit with secondary containment;

(II) Respond to any comments from the Commissioner on these plans within 30 days; and

(III) Fulfill the terms of the revised plans, if such plans are approved by the Commissioner.

3. Owners or operators of all containment buildings must:

(i) Use controls and practices to ensure containment of the hazardous waste within the unit; and, at a minimum:

(I) Maintain the primary barrier to be free of significant cracks, gaps, corrosion, or other deterioration that could cause hazardous waste to be released from the primary barrier;

(II) Maintain the level of the stored/treated hazardous waste within the containment walls of the unit so that the height of any containment wall is not exceeded;

(III) Take measures to prevent the tracking of hazardous waste out of the unit by personnel or by equipment used in handling the waste. An area must be designated to decontaminate equipment and any rinsate must be collected and properly managed; and

(IV) Take measures to control fugitive dust emissions such that any openings (doors, windows, vents, cracks, etc.) exhibit no visible emissions. In addition, all associated particulate collection devices (e.g., fabric filter, electrostatic precipitator) must be operated and maintained with sound air pollution control practices. This state of no visible emissions must be maintained effectively at all times during normal operating conditions, including when vehicles and personnel are entering and exiting the unit.

(ii) Obtain and keep on-site certification by a qualified Professional Engineer that the containment building design meets the requirements of parts 1 through 3 of this subparagraph.

(iii) Throughout the active life of the containment building, if the owner or operator detects a condition that could lead to or has caused a release of hazardous waste, the owner or operator must repair the condition promptly, in accordance with the following procedures.

(I) Upon detection of a condition that has led to a release of hazardous waste (e.g., upon detection of leakage from the primary barrier) the owner or operator must:

I. Enter a record of the discovery in the facility operating record;

II. Immediately remove the portion of the containment building affected by the condition from service;

III. Determine what steps must be taken to repair the containment building, remove any leakage from the secondary collection

system, and establish a schedule for accomplishing the cleanup and repairs; and

IV. Within 7 days after the discovery of the condition, notify the Commissioner of the condition, and within 14 working days, provide a written notice to the Commissioner with a description of the steps taken to repair the containment building, and the schedule for accomplishing the work.

(II) The Commissioner will review the information submitted, make a determination regarding whether the containment building must be removed from service completely or partially until repairs and cleanup are complete, and notify the owner or operator of the determination and the underlying rationale in writing.

(III) Upon completing all repairs and cleanup the owner or operator must notify the Commissioner in writing and provide a verification, signed by a qualified, registered professional engineer, that the repairs and cleanup have been completed according to the written plan submitted in accordance with subitem ~~3(iii)~~ (I)IV of this ~~subparagraph~~ subpart.

(iv) Inspect and record in the facility's operating record, at least once every seven days, ~~except for Performance Track member facilities, that must inspect up to once each month, upon approval of the Regional Administrator~~ data gathered from monitoring and leak detection equipment as well as the containment building and the area immediately surrounding the containment building to detect signs of releases of hazardous waste. ~~To apply for reduced inspection frequency, the Performance Track member facility must follow the procedures described in subpart (2)(f)2(v) of this rule.~~

4. For a containment building that contains both areas with and without secondary containment, the owner or operator must:

(i) Design and operate each area in accordance with the requirements enumerated in parts 1 through 3 of this subparagraph;

(ii) Take measures to prevent the release of liquids or wet materials into areas without secondary containment; and

(iii) Maintain in the facility's operating log a written description of the operating procedures used to maintain the integrity of areas without secondary containment.

5. Notwithstanding any other provision of this paragraph, the Commissioner may waive requirements for secondary containment for a permitted containment building where the owner or operator demonstrates that the only free liquids in the unit are limited amounts of dust suppression liquids required to meet occupational health and safety requirements, and where containment of managed wastes and liquids can be assured without a secondary containment system.

(c) Closure and Post-closure Care [40 CFR 265.1102]

1. At closure of a containment building, the owner or operator must remove or decontaminate all waste residues, contaminated containment system components (liners, etc.), contaminated subsoils, and structures and equipment contaminated with waste and leachate, and manage them as hazardous waste unless Rule ~~1200-01-11-.02~~ 0400-12-01-.02(1)(c)4 applies. The closure plan, closure activities, cost estimates for closure, and financial responsibility for containment buildings must meet all of the requirements specified in paragraphs (7) and (8) of this rule.

2. If, after removing or decontaminating all residues and making all reasonable efforts to effect removal or decontamination of contaminated components, subsoils, structures, and equipment as required in part 1 of this subparagraph, the owner or operator finds that not all contaminated subsoils can be practicably removed or decontaminated, he must close the facility and perform post-closure care in accordance with the closure and post-closure requirements that apply to landfills (subparagraph (14)(k) of this rule). In addition, for the purposes of closure, post-closure, and financial responsibility, such a containment building is then considered to be a landfill, and the owner or operator must meet all of the requirements for landfills specified in paragraphs (7) and (8) of this rule.

(31) Hazardous Waste Munitions and Explosives Storage [40 CFR 265 Subpart EE]

(a) Applicability [40 CFR 265.1200]

The requirements of this paragraph apply to owners or operators who store munitions and explosive hazardous wastes, except as subparagraph (1)(b) of this rule provides otherwise.

(NOTE: Depending on explosive hazards, hazardous waste munitions and explosives may also be managed in other types of storage units, including containment buildings (paragraph (30) of this rule), tanks (paragraph (10) of this rule), or containers (paragraph (9) of this rule); see Rule ~~1200-01-11-.09~~ 0400-12-01-.09(13)(f) for storage of waste military munitions.)

(b) Design and Operating Standards [40 CFR 265.1201]

1. Hazardous waste munitions and explosives storage units must be designed and operated with containment systems, controls, and monitoring that:

(i) Minimize the potential for detonation or other means of release of hazardous waste, hazardous constituents, hazardous decomposition products, or contaminated run-off to the soil, ground water, surface water, and atmosphere;

(ii) Provide a primary barrier, which may be a container (including a shell) or tank, designed to contain the hazardous waste;

(iii) For wastes stored outdoors, provide that the waste and containers will not be in standing precipitation;

(iv) For liquid wastes, provide a secondary containment system that assures that any released liquids are contained and promptly detected and removed from the waste area or vapor detection system that assures that any released liquids or vapors are promptly detected and an appropriate response taken (e.g., additional containment, such as overpacking, or removal from the waste area); and

(v) Provide monitoring and inspection procedures that assure the controls and containment systems are working as designed and that releases that may adversely impact human health or the environment are not escaping from the unit.

2. Hazardous waste munitions and explosives stored under this paragraph may be stored in one of the following:

(i) Earth-covered magazines. Earth-covered magazines must be:

(I) Constructed of waterproofed, reinforced concrete or structural steel arches, with steel doors that are kept closed when not being accessed;

(II) Designed and constructed:

I. To be of sufficient strength and thickness to support the weight of any explosives or munitions stored and any equipment used in the unit;

II. To provide working space for personnel and equipment in the unit; and

III. To withstand movement activities that occur in the unit; and

(III) Located and designed, with walls and earthen covers that direct an explosion in the unit in a safe direction, so as to minimize the propagation of an explosion to adjacent units and to minimize other effects of any explosion.

(ii) Above-ground magazines. Above-ground magazines must be located and designed so as to minimize the propagation of an explosion to adjacent units and to minimize other effects of any explosion.

(iii) Outdoor or open storage areas. Outdoor or open storage areas must be located and designed so as to minimize the propagation of an explosion to adjacent units and to minimize other effects of any explosion.

3. Hazardous waste munitions and explosives must be stored in accordance with a Standard Operating Procedure specifying procedures to ensure safety, security, and environmental protection. If these procedures serve the same purpose as the security and inspection requirements of subparagraph (2)(e) of this rule, the preparedness and prevention procedures of paragraph (3) of this rule, and the contingency plan and emergency procedures requirements of paragraph (4) of this rule, then these procedures will be used to fulfill those requirements.

4. Hazardous waste munitions and explosives must be packaged to ensure safety in handling and storage.

5. Hazardous waste munitions and explosives must be inventoried at least annually.

6. Hazardous waste munitions and explosives and their storage units must be inspected and monitored as necessary to ensure explosives safety and to ensure that there is no migration of contaminants out of the unit.

(c) Closure and Post-closure Care [40 CFR 265.1202]

1. At closure of a magazine or unit which stored hazardous waste under this paragraph, the owner or operator must remove or decontaminate all waste residues, contaminated containment system components, contaminated subsoils, and structures and equipment contaminated with waste and manage them as hazardous waste unless Rule ~~1200-01-11-.02~~ 0400-12-01-.02(1)(c)4 applies. The closure plan, closure activities, cost estimates for closure, and financial responsibility for magazines or units must meet all of the requirements specified in paragraph (7) and (8) of this rule, except that the owner or operator may defer closure of the unit as long as it remains in service as a munitions or explosives magazine or storage unit.

2. If, after removing or decontaminating all residues and making all reasonable efforts to effect removal or decontamination of contaminated components, subsoils, structures, and equipment as required in part 1 of this subparagraph, the owner or operator finds that not all contaminated subsoils can be practicably removed or decontaminated, he or she must close the facility and perform post-closure care in accordance with the closure and post-closure requirements that apply to landfills (Rule ~~1200-01-11-.06~~ 0400-12-01-.06(14)(k)).

(32) through (52) (RESERVED)

(53) Appendices [40 CFR 265 APPENDICES]

Appendix I -- Recordkeeping Instructions [40 CFR 265 Appendix I]

The recordkeeping provisions of subparagraph (5)(d) of this rule specify that an owner or operator must keep a written operating record at his facility. This appendix provides additional instructions for keeping portions of the operating record. See part (5)(d)2 of this rule for additional recordkeeping requirements.

The following information must be recorded, as it becomes available, and maintained in the operating record until closure of the facility in the following manner:

(a) Records of each hazardous waste received, treated, stored, or disposed of at the facility which include the following:

1. A description by its common name and the Hazardous Waste Code(s) from Rule ~~1200-01-11-.02~~ 0400-12-01-.02 which apply to the waste. The waste description also must include the waste's physical form, i.e., liquid, sludge, solid, or contained gas. If the waste is not listed in Rule ~~1200-01-11-.02~~ 0400-12-01-.02(4), the description also must include the process that produced it (for example, solid filter cake from production of -- -- -- Hazardous Waste Code W051).

   Each hazardous waste listed in Rule ~~1200-01-11-.02~~ 0400-12-01-.02(4), and each hazardous waste characteristic defined in Rule ~~1200-01-11-.02~~ 0400-12-01-.02(3), has a four-digit Hazardous Waste Code assigned to it. This code must be used for recordkeeping and reporting purposes. Where a hazardous waste contains more than one listed hazardous waste, or where more than one hazardous waste characteristic applies to the waste, the waste description must include all applicable Hazardous Waste Codes.

2. The estimated or manifest-reported weight, or volume and density, where applicable, in one of the units of measure specified in Table 1; and

Table 1

Unit of Measure	Code[1]
Gallons	G
Gallons per Hour	E
Gallons per Day	U
Liters	L
Liters Per Hour	H
Liters Per Day	V
Tons	M
Short tons	T
Short Tons Per Hour	D
Metric Tons Per Hour	W
Short Tons Per Day	N
Metric Tons Per Day	S
Pounds	P
Pounds Per Hour	J
Kilograms	K
Kilograms Per Hour	R
Cubic Yards	Y
Cubic Meters	C
Acres	B
Acre-feet	A
Hectares	Q
Hectare-meter	F
Btu's per Hour	I

FOOTNOTE: [1]Single digit symbols are used here for data processing purposes.

3. The method(s) (by handling code(s) as specified in Table 2) and date(s) of treatment, storage, or disposal.

Table 2-Handling Codes for Treatment, Storage and Disposal Methods

Enter the handling code(s) listed below that most closely represents the technique(s) used at the facility to treat, store or dispose of each quantity of hazardous waste received.

1. Storage
   - S01 Container (barrel, drum, etc.)
   - S02 Tank
   - S03 Waste Pile
   - S04 Surface Impoundment
   - S05 Drip Pad
   - S06 Containment Building (Storage)
   - S99 Other Storage (specify)
2. Treatment
   - (a) Thermal Treatment--
     - T06 Liquid injection incinerator
     - T07 Rotary kiln incinerator
     - T08 Fluidized bed incinerator
     - T09 Multiple hearth incinerator
     - T10 Infrared furnace incinerator
     - T11 Molten salt destructor
     - T12 Pyrolysis
     - T13 Wet Air oxidation
     - T14 Calcination
     - T15 Microwave discharge
     - T18 Other (specify)
   - (b) Chemical Treatment--
     - T19 Absorption mound
     - T20 Absorption field
     - T21 Chemical fixation
     - T22 Chemical oxidation
     - T23 Chemical precipitation
     - T24 Chemical reduction
     - T25 Chlorination
     - T26 Chlorinolysis
     - T27 Cyanide destruction
     - T28 Degradation
     - T29 Detoxification
     - T30 Ion exchange
     - T31 Neutralization
     - T32 Ozonation
     - T33 Photolysis
     - T34 Other (specify)
   - (c) Physical Treatment--
     - (1) Separation of components
       - T35 Centrifugation
       - T36 Clarification
       - T37 Coagulation
       - T38 Decanting
       - T39 Encapsulation
       - T40 Filtration
       - T41 Flocculation
       - T42 Flotation
       - T43 Foaming
       - T44 Sedimentation
       - T45 Thickening
       - T46 Ultrafiltration
       - T47 Other (specify)

(2) Removal of Specific Components
- T48 Absorption-molecular sieve
- T49 Activated carbon
- T50 Blending
- T51 Catalysis
- T52 Crystallization
- T53 Dialysis
- T54 Distillation
- T55 Electrodialysis
- T56 Electrolysis
- T57 Evaporation
- T58 High gradient magnetic separation
- T59 Leaching
- T60 Liquid ion exchange
- T61 Liquid-liquid extraction
- T62 Reverse osmosis
- T63 Solvent recovery
- T64 Stripping
- T65 Sand filter
- T66 Other (specify)

(d) Biological Treatment
- T67 Activated sludge
- T68 Aerobic lagoon
- T69 Aerobic tank
- T70 Anaerobic tank
- T71 Composting
- T72 Septic tank
- T73 Spray irrigation
- T74 Thickening filter
- T75 Trickling filter
- T76 Waste stabilization pond
- T77 Other (specify)
- T78 [Reserved]
- T79 [Reserved]

(e) Boilers and Industrial Furnaces
- T80 Boiler
- T81 Cement Kiln
- T82 Lime Kiln
- T83 Aggregate Kiln
- T84 Phosphate Kiln
- T85 Coke Oven
- T86 Blast Furnace
- T87 Smelting, Melting, or Refining Furnace
- T88 Titanium Dioxide Chloride Process Oxidation Reactor
- T89 Methane Reforming Furnace
- T90 Pulping Liquor Recovery Furnace
- T91 Combustion Device Used in the Recovery of Sulfur Values from Spent Sulfuric Acid
- T92 Halogen Acid Furnaces
- T93 Other Industrial Furnaces Listed in 40 CFR 260.10 (specify)

(f) Other Treatment
- T94 Containment Building (Treatment)

3. Disposal
- D79 Underground Injection
- D80 Landfill
- D81 Land Treatment
- D82 Ocean Disposal

D83 Surface Impoundment (to be closed as a landfill)
D99 Other Disposal (specify)

4. Miscellaneous
X01 Open Burning/Open Detonation
X02 Mechanical Processing
X03 Thermal Unit
X04 Geologic Repository
X99 Other (specify)

Appendix II -- (RESERVED) [40 CFR 265 Appendix II]

Appendix III -- EPA Interim Primary Drinking Water Standards [40 CFR 265 Appendix III]

Parameter	Maximum Level (mg/l)
Arsenic	0.05
Barium	1.0
Cadmium	0.01
Chromium	0.05
Fluoride	1.4-2.4
Lead	0.05
Mercury	0.002
Nitrate (as N)	10
Selenium	0.01
Silver	0.05
Endrin	0.0002
Lindane	0.004
Methoxychlor	0.1
Toxaphene	0.005
2,4-D	0.1
2,4,5-TP Silver	0.01
Radium	5 pCi/1
Gross Alpha	15 pCi/1
Gross Beta	4 millirem/yr
Turbidity	1/TU
Coliform Bacteria	1/100 ml

Footnote: (Comment: Turbidity is applicable only to surface water supplies.)

Appendix IV-- Tests for Significance [40 CFR 265 Appendix IV]

As required in part (6)(d)2 of this rule the owner or operator must use the Student's t-test to determine statistically significant changes in the concentration or value of an indicator parameter in periodic ground-water samples when compared to the initial background concentration or value of that indicator parameter. The comparison must consider individually each of the wells in the monitoring system. For three of the indicator parameters (specific conductance, total organic carbon, and total organic halogen) a single-tailed Student's t-test must be used to test at the 0.01 level of significance for significant increases over background. The difference test for pH must be a two-tailed Student's t-test at the overall 0.01 level of significance.

The student's t-test involves calculation of the value of a t-statistic for each comparison of the mean (average) concentration or value (based on a minimum of four replicate measurements) of an indicator parameter with its initial background concentration or value. The calculated value of the t-statistic must then be compared to the value of the t-statistic found in a table for t-test of significance at the specified level of significance. A calculated value of t which exceeds the value of t found in the table indicates a statistically significant change in the concentration or value of the indicator parameter.

Formulae for calculation of the t-statistic and tables for t-test of significance can be found in most introductory statistics texts.

Appendix V -- Examples of Potentially Incompatible Waste [40 CFR 265 Appendix V]

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_2C1_2, $SOC1_2$, $PC1_3$, CH_3SiC1_3
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
Hyphochlorites
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.

* * * * * * * * * *

Appendix VI--Compounds With Henry's Law Constant Less Than 0.1 Y/X [40 CFR 265 Appendix VI]

Compound name	CAS No.
Acetaldol	107-89-1
Acetamide	60-35-5
2-Acetylaminofluorene	53-96-3
3-Acetyl-5-hydroxypiperidine	
3-Acetylpiperidine	618-42-8
1-Acetyl-2-thiourea	591-08-2
Acrylamide	79-06-1
Acrylic acid	79-10-7
Adenine	73-24-5
Adipic acid	124-04-9
Adiponitrile	111-69-3
Alachlor	15972-60-8
Aldicarb	116-06-3
Ametryn	834-12-8
4-Aminobiphenyl	92-67-1
4-Aminopyridine	504-24-5
Aniline	62-53-3
o-Anisidine	90-04-0
Anthraquinone	84-65-1
Atrazine	1912-24-9
Benzenearsonic acid	98-05-5
Benzenesulfonic acid	98-11-3
Benzidine	92-87-5
Benzo(a)anthracene	56-55-3
Benzo(k)fluoranthene	207-08-9
Benzoic acid	65-85-0
Benzo(g,h,i)perylene	191-24-2
Benzo(a)pyrene	50-32-8

Benzyl alcohol	100-51-6
gamma-BHC	58-89-9
Bis(2-ethylhexyl)phthalate	117-81-7
Bromochloromethyl acetate	
Bromoxynil	1689-84-5
Butyric acid	107-92-6
Caprolactam (hexahydro-2H-azepin-2-one)	105-60-2
Catechol (o-dihydroxybenzene)	120-80-9
Cellulose	9004-34-6
Cell wall	
Chlorhydrin (3-Chloro-1,2-propanediol).	96-24-2
Chloroacetic acid	79-11-8
2-Chloroacetophenone	93-76-5
p-Chloroaniline	106-47-8
p-Chlorobenzophenone	134-85-0
Chlorobenzilate	510-15-6
p-Chloro-m-cresol (6-chloro-m-cresol)	59-50-7
3-Chloro-2,5-diketopyrrolidine	
Chloro-1,2-ethane diol	
4-Chlorophenol	106-48-9
Chlorophenol polymers (2-chlorophenol & 4-chlorophenol)	95-57-8 & 106-48-9
1-(o-Chlorophenyl)thiourea	5344-82-1
Chrysene	218-01-9
Citric acid	77-92-9
Creosote	8001-58-9
m-Cresol	108-39-4
o-Cresol	95-48-7
p-Cresol	106-44-5
Cresol (mixed isomers)	19-77-3
4-Cumylphenol	27576-86
Cyanide	57-12-5
4-Cyanomethyl benzoate	
Diazinon	333-41-5
Dibenzo(a,h)anthracene	53-70-3
Dibutylphthalate	84-74-2
2,5-Dichloroaniline (N,N'-dichloroaniline)	95-82-9
2,6-Dichlorobenzonitrile11	1194-65-6
2,6-Dichloro-4-nitroaniline	99-30-9
2,5-Dichlorophenol	333-41-5
3,4-Dichlorotetrahydrofuran	3511-19
Dichlorvos (DDVP)	62-73-7
Diethanolamine	111-42-2
N,N-Diethylaniline	91-66-7
Diethylene glycol	111-46-6
Diethylene glycol dimethyl ether (dimethyl Carbitol)	111-96-6
Diethylene glycol monobutyl ether (butyl Carbitol)	112-34-5
Diethylene glycol monoethyl ether acetate (Carbitol acetate)	112-15-2
Diethylene glycol monoethyl ether (Carbitol Cellosolve) .	111-90-0
Diethylene glycol monomethyl ether (methyl Carbitol)	111-77-3
N,N'-Diethylhydrazine	1615-80-1
Diethyl (4-methylumbelliferyl) thionophosphate	299-45-6
Diethyl phosphorothioate	126-75-0
N,N'-Diethylpropionamide	15299-99-7
Dimethoate	60-51-5
2,3-Dimethoxystrychnidin-10-one	357-57-3
4-Dimethylaminoazobenzene	60-11-7
7,12-Dimethylbenz(a)anthracene	57-97-6
3,3-Dimethylbenzidine	119-93-7

Dimethylcarbamoyl chloride	79-44-7
Dimethyldisulfide	624-92-0
Dimethylformamide	68-12-2
1,1-Dimethylhydrazine	57-14-7
Dimethylphthalate	131-11-3
Dimethylsulfone	67-71-0
Dimethylsulfoxide	67-68-5
4,6-Dinitro-o-cresol	534-52-1
1,2-Diphenylhydrazine	122-66-7
Dipropylene glycol (1,1'-oxydi-2-propanol)	110-98-5
Endrin	72-20-8
Epinephrine	51-43-4
mono-Ethanolamine	141-43-5
Ethyl carbamate (urethane)	5-17-96
Ethylene glycol	107-21-1
Ethylene glycol monobutyl ether (butyl Cellosolve)	111-76-2
Ethylene glycol monoethyl ether (Cellosolve)	110-80-5
Ethylene glycol monoethyl ether acetate (Cellosolve acetate)	111-15-9
Ethylene glycol monomethyl ether (methyl Cellosolve)	109-86-4
Ethylene glycol monophenyl ether (phenyl Cellosolve)	122-99-6
Ethylene glycol monopropyl ether (propyl Cellosolve)	2807-30-9
Ethylene thiourea (2-imidazolidinethione)	96-45-7
4-Ethylmorpholine	100-74-3
3-Ethylphenol	620-17-7
Fluoroacetic acid, sodium salt	62-74-8
Formaldehyde	50-00-0
Formamide	75-12-7
Formic acid	64-18-6
Fumaric acid	110-17-8
Glutaric acid	110-94-1
Glycerin (Glycerol)	56-81-5
Glycidol	556-52-5
Glycinamide	598-41-4
Glyphosate	1071-83-6
Guthion	86-50-0
Hexamethylene-1,6-diisocyanate (1,6-diisocyanatohexane)	822-06-0
Hexamethyl phosphoramide	680-31-9
Hexanoic acid	142-62-1
Hydrazine	302-01-2
Hydrocyanic acid	74-90-8
Hydroquinone	123-31-9
Hydroxy-2-propionitrile (hydracrylonitrile)	109-78-4
Indeno (1,2,3-cd) pyrene	193-39-5
Lead acetate	301-04-2
Lead subacetate (lead acetate, monobasic)	1335-32-6
Leucine	61-90-5
Malathion	121-75-5
Maleic acid	110-16-7
Maleic anhydride	108-31-6
Mesityl oxide	141-79-7
Methane sulfonic acid	75-75-2
Methomyl	16752-77-5
p-Methoxyphenol	150-76-5
Methyl acrylate	96-33-3
4,4'-Methylene-bis-(2-chloroaniline)	101-14-4
4,4'-Methylenediphenyl diisocyanate (diphenyl methane diisocyanate)	101-68-8
4,4'-Methylenedianiline	101-77-9
Methylene diphenylamine (MDA)	

5-Methylfurfural	620-02-0
Methylhydrazine	60-34-4
Methyliminoacetic acid	
Methyl methane sulfonate	66-27-3
1-Methyl-2-methoxyaziridine	
Methylparathion	298-00-0
Methyl sulfuric acid (sulfuric acid, dimethyl ester)	77-78-1
4-Methylthiophenol	106-45-6
Monomethylformamide (N-methylformamide)	123-39-7
Nabam	142-59-6
alpha-Naphthol	90-15-3
beta-Naphthol	135-19-3
alpha-Naphthylamine	134-32-7
beta-Naphthylamine	91-59-8
Neopentyl glycol (dimethylpropane)	126-30-7
Niacinamide	98-92-0
o-Nitroaniline	88-74-4
Nitroglycerin	55-63-0
2-Nitrophenol	88-75-5
4-Nitrophenol	100-02-7
N-Nitrosodimethylamine	62-75-9
Nitrosoguanidine	674-81-7
N-Nitroso-n-methylurea	684-93-5
N-Nitrosomorpholine (4-nitrosomorpholine)	59-89-2
Oxalic acid	144-62-7
Parathion	56-38-2
Pentaerythritol	115-77-5
Phenacetin	62-44-2
Phenol	108-95-2
Phenylacetic acid	103-82-2
m-Phenylene diamine	108-45-2
o-Phenylene diamine	95-54-5
p-Phenylene diamine	106-50-3
Phenyl mercuric acetate	62-38-4
Phorate	298-02-2
Phthalic anhydride	85-44-9
alpha-Picoline (2-methyl pyridine)	109-06-8
1,3-Propane sultone	1120-71-4
beta-Propiolactone	57-57-8
Proporur (Baygon)	
Propylene glycol	57-55-6
Pyrene	129-00-0
Pyridinium bromide	39416-48-3
Quinoline	91-22-5
Quinone (p-benzoquinone)	106-51-4
Resorcinol	108-46-3
Simazine	122-34-9
Sodium acetate	127-09-3
Sodium formate	141-53-7
Strychnine	57-24-9
Succinic acid	110-15-6
Succinimide	123-56-8
Sulfanilic acid	121-47-1
Terephthalic acid	100-21-0
Tetraethyldithiopyrophosphate	3689-24-5
Tetraethylenepentamine	112-57-2
Thiofanox	39196-18-4
Thiosemicarbazide	79-19-6
2,4-Toluenediamine	95-80-7

2,6-Toluenediamine	823-40-5
3,4-Toluenediamine	496-72-0
2,4-Toluene diisocyanate	584-84-9
p-Toluic acid	99-94-5
m-Toluidine	108-44-1
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1
Triethanolamine	102-71-6
Triethylene glycol dimethyl ether	
Tripropylene glycol	24800-44-0
Warfarin	81-81-2
3,4-Xylenol (3,4-dimethylphenol)	95-65-8

NOTE: RELATION BETWEEN HENRY'S LAW CONSTANT AS Y/X (MOLE FRACTION GAS PHASE/MOLE FRACTION AQUEOUS PHASE, UNITLESS) AND HENRY'S LAW CONSTANT AS EQUILIBRIUM CONSTANT (K_a) IN UNITS OF ATMOSPHERES/(MOLE/M^3): $Y/X = K_a \times 5.2 \times 10^{-4}$; THUS, 0.1 $Y/X = 1.8 \times 10^{-4}$ atmospheres/mole/m^3, which is the partial pressure of the compound in the gas phase in equilibrium with the compound dissolved in water at a concentration of one mole per cubic meter. (Volume of one cubic meter=1,000 liters=1 kiloliter.)

Authority: T.C.A. §§ 68-212-101 et seq. and 4-5-201 et seq.

* If a roll-call vote was necessary, the vote by the Agency on these rulemaking hearing rules was as follows:

Board Member	Aye	No	Abstain	Absent	Signature (if required)
Dr. Warren Anderson	X				
Michael Atchison	X				
Elaine Boyd	X				
Melissa Bryant				X	
Dr. Jack Deibert	X				
Kenneth Donaldson	X				
Dr. George Hyfantis, Jr.	X				
Jared L. Lynn	X				
Mayor Franklin Smith, III	X				
Mark Williams				X	
Glenn Youngblood	X				

I certify that this is an accurate and complete copy of rulemaking hearing rules, lawfully promulgated and adopted by the Solid Waste Disposal Control Board on 10/04/2011, and is in compliance with the provisions of TCA 4-5-222.

I further certify the following:

Notice of Rulemaking Hearing filed with the Department of State on: 06/07/11

Rulemaking Hearing(s) Conducted on: (add more dates). 08/05/11

Date: October 4, 2011

Signature: _____

Name of Officer: Kenneth Donaldson

Title of Officer: Chairman

Subscribed and sworn to before me on: _____

Notary Public Signature: _____

My commission expires on: _____

All rulemaking hearing rules provided for herein have been examined by the Attorney General and Reporter of the State of Tennessee and are approved as to legality pursuant to the provisions of the Administrative Procedures Act, Tennessee Code Annotated, Title 4, Chapter 5.

_____
Robert E. Cooper, Jr.
Attorney General and Reporter

_____
Date

Department of State Use Only

Filed with the Department of State on: _____

Effective on: _____

_____
Tre Hargett
Secretary of State

Public Hearing Comments

One copy of a document containing responses to comments made at the public hearing must accompany the filing pursuant to T.C.A. §4-5-222. Agencies shall include only their responses to public hearing comments, which can be summarized. No letters of inquiry from parties questioning the rule will be accepted. When no comments are received at the public hearing, the agency need only draft a memorandum stating such and include it with the Rulemaking Hearing Rule filing. Minutes of the meeting will not be accepted. Transcripts are not acceptable.

Comment: While reviewing the public notice and comparing its contents against the technical corrections and clarifications that EPA published on March 18, 2010, June 4, 2010 and December 20, 2010, a commenter noticed that some of EPA's technical corrections and clarifications were missing. These omissions appear to be oversights and are not substantive but are required to be included in order for the state to maintain state authorization for the program. Therefore, the following corrections or clarifications should be made to conform to EPA's regulations:

Rule 0400-12-01-.01: The definition of "new hazardous waste management facility" in paragraph (2): Delete the obsolete verbiage and replace it with October 31, 1980, since that is the date hazardous waste first became subject to regulation in Tennessee.

Rule 0400-12-01-.02: Subpart (1)(b)3(iv): In the Table under the category of scrap metal correct the reference to excluded scrap metal to be consistent with EPA; in subparts (1)(g)2(i) and (iii) delete the reference to subparagraph (4)(c) since that subparagraph does not contained listed acute hazardous waste; in subparts (1)(e)5(i) and (ii) delete the reference to subparagraph (4)(c) since that subparagraph does not contained listed acute hazardous waste; in part (1)(e)6 reorder the phrases so that "under this subparagraph" follows "from full regulation" to make it consistent with EPA; in part (1)(e)7 amend the language to make it consistent with EPA; in subpart (1)(e)7(ii): amend the language to make it consistent with EPA; in subpart (1)(f)1(ii), to be consistent with EPA, add references to paragraphs (13) and (14) of Rule 0400-12-01-.09; in part (4)(a)3 amend the language to be consistent with EPA; in part (4)(a)4 delete the reference to subparagraph (4)(c) since that subparagraph does not contained listed acute hazardous waste; and in part (4)(c)1 in the listed description for K107 change the word "hydrazines" to its correct spelling "hydrazides".

Rule 0400-12-01-.03: in subpart (4)(e)2(iv) to be consistent with EPA, change the subpart to clarify that generators accumulating hazardous waste on-site must also comply with all applicable requirements under Rule 0400-12-01-.10 (Land Disposal Restrictions); in part (4)(e)3 change the language of this part to be consistent with the language used by EPA; in subparts (4)(e)5(i) and (ii) delete the reference to subparagraph (4)(c) since that subparagraph does not contained listed acute hazardous waste; in subpart (4)(e)6(vi) to be consistent with EPA change the subpart to clarify that generators accumulating hazardous waste on-site must also comply with all applicable requirements under Rule 0400-12-01-.10 (Land Disposal Restrictions); in part (5)(c)3 use the correct regulatory reference in Rule 040-12-01-.05 and 0400-12-01-.06 to be consistent with EPA; in part (8)(a)2 change the reference from "part (3)(a)1" to "subparagraph (3)(a)" to be consistent with EPA; in part (12)(a)1 change the language in this part to be consistent with EPA; in item (12)(g)2(iii)(I) change the word "consolidating" to "bulking" to be consistent with EPA; in part (12)(l)3 change the language in this part to be consistent with the change made to part (12)(a)1; in subpart (12)(m)5(i) change the language in this subpart to be consistent with EPA; in subpart (12)(o)1(i) change the language in this subpart to be consistent with EPA; and in subpart (12)(o)2(i) change the language in this subpart to be consistent with EPA.

Response: The Department agrees and all of the requested changes have been made.

Comment: On May 14, 2009, EPA published in the Federal Register a notice that the National Environmental Performance Track Program was terminated. All regulations referring to EPA's Performance Track Program should be terminated and it is recommended that the following regulations be appropriately amended, deleted, or deleted and its place "reserved" since they are now obsolete:

Rule 0400-12-01-.01: in subparagraph (2)(a) the definitions of "performance track member facility" and "source at a performance track member facility" should be deleted.

Rule 0400-12-01-.03: In parts (12)(a)1 and (12)(l)3 amend out the reference to the performance track program.

Rule 0400-12-01-.05: Subparts (2)(f)2(iv) and (v) should be deleted and reserved; in subparagraph (9)(e) amend out the reference to the performance track program; part (10)(f)4 should be deleted and reserved; part (10)(l)5 should be deleted and reserved; and in subpart (30)(b)3(iv) amend out the reference to the performance track program.

Response: The Department checked with EPA Region IV and was directed to delete all references to the National Performance Track Program from Tennessee's regulations since that program has been terminated by the EPA. Therefore, the Department agrees with the commenter and all requested changes (deletions) have been made.

Regulatory Flexibility Addendum
Pursuant to T.C.A. § 4-5-401 through 4-5-404, prior to initiating the rule making process as described in T.C.A. § 4-5-202(a)(3) and T.C.A. § 4-5-202(a), all agencies shall conduct a review of whether a proposed rule or rule affects small businesses.

This rulemaking includes the adoption of the December 1, 2008, federal revisions that establishes a voluntary alternate set of generator requirements applicable to laboratories owned by eligible academic entities; the adoption of the January 8, 2010, federal revisions incorporating recent changes to the agreements concerning transboundary movement of hazardous waste among countries belonging to the Organization for Economic Cooperation and Development (OECD); and the federal technical corrections published by EPA on March 18, 2010, June 4, 2010 and December 20, 2010. The vast majority of the changes to these regulations substantially codify federal regulations. On May 14, 2009, EPA published in the Federal Register a notice that the National Environmental Performance Track Program was terminated, and as result, all references to this program have been eliminated from these rules. The remaining changes are those necessary to change the regulatory Chapter designation from "1200-01-11" to "0400-12-01", correcting typos, delete obsolete language, and to make general housekeeping changes. Therefore, these questions regarding the impact on small businesses will address the impact of the non-federal changes.

(1) The type or types of small business and an identification and estimate of the number of small businesses subject to the proposed rule that would bear the cost of, or directly benefit from the proposed rule.

This rulemaking changes the rule numbers from Chapter 1200-01-11 to 0400-12-01. It also makes housekeeping changes correcting editorial errors. Therefore, there is no impact on small business.

(2) The projected reporting, recordkeeping, and other administrative costs required for compliance with the proposed rule, including the type of professional skills necessary for preparation of the report or record.

There are no projected additional reporting, recordkeeping or administrative costs as a result of this rulemaking.

(3) A statement of the probable effect on impacted small businesses and consumers.

There is no adverse affect on small businesses as a result of this rulemaking.

(4) A description of any less burdensome, less intrusive or less costly alternative methods of achieving the purpose and objectives of the proposed rule that may exist, and to what extent the alternative means might be less burdensome to small business.

The Department is unaware of alternatives to the proposed rules.

(5) A comparison of the proposed rule with any federal or state counterparts.

There is no exact match with any federal or state counterparts.

(6) Analysis of the effect of the possible exemption of small businesses from all or any part of the requirements contained in the proposed rule.

Due to the administrative nature of this rulemaking, small businesses could not be exempt from this rulemaking.

Impact on Local Governments

Pursuant to T.C.A. 4-5-220 and 4-5-228 "any rule to proposed to be promulgated shall state in a simple declarative sentence, without additional comments on the merits of the policy of the rules or regulation, whether the rule or regulation may have a projected impact on local governments." (See Public Chapter Number 1070 (http://state.tn.us/sos/acts/106/pub/pc1070.pdf) of the 2010 Session of the General Assembly)

The Department does not anticipate that this rulemaking will have an impact on local government.

Additional Information Required by Joint Government Operations Committee

All agencies, upon filing a rule, must also submit the following pursuant to TCA 4-5-226(i)(1).

(A) A brief summary of the rule and a description of all relevant changes in previous regulations effectuated by such rule;

These rulemaking changes reflect a reorganization of all TDEC rules in order to be more logical and user friendly. In addition, this rulemaking includes the adoption of the December 1, 2008, federal revisions that establishes a voluntary alternate set of generator requirements applicable to laboratories owned by eligible academic entities; the adoption of the January 8, 2010, federal revisions incorporating recent changes to the agreements concerning transboundary movement of hazardous waste among countries belonging to the Organization for Economic Cooperation and Development (OECD); and the federal technical corrections published by EPA on March 18, 2010, June 4, 2010 and December 20, 2010. The vast majority of the changes to these regulations substantially codify federal regulations. On May 14, 2009, EPA published in the Federal Register a notice that the National Environmental Performance Track Program was terminated, and as result, all references to this program have been eliminated from these rules. The remaining changes reflect a reorganization of all TDEC rules in order to be more logical and user friendly. The regulatory Chapter designation is being changed from "1200-01-11" to "0400-12-01", along with correcting typos, delete obsolete language, and to make general housekeeping changes.

(B) A citation to and brief description of any federal law or regulation or any state law or regulation mandating promulgation of such rule or establishing guidelines relevant thereto;

These rules are promulgated under the authorities of T.C.A. §§ 68-212-101 et seq. and 4-5-201 et seq.

(C) Identification of persons, organizations, corporations or governmental entities most directly affected by this rule, and whether those persons, organizations, corporations or governmental entities urge adoption or rejection of this rule;

All entities regulated under T.C.A. §§ 68-212-101 et seq. are affected by this rule. None of these affected entities commented on this rule change.

(D) Identification of any opinions of the attorney general and reporter or any judicial ruling that directly relates to the rule;

The Board is not aware of any related Attorney General Actions or judicial ruling directly relating to the rule.

(E) An estimate of the probable increase or decrease in state and local government revenues and expenditures, if any, resulting from the promulgation of this rule, and assumptions and reasoning upon which the estimate is based. An agency shall not state that the fiscal impact is minimal if the fiscal impact is more than two percent (2%) of the agency's annual budget or five hundred thousand dollars ($500,000), whichever is less;

The Department is not aware of any increase of decrease of revenues resulting from this rulemaking.

(F) Identification of the appropriate agency representative or representatives, possessing substantial knowledge and understanding of the rule;

David Moran
Division of Solid Waste Management
5th Floor, L & C Tower, 401 Church Street
Nashville, TN 37243
Phone: (615) 532-0875

(G) Identification of the appropriate agency representative or representatives who will explain the rule at a scheduled meeting of the committees;

Alan M. Leiserson

Legal Services Director, Office of General Counsel
Tennessee Department of Environment and Conservation
20th Floor, L & C Tower
Nashville, TN 37243-1548

(H) Office address, telephone number, and email address of the agency representative or representatives who will explain the rule at a scheduled meeting of the committees; and

Legal Services Director, Office of General Counsel
Tennessee Department of Environment and Conservation
20th Floor, L & C Tower
Nashville, TN 37243-1548
Alan.Leiserson@tn.gov

(I) Any additional information relevant to the rule proposed for continuation that the committee requests.

The Board is not aware of any additional information requested by the committee.